VOLUME 3 OF 5

Court File No. CV-25-00000750-0000

ONTARIO
SUPERIOR COURT OF JUSTICE

B E T W E E N:

THE REGIONAL MUNICIPALITY OF WATERLOO

Applicant

and

PERSONS UNKNOWN AND TO BE ASCERTAINED

Respondents

APPLICATION UNDER Rule 14.05 of the *Rules of Civil Procedure*

JOINT TRANSCRIPT BRIEF

(Application Hearing, returnable April 16, 17, and 20, 2026)

March 13, 2026

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EXHIBIT “A”

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COURT FILE NO. CV-21-77187

ONTARIO

SUPERIOR COURT OF JUSTICE

BETWEEN

KRISTEN HEEGSMA, DARRIN MARCHAND, GORD SMYTH, MARIO MUSCATO, SHAWN ARNOLD, BRADLEY CALDWELL CHRISTINE DELOREY, GLEN GNATUK, TAYLOR GOGO-HORNER, CASSANDRA JORDAN, JULIA LAUZON, AMMY LEWIS, ASHLEY MACDONALD, COREY MONAHAN, MISTY MARSHALL, SHERRI OGDEN, JAHMAL PIERRE, LINSLEY GREAVES and PATRICK WARD

Applicants

-AND-

CITY OF HAMILTON

Respondent

The Cross-Examination of Dr. Sharon Koivu, on an Affidavit dated July 26, 2024, taken upon affirmation in the above action this, 6th of September, 2024, conducted via videoconference hosted by the offices of Nimigan Mihailovich Reporting Inc.

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I N D E X

INDEX OF EXHIBITS

GUIDE TO UNDERTAKINGS, ADVISEMENTS, and REFUSALS

This should be regarded as a guide and does not necessarily constitute a complete list

UNDERTAKINGS

(None noted).

UNDER ADVISEMENTS

(None noted).

REFUSALS

[1] 68/11.

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--- Commencing at 9 35 a.m.

DR. SHARON KOIVU,

THE WITNESS HEREINBEFORE NAMED,

Having been duly sworn by me to testify to the truth,

testified on their oath as follows, to wit

CROSS-EXAMINATION BY MR. CHOUDHRY

1 Q. Good morning, Dr. Koivu. As we discussed off the record, I'm going to go through a number of logistical issues that I think you've been given advance notice of. And this is sort of a standard spiel I use to begin with all of my cross-examinations in this matter.

So I will begin by introducing myself. My name is Sujit Choudhry, and I am one of the lawyers for the Applicants.

As you know, I am cross-examining you on your affidavit, which has been filed by the City of Hamilton in a court case regarding homeless encampments. Your affidavit and this cross-examination will be put into evidence before the Court and so it's therefore important to tell the truth and you affirmed that you will do so.

If you would like me to repeat a question, please do so. If you would like a moment to co lect your thoughts to answer a question, please take it. Although we know your time is valuable, it's not a race, so please take a moment.

As I believe you've been asked, but I will ask you to confirm on the record, can you confirm you only have your affidavit and exhibits in front of you?

A. Yes.

2 Q. And you have no other -- sorry?

A. Yes. That's all I have. Now, I have on the screen my affidavit, right, with us. I have a hard copy of the affidavit, just my part, in case there was an Internet problem, but there's nothing else on it, and I wasn't going to refer to it unless we had some kind of problem with the internet. But I don't have anything else available.

3 Q. And, to be clear, Dr. Koivu, you're free to review to either the electronic copy of the affidavit or the written copy, whatever you want.

A. Okay. I wasn't sure.

4 Q. No. That's fine. The only thing you're not able to have are notes of any kind. And you can confirm that that's the case?

A. Yes, I can absolutely confirm that that is the case.

5 Q. Okay. And also can you confirm that you are alone?

A. Yes. I'm in my house, and I kicked my husband out, so I am very alone.

6 Q. Okay. Good. Thank you. I appreciate it. And so I understand you've been a witness on a virtual cross-examination before; is that right?

A. Yes, that is correct.

7 Q. So I'm not sure what the lawyers in the other case did, but in this case, if I put materials to you that you don t have with you, or even if you do have them with you, I will put them up on the screen for screen share with zoom.

And please when I do, I don't know how big your screen is, so if you can't read it, tell me and I will enlarge it.

A. Okay.

8 Q. If you want me to scroll up and down the document, I can.

A. Okay.

9 Q. And if you need time to review it, I will proactively offer you time, and if you need more time, just tell me. Okay? Great.

A. Mm-hmm.

10 Q. So let's begin. So you have -- you are a witness in this hearing; correct?

A. Yes.

11 Q. In this matter?

A. Yes.

12 Q. Can you please explain what you understand your role to be in this proceeding?

A. My role is to give fair, unbiased, nonpartisan opinion based on my experience and my knowledge of the situation. And it's particularly pertaining to encampments versus shelter.

It's very important that what I say I answer truthfully and unbiased, with an unbiased perspective and will answer truthfully to your questions. And I made sure that that was mandatory for me to take this.

I will just say that when I was asked to be a witness, I realize now that that is also obviously part of being a witness, but it is very important to me that I give you a fair, unbiased and answer honestly to all of the questions.

And everything that I do is based on that.

13 Q. Okay. Good. Thank you.

And so I'd like to take you to you Exhibit A of your affidavit. So I'm going to use the screen share function now. So if you will give me a second, please.

A. Absolutely.

14 Q. Can you read the document on the screen?

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I'm going to increase it a bit. Can you see that?

A. One second. Let me see if I can increase my screen somehow with the view options.

MS SHORES So, counsel, what I see on your screen is Dr. Koivu's affidavit, but not Exhibit A.

MR. CHOUDHRY Yeah, I'm not there yet, but I just want to just make sure that she can see the affidavit, and then I will take her to Exhib t A.

Can you see this, Dr. Koivu?

THE WITNESS I can see it, but I can't read it, and for some reason you are really small on my screen, and I'm trying to make you bigger.

MR. CHOUDHRY Can we just go off the record for a second?

-- OFF THE RECORD --

BY MR. CHOUDHRY

15 Q. So, Dr. Koivu, do you see on your screen your affidavit?

A. Yes, I do.

16 Q. Okay. So, Dr. Koivu, I'm just going to use the table of contents here and take you to Exhibit A, which is your curriculum vitae.

A. Yes.

17 Q. Do you see this document?

A. Yes.

18 Q. And can you confirm that this is your curriculum vitae?

A. Yes.

19 Q. So I'd like to just go through -- I'm going to enlarge this a bit. Can you read that?

A. Yes.

20 Q. So I'd like to go through your clinical appointments, if I could.

A. Okay.

21 Q. Okay. So it says that -- here that your first clinical appointment was in -- was as the Medical Officer of Health in Elgin St. Thomas; is that right. I am just highlighting it here.

A. I was working in St. Thomas Elgin General Hospital prior to that, so from 1985 to 2002 I also had privileges at St. Thomas Elgin General Hospital and worked at St. Thomas Elgin General Hospital.

22 Q. Well, let's get into that, because I don't see that on your CV, so we just want to make sure we have your complete background. In that --

MS SHORES I think it is under "other positions," counsel.

THE WITNESS It might be under "other positions."

BY MR. CHOUDHRY

23 Q. I see. Back here. Down here. Sorry. So these are the other positions you are referring to?

A. Yes.

24 Q. So you were a family practice physician --

A. Yes.

25 Q. -- from 1985 to 2002. And that was at -- it doesn t indicate here that that is at St. Elgin Hospital, as you described it.

Is that where you were?

A. My family practice was private, but during that time I had privileges at St. Thomas Elgin General Hospital, and I continue to have privileges at St. Thomas Elgin General Hospital.

Working in an independent family practice, I didn't think of it as a clinical appointment, but all of us at the time had privileges at the hospital. We ran the emergency department. I did all my own OB. It was a completely comprehensive family practice.

So in the statement of a family practice, it included a comprehensive family practice, which included working at St. Thomas Elgin General Hospital.

26 Q. Okay. So in 2008, you began working at the London Health Sciences Centre; correct? The London Health Sciences Centre?

A. Yes, that is correct.

27 Q. Am I correct in assuming that in 2008 you moved to London Ontario to take up this position?

A. No.

28 Q. Okay.

A. I didn't move. I was commuting at that time.

29 Q. I see. Okay. And did you move to London at some point?

A. Yes, I moved to London in 2013.

30 Q. Okay. And so it says here on your CV that you were -- from 2008 to 2021 you were a palliative care physician consultant at the London Health Sciences Centre; is that correct?

A. Yes, that is correct.

31 Q. Are you no longer a palliative care physician consultant at the London Health Sciences Centre?

A. That is correct. I am no longer a physician consultant at London Health Sciences Centre. And actually, f you keep going, I am now not working as of this June, which is after -- well, July, after this was written, I am no longer working at London Health Sciences Centre.

I have -- I did not renew my privileges to work at London Health Sciences Centre, and I am working

exclusively in St. Thomas at this time.

32 Q. I see. Okay. So let's just get some updates to this, if we could, because that's important for me to understand.

So it states on your -- so it states here on this CV, which was attached to your affidavit sworn in July of 2024, that you are at present, as of the time of swearing this affidavit, an addiction medicine consultant at the London Health Sciences Centre.

That information is out of date?

A. That information is out of date. I am very sorry about that.

33 Q. That's fine. It happens. So just so we can get on the record, so you were an addiction medicine consultant at the London Health Sciences Centre until what date?

A. Until June 30th.

34 Q. Of 2024?

A. 2024. Yes. That's right.

35 Q. And so are you able then -- and so do you currently have privileges at the London Health Sciences Centre?

A. No.

36 Q. It states in the CV that you are an addiction medicine consultant at St. Thomas Elgin General Hospital. Is that still the case?

A. Yes. That is still the case.

37 Q. So just to summarize here, is it fair to say that your addition medicine practice as a consultant is now based at St. Thomas Elgin General Hospital?

A. That is fair to say, yes.

38 Q. Okay. And are you able to explain why you left London Health Sciences Centre -- or pardon me, why you did not renew your privileges at the London Health Sciences Centre?

A. I would say it is multifactorial. One is that I now live in Port Stanley. I wanted to spend more time with my family, particularly with my mother, who was needing help.

I also wanted to be able to speak freely on issues that I felt were important, and I felt that it was very important to me that I have that freedom within St. Thomas. And in London, there was a request for me to speak through the Public Relations Committee.

I felt that overa l there were many reasons for leaving. I loved my position. I loved my job. I loved the team that I was working with, but felt that at this present time in my age and practice, I wanted to focus my practice in St. Thomas, which has a very different approach to addiction.

I would like to be able to expand my practice in St. Thomas and felt that this was really where I wanted to put my energy at this time.

39 Q. So, Dr. Koivu, you used the phrase issues that were important to you; is that correct?

A. Yes.

40 Q. Can you please explain what you mean by issues that were important -- that are important to you?

A. I think that issues that are important to me include things around problems that I'm seeing related to diverted drugs, being able to respond about things such as supervised injection sites, which I do support.

There are many issues in addiction that -- safe supply is one of them, but not limited, that I felt that I really wanted to be able to respond to questions about them if they came up and felt very supported by my colleagues, but also recognize that in London Health Sciences Centre, those things need to be run by PR.

It was one of many factors that made me make the decision that a good place for me to be working is in St. Thomas, which has had a very different approach to homelessness. It's had a different approach to people suffering with opioid use disorder. And this to me was an important fit for me.

41 Q. And when you say "questions that came up," questions posed by whom?

A. Questions that could be posed by particularly -- I'm going to say particularly f the media asked me questions, I wanted to feel free to respond, but not limited to that.

There can be -- even something such as being able to freely express myself in any forum, in medical forums. I just felt very supported in St. Thomas and felt that I didn't feel comfortable running -- I didn't feel comfortable running through the Public Relations Committee in London Health Sciences Centre to be having approval of things I say when a board member on the London Health Sciences Centre who, by virtue of being the chief of nursing, is also on the board of London Intercommunity Health, and I felt that there was a conflict of interest there that could affect my ability to speak freely.

42 Q. Okay.

A. Not my conflict of interest, but the board -- the London Health Sciences Centre.

43 Q. Okay. Thank you for that. We will come back to that in a moment.

So I want to just focus in a bit on the time that you were at London Health Sciences Centre where

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you were both a palliative care physician consultant and an addiction medicine consultant. And if I understand correctly, that would have been from between 2012 and 2021 where you practiced in both areas; is that right?

A. Yes.

44 Q. And during that time, what percentage of your practice would you say was devoted to palliative care and what percentage was devoted to addiction medicine?

A. At the beginning of that time period, more of my practice was devoted to palliative care. It was actually in palliative care that I became interested in addiction.

I started seeing people who were dying from infectious complications of injection drug use and recognized that we had a -- in spite of being a tertiary care centre, there was very limited addiction support at the hospital.

So initially, my involvement was highly palliative care, and over time, it became almost exclusively addiction until it was exclusively addiction.

45 Q. Okay. We will come back to that as well. And then -- so in your role as an addiction medicine consultant at London Health Sciences, is it fair to say that your practice was an in-patient practice?

A. Exclusively.

46 Q. Exclusively, okay.

And so, again, I would like to come back to that. And so just to be clear, I don't see on your CV any practice experience in the City of Hamilton; is that right?

A. I have not done medical practice in the City of Hamilton, that is right.

47 Q. Okay. Thank you.

So I would like to scroll down to your presentations, if I could. And I'm sorry if this gives you a bit of nausea. Sometimes it does.

A. Yes, vertigo.

48 Q. Yeah. Okay. Sorry. So do you see the title "Presentations" here?

A. Yes.

49 Q. Okay. And I see that the last presentation -- or the most recent presentation on this list is the 24th of May, 2018?

A. Well, that's for an invited lecture as a keynote speaker. That's very different from presentations.

50 Q. Oh, so you've given other presentations since then?

A. I think if you keep scrolling down, you will see them.

51 Q. I didn't see them.

A. Oh, okay.

52 Q. Well, if you can direct me to it, I would be happy to take you there. And you are free -- Dr. Koivu, you are free to refer to your CV, because it is an exhibit to your affidavit.

I am just scrolling through here as well. I see media appearances. I see symposia. Is this what you are referring to? And workshops? This is on the last page of your Exhibit A.

A. Can you go back to the top of where that is, "invited lecture"?

53 Q. Sure. I'm just going to scroll up. You tell me when -- I'm going to take you where I think you are referring to, and you can tell me if that is right.

A. I have given talks since 2017 or '18.

54 Q. Oh, you have?

A. Yes, I have.

55 Q. So this CV is not up-to-date?

A. Yes, I am missing talks that I have given. I have given presentations since that time.

56 Q. Okay. So it would be helpful -- so, counsel, we would like an undertaking to provide Dr. Koivu's updated CV that contains any missing information.

MS SHORES Yes. Of course.

---UNDERTAKING

MR. CHOUDHRY Thank you.

BY MR. CHOUDHRY

57 Q. So, Dr. Koivu, I want to ask you about a presentation that you gave recently to the House of Commons Standing Comm tee on Health on May 6, 2024.

Do you remember that?

A. Yes, I do.

58 Q. And so, Dr. Koivu, I'm going to put up on this screen -- and we will mark this as Exhibit 1 to the cross-examination. This is the Standing Committee -- these are the minutes of the Standing Committee of Health of May 6, 2024.

MS SHORES So let me just interject with the respect to the marking of exhibits. We will mark this for identification, and you can put the question to Dr. Koivu to authenticate the document if she is able to do so.

-- EXHIBIT NO. 1 Minutes of the Meeting of the Standing Committee of Health dated May 6, 2024.

BY MR. CHOUDHRY

59 Q. Sure. So, Dr. Koivu did you testify before the Standing Committee of Health of the House of Commons on May 6, 2024?

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A. Yes, I did.
60 Q. Have you ever seen these minutes?
A. No, I haven't.
61 Q. You haven't. Okay. So, Dr. Koivu, these are on the House of Commons website, and they are official minutes of the House of Commons Committee of Standing Health, and they include your remarks and questions and answers.
And so because you haven't seen these, I'd like to give you a minute to refresh your memory of what you might have said. And so I'm going to enlarge this here. Can you read that?
A. Yes.
62 Q. Right. I'm sorry. I can't --
A. It's now too big, actually.
63 Q. It is? Okay. So, fine. So tell me -- tell me when -- how is that?
A. I think -- yes, that's fine.
64 Q. Okay. So it begins here
"Dr. Sharon Koivu, addiction physician as an individual."
Correct?
A. Yes.
65 Q. Okay. So, Dr. Koivu, would you like a minute to just refresh your memory about this testimony that you gave? Or do you recall it?
A. Okay. Everything on the screen I can see.
66 Q. Okay. I'm going to scroll to the next -- can you go to the next page?
A. Yes.
67 Q. Okay. So I've got the top half of the page, and when you are ready, I can move down.
A. [Reading].
68 Q. Okay. Can I scroll down?
A. Yes.
This is not me.
69 Q. No, it's not. So to the bottom of the left-hand column is you. And then I'm going to move up, if I could, Dr. Koivu. You continue your remarks. So what's reported to be your remarks are here up to this point on the right-hand column.
A. [Reading].
Okay.
70 Q. Okay. Have you reviewed your remarks as reported?
A. Yes, I have. And --
71 Q. I'm sorry. And --
A. Yes, I have. I'm moving out, because -- I'm sorry. Okay. Yeah, I believe I have reviewed my remarks.

72 Q. To the best of your recollection, are these minutes -- are these minutes accurate?
A. To the best of my recollection.
73 Q. Okay. And so I want to take you to one statement here that I'm going to highlight. And for the record, it reports you as having said
"I have decided to speak out to bring a voice to the horrific suffering I have witnessed from safe supply."
Do you recall making that statement?
A. Yes.
74 Q. I want to ask you a question about the term that you used here, "speak out." When you used the term "speak out" here, do you do mean speak out directly to parliamentarians about safe supply?
A. In the term I'm using here, yes.
75 Q. Okay. In the term you are using here. Do you mean you use the term "speak out" elsewhere as well?
A. No. I don't believe that that is elsewhere in this document.
76 Q. Okay. And do you believe by speaking out here, do you mean speaking out on the public record about safe supply?
A. Yes. That would be accurate.
77 Q. So Koivu, I'd like to understand how you came to testify before the Standing Committee of Health. Were you issued an invitation --
A. Yes.
78 Q. -- by anyone to testify? Sorry.
A. I believe so, yes.
79 Q. And, Dr. Koivu, I'm sorry. I know you want to answer, and it's we're in a conversation.
A. Sorry.
80 Q. No, it's fine. I actually do it too much myself. But if you can just wait until I'm finished, and if I do the same for you. And if I don t, I'm sorry. But it helps the court reporter get the transcript down. So I will pose the question again.
Were you invited to testify before the Standing Committee on Health?
A. I'm trying to get the -- I mean, I want to make sure I'm answering this accurately. I was -- I requested to speak to the Committee, and then they invited me.
81 Q. I see. So do you remember when you contacted the Committee?
A. It was definitely before -- I think it was last -- oh, gosh. I'd have to look back. I think it was early on -- it feels like, I'm going to say, even December

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of last year that I contacted the Committee.

82 Q. So you contacted the Committee in December of 2023?

A. I think so. I'm not -- to be honest, I'm not sure of that. I'm not sure of the accuracy of that. I know I contacted the Committee at a time when you were able to contact the Committee, and I don't remember exactly when that was.

83 Q. And can you explain why you contacted the Committee to offer to testify?

A. I think my understanding of this committee was that it was going to be reviewing safe supply and that it was -- my understanding was that it was a health committee and that it was going to be reviewing safe supply and it was going to be looking at the risks and benefits of safe supply, and I felt that I had important information to contribute.

84 Q. Okay. Thank you.

So, Dr. Koivu, I'd like to refer you back to your CV, if I could. So I'm going to go back. And there are a number of publications listed, which I will take you to in a moment.

Do you see that on your screen?

A. Yes.

85 Q. Is it too large or too small, or is it okay?

A. That's fine.

86 Q. And so these are academic publications; correct?

A. That is correct.

87 Q. So you haven't listed on your CV any newspaper publications that you have; correct?

A. I don't consider those -- I don t consider those my publications at all.

88 Q. Okay.

A. And they aren t in the sense of basically when you are ta king to the press, they don t -- they print things sometimes limited, sometimes out of context. I wouldn t refer to things in the press as publications, and certainly they are not medical publications.

89 Q. Okay. Well, let me take you to an article in the National Post. And so this is an article that we will mark for identification purposes as Exhibit 2. And it's dated -- do you see at on your screen?

-- EXHIBIT NO. 2 National Post Article, Dr. Sharon Koivu, special to the National Post, dated June 10th, 2024.

THE WITNESS Yes, I do.

BY MR. CHOUDHRY

90 Q. And it says

"Dr. Sharon Koivu, special to the National Post."

Do you see that?

A. Yes.

91 Q. Did you write this article?

A. Let me see what the article is. I have written one op-ed in my life, and I wrote it to the National Post, so I'm assuming that's what this is.

92 Q. Sure. We can take a minute to have you go through it. And so for the record, do you see that it states here that it's published on June 10th, 2024?

A. Yes.

93 Q. And the title of this article is

"Dr. Sharon Koivu 'Safe supply' Has Only Worsened The Addiction Crisis In London Ontario."

Correct?

A. That's what it states. That is not the title I wrote. That is the title that the editor wrote.

94 Q. I see. What was the title that you wrote?

A. I don't remember, to be honest, but that is not the title that I wrote.

95 Q. Okay.

A. As I say, things that go in a paper are edited.

96 Q. Well, let's just look at what has been printed here. And I'd like you to indicate if this is, in fact, what you wrote.

So I think we will give you time to read this again. So I'm starting here on page 2. So tell me when you have finished reading this.

A. [Reading].

Okay.

97 Q. Okay. And this -- I will go to page 3.

A. Okay.

98 Q. And I'm going to scroll down to page 4.

A. [Reading].

Yes.

99 Q. And I'm going to scroll down again. Sorry This begins at the -- this is how this was printed.

A. [Reading].

Okay. We can move on.

100 Q. Sure. This is the next tranche of text.

A. [Reading].

Okay.

101 Q. Okay. And I'm going to continue until we finish. I'm sorry it comes in dribs and drabs like this.

A. [Reading].

Okay.

102 Q. Okay. And then this is where the article

A4730

ends.

A. [Reading].

Yes. Okay.

103 Q. Now, Dr. Koivu, you've now refreshed your memory. These are just kind of comments and garbage that it printed off. So that's the end of the article. Okay?

A. Okay.

104 Q. So, Dr. Koivu, I will now ask you this question again. Do you recognize this article?

A. Yes, I do.

105 Q. Did write the words in this article?

A. Yes, I did.

106 Q. And you stand by what you said in this article?

A. I think there was some editing, but I do stand by this article.

107 Q. Did you approve the publication of this article?

A. Yes.

108 Q. So I want to ask you -- and you didn't object to its publication after the edit?

A. No. I did not.

109 Q. No, you did not; is that correct?

A. I did not object.

110 Q. Okay. So I have two questions I want to

put to you about this article. The first is on page 2. And it's this paragraph that I've highlighted just to aid you a bit. And I want to ask you a question about the last sentence. And it says

"I feel compelled to speak out about the harm safe supply is causing in my community."

Did you write those words?

A. Yes, I did.

111 Q. Can you please -- in this context, by "speaking out" did you mean speaking out publicly?

A. Yes, it does.

112 Q. And was it your hope in writing these words or making a submission to the National Post that your views would be read by members of the public?

A. Yes.

113 Q. I would now like to take you to page 7. And, again, I'd like to take you to just the final paragraph in your op-ed.

And I want to ask you a question about this sentence here. And it states, for the record

"To prevent further harm, a moratorium on funding and expansion of 'safe supply' programs must be put in place."

Did you write those words?

A. Yes.

114 Q. Is it your understanding that the provincial government funds safe supply program?

A. Oh, goodness, no. It's a federally funded program.

115 Q. Federally funded. And so were you advocating that the federal government impose a moratorium on funding and expansion of safe supply programs?

A. Yes.

116 Q. Thank you. Okay. So, Dr. Koivu, with the caveat you've just given that you can be at times misquoted in the press, I'd like to put to you other instances of speaking out, to use your words, just to kind of have you confirm whether, in fact, what you are quoted as having said is accurate or not.

So I'm now going to take you to an article that we will mark for identification purposes as Exhibit 3.

-- EXHIBIT NO. 3 Canadian Affairs Article dated July 8, 2024.

BY MR. CHOUDHRY

117 Q. It's an article that is entitled -- that appears in a publication called Canadian Affairs. And it's an article written by Mr. Liam Hunt, and it is dated

July 8, 2024.

Dr. Koivu, have you read this article before?

A. No.

118 Q. You haven't. Do you recall being interviewed by Mr. Hunt?

A. Yes, I do.

119 Q. Do you happen to recall when you were interviewed by him?

A. I would say likely in June of 2024.

120 Q. Okay. So, Dr. Koivu, because you haven't read this, I'm happy to kind of let you read the article again before I ask you questions about it, if you would like. Would you prefer that I do so? But I have some very specific questions. It's rea ly your choice.

A. I guess --

MS SHORES I think she should be given the opportun ty to read the article, counsel.

BY MR. CHOUDHRY

121 Q. Of course. Absolutely. And that's why I offered.

So, Dr. Koivu, I'm going to begin. We are going to have to scroll through this again. So you can see, this is page 1. So just tell me when you have finished reading the headline and subtitle and then I can

take you through it.

A. Okay.

122 Q. Okay?

A. Yeah.

123 Q. Okay. So I'm just going to go here. And tell me when you finish this screen, and I will continue to scroll down.

A. [Reading].

Yes.

Keep going.

124 Q. Okay.

A. Okay.

125 Q. Okay. I will stop here.

A. [Reading].

Okay.

126 Q. Okay.

A. [Reading].

Okay.

127 Q. Okay. And then you go there.

A. [Reading].

Okay.

128 Q. Okay. And then we will go to the end.

A. [Reading].

Okay.

129 Q. Okay. So, Dr. Koivu, I want to take you to a passage that begins -- two paragraphs, one that's at the bottom of page 4.

A. Yes.

130 Q. And one that runs from page 4 to page 5. So I just want to put those to you and ask you some questions about them.

So the author attributes the following view to you. The author states

"Koivu considers herself a lifelong progressive and has historically supported the New Democratic Party."

Is that a fair characterization of your views?

A. Well, I am going to say yes, historically, I have supported the New Democratic Party and that I have felt that -- I think that is accurate.

131 Q. Did you state that? Do you recall stating that to the author?

A. I'm sure that's a paraphrase, but I grew up -- my dad ran for the NDP in 1974. I knew Tommy Douglas, David Lewis, Ed Broadbent. So yes, I have traditionally been involved in what would be referred to as left-wing and particularly in the NDP.

132 Q. The author states then

"But she is concerned many left leaning politicians have ignored criticism of safer supply."

Did you express that view to the author of this article?

A. Yes. That would be consistent with what I expressed.

133 Q. Then there is a quote that is attributed to you in the next paragraph. The quote begins

"I went to a hearing in Ottawa of a standing committee to talk about addiction,' she said."

Do you recall stating that to the author?

A. I would have said that it was -- that I went to the hearing in Ottawa to discuss safe supply, but, you know, meaning that I might have -- to be honest, that's consistent with what I may have said.

134 Q. And then the author continues to quote you. Quote

"We had five minutes to give a talk and then two hours to answer questions."

And then there's the author's words

"But I didn't receive any questions from the NDP or from the liberals."

Do you recall making that statement to the author?

A. Yes.

135 Q. I'd like to now take you to another newspaper article that attributes quotes to you, and I want to confirm whether they are accurate or not.

So this is an article from the Toronto Sun, for the record. We will mark it for identification purposes as Exhibit 4.

-- EXHIBIT NO. 4 Toronto Sun Article, August 18, 2023.

BY MR. CHOUDHRY

136 Q. And the title here is

"LILLEY Addictions specialist calls on Ford to clean house at SRCHC."

And it's dated -- it states here that it is published on August 18, 2023.

Dr. Koivu, for the record, have you ever read this article?

A. No.

BY MR. CHOUDHRY

137 Q. You have not?

A. No.

138 Q. So, Dr. Koivu, because you haven't, I think it's only fair to let you read it before I ask you questions about t. I'm sorry. This will take time.

So, Dr. Koivu, I'm going to begin -- we will follow the same procedure. I'll put what I can on the screen, let you read it, and when you are done, we will move on to the next set of text.

So this is the beginning of the article. Can you read it? Is that too big or is that fine?

A. That's fine.

139 Q. Okay.

A. [Reading].

Okay.

140 Q. Okay.

A. Keep going.

141 Q. Okay.

A. [Reading].

Okay, okay.

142 Q. Okay.

A. [Reading].

Okay.

143 Q. Okay. Okay. And this is the end. And I will show you the rest of it is just material that turns up on PDFs. So why don't we finish here, and then I will scroll through the rest of this so you can see the rest of the page or the document.

A. Okay.

144 Q. And so then, Dr. Koivu, as far as I can tell, this is just stuff that turned up on the PDF afterwards.

A. Okay.

145 Q. So now, I want to ask you some questions about this article, if I could.

Do you recall -- as I've stated before, the author of this article is a Mr. Brian Lilley.

A. Yes.

146 Q. Do you recall being interviewed by Mr. Lilley?

A. Yes, I do.

147 Q. Do you happen to recall when you were interviewed by Mr. Lilley?

A. In 2023, shortly after the shooting that led to the death of the woman in front of the South Riverdale. So I think August would likely be accurate, August of 2023.

148 Q. Okay. Thank you. So I'd like to take you to a couple of statements that are attributed to you, or views that are attributed to you. The first one is here at the bottom of page 3.

A. Yes.

149 Q. Mr. Lilley attributes the following view to you

"Specifically, Dr. Koivu takes

issue with the Centre's of philosophy published on the SRCHC website."

Did you take issue with the Centre's philosophy on its website in your interview with Mr. Lilley?

A. Yes.

150 Q. I'd now like to take you to a quote that's attributed -- first of all, a quote from the SRCHC. Just for context, it says

"It is a philosophy about being simply respectful of and to people who use drugs. No judgement, no expectations, and no desire for people to stop using drugs."

And then there's a statement -- there's a quote attributed to you immediately after that which says the following, quote

"That is like a cancer doctor refusing to offer a patient chemotherapy because it might be uncomfortable, Dr. Koivu said."

Do you recall making that statement to Mr. Lilley?

A. Yes, I do.

151 Q. And that statement is accurate?

A. This statement is accurate. It's somewhat out of context, but it's accurate.

152 Q. And so I'd like to -- yes, ma'am. Go ahead.

A. Can I -- I mean, the part of the statement that I have a problem with, and I said this, is specifically the no desire for people to stop using drugs. I support no judgement, no expectations -- I support no judgement absolutely, but no expectations and no desire for people to stop using drugs was the part of the philosophy that I took issue with. That is not clear in that statement.

153 Q. Okay. Thank you for that clarification. I'd like to now take you to another quote that is attributed to you. And this is on page 5 of the document. For the record, it says, quote

"With this policy, South Riverdale Community Health Centre is not working to improve lives, Dr. Koivu said."

Let's stop with that. Do you recall making that statement?

A. No, I don't. But it's quoted, so I'm going to say that I made the statement. I don't recall it specifically, but it is a quote here.

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154 Q. Okay.
A. I do recall the next part, which is that they are promoting dependency on a service that should be meant to help them, that no expectation and no desire to stop using drugs, my concern is that they were promoting a dependency on the service and not facilitating patients to access recovery and treatment programming, as is indicated in supervised injection sites.
155 Q. Okay. And so, Dr. Koivu, before making this statement, or since then, have you visited the South Riverdale Community Health Centre?
A. No.
156 Q. No. Have you met with the physicians who are on staff at that centre?
A. No.
157 Q. Have you met with any patients who have -- or any individuals who have -- who are clients of that centre?
A. No.
158 Q. So I'd like to continue then to these quotes that are attributed to you. And these are on page 7. The first quote is
"There has to be a complete change in leadership, Dr. Koivu said."
Do you recall making that statement?
A. I don't recall specifically, but it is quoted, so I'm going to say I made that statement.
159 Q. Okay. And then I would like to take you to the next quote.
"Unfortunately, once people have drunk the Kool-Aid and think this is a good thing, it's hard to have the same workers recognizing the importance and value of facilitating a journey to recovery."
Do you recall making that statement?
A. Yes.
160 Q. And then finally, I would like to take you to -- I would like to just ask you a question. So you've said that you haven't -- you had not visited the SRCHC prior to giving this interview and making these statements; correct?
A. That is correct.
161 Q. And you have and done so since then; correct?
A. No, I haven't.
162 Q. And you haven't made an academic study of the work at the SRCHC, have you?
A. No, I haven't.
163 Q. Okay. So one more media quote here, Dr. Koivu, and then we will get back to your affidavit.

And I should also tell you at some point, if you need to take a health break or get a glass of water or so forth, just -- we are about to be at a natural time where you could if you want to, but it's really up to you. I'm happy to continue as well.
A. You can continue right now.
164 Q. Okay. But let us know if that changes. Okay?
A. Yeah. Thank you.
165 Q. So, Dr. Koivu, this last article is in the London Free Press. And I'm sorry that t's not -- can you read that?
A. Yes, I can.
166 Q. It's an article in the London Free Press that we will mark as Exhibit 5 for the purposes of identification.
-- EXHIBIT NO. 5 London Free Press Article, Harms of safe drug supply programs outweigh benefits Addiction specialist.
BY MR. CHOUDHRY
167 Q. The title is
"Harms of safe drug supply programs outweigh benefits Addictions specialist."
And then it states
"A London doctor at the centre of a national political debate over opioid program said she had no intention of becoming a talking point for the federal Conservative party."
The author of this article is a Mr -- pardon me -- is Randy Richmond. Do you recall being interviewed for this article?
A. Yes, I do.
168 Q. Have you read this article before?
A. No, I haven't.
169 Q. Okay. So we are going to follow the same procedure.
I'd like to take you through the article so you can read it before I ask you some questions about it. So can you confirm that you have read this page?
A. Yes, I have.
170 Q. Okay. I'm going to scroll down now. Okay. And I'm very sorry about the way that this has come formatted. Can you read that? The article begins here.
A. Yes.
171 Q. Okay. Can you read that?
A. Yes.
172 Q. So let's -- tell me when you've finished this screen, and I will continue to scroll down.
A. [Reading].

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Yes. Okay.

173 Q. Okay.

A. [Reading].

Okay.

174 Q. Okay.

A. Okay. Okay.

175 Q. Okay. So I have a couple of questions about the sentence that I have side-barred here in the final page of this article. The first sentence states

"Meanwhile, Koivu is cal ing for a moratorium on funding until there's more public discussion of the programs."

That's a statement or a view that's attributed to you. Do you recall making a statement like that to the journalist?

A. Yes, I did state that there should be a moratorium on funding safer supply -- or safe supply programs.

176 Q. The next sentence -- and I believe this is a typo. It says "Koivus," but it should be "Koivu." But it states

"Koivus [sic] said she approached local NDP and Liberal MPs, who consider her opinions, but can't get her message beyond them to party leaders."

Did you tell the journalist that you had approached local NDP and liberal MPs?

A. Well, actually it's -- the NDP is an MPP.

177 Q. Oh, I see.

A. NDP is liberal. So in the writing -- in the same writing that I did speak to the l beral MP and the NDP MPP. And had I spoken to an NDP MP, it was specifically in the writing of London.

178 Q. So you approached the local NDP MPP and the local MP?

A. Yes. That is correct.

179 Q. And you approached them?

A. Yes.

180 Q. And then it says here

"But can t get her message beyond them to party leaders."

Did you ask want -- did you ask them to convey your message to party leaders?

A. I would say, yes. Certainly with speaking with the l beral MP, I felt that it was very important for the federal government to understand concerns that were happening in London. So yes, he had been initially very engaged.

And I have known both of those men for quite a while and have had a very good relationship with both of them and spoke to both of them about this. And yes, I was hoping that they would speak beyond the local level.

181 Q. Okay. Thank you. So, Dr. Koivu, I'd like to go back to your affidavit. And I'm on Exhibit A. Again, these are your publications. Do you recognize this publication list?

A. Yes, I do.

182 Q. And so there I see here 11 publications. Is that list up-to-date?

A. I believe there are more. I think I have about 14 publications, but -- I believe there are about 14 publications at this time.

183 Q. And those additional publications would be on the CV that we will be getting from you soon?

A. Sure.

184 Q. Sure.

A. I will put them on.

185 Q. Okay. And so, Dr. Koivu, I looked at the list of publications, and it seems -- I want to put to you that these publications are principally about drug use, about addiction and so forth. If you'd like, I can put specific article titles to you.

A. Is that a question? I'm not sure.

186 Q. No. I'm trying to characterize the body of your research. I count here one -- so Article 1, then Article 4, Article 5, Article 6, Article 7, and then Articles 8, 9 -- 8 and 9, and then Article 11 as all being about the health effects of injecting drugs; is that fair?

A. That would be more accurate than I think the first way you put it, so, yes.

187 Q. Okay. And would you say that that is the principal focus of your research?

A. That has been the principal focus of the research that I have been involved in.

188 Q. When you say you "have been involved in," what do you mean by that?

A. That I am involved in all of those studies, so, yes, I have -- research is -- I am a clinician and do research. And the research I have been involved in has -- which has been supported -- that doesn't sound right.

So, yeah. I guess the answer is, yes. The research I have done has been primarily around the complications of injection drug use.

189 Q. Okay. So, Dr. Koivu, I'd like to take you to your affidavit now. Excuse me. I'm going to scroll up. And you are free to have it in front of you, as I have said before.

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So I just want to take you to paragraph 5. And so this paragraph describes your work as an addiction physician?

A. Yes.

190 Q. And just to confirm, it states that you've primarily been providing inpatient addiction medicine consultations; correct?

A. Yes, correct.

191 Q. And then it says here

"The patients that I see are admitted to hospital and have a substance use disorder."

Do you see that sentence?

A. Yes, I do.

192 Q. Okay. And so are you able to estimate how many patients you have seen as an inpatient addiction consultant between St. Elgin General Hospital and London Health Sciences Centre?

A. You mean altogether?

193 Q. Could you estimate over the course of -- yes.

A. It's a hard question if you're looking at number of consults versus number of patients, because some patients come in -- okay.

194 Q. Could you give both figures, perhaps? This is not a trick question. I'm just trying to understand what the scale is of the patient population you have seen.

A. Thousands of patients.

195 Q. And just so I understand the logistics of how this works, because you are an inpatient addiction consultant, is it correct to say that patients are admitted to hospital by a different service, so by general --

A. Yes.

196 Q. Sorry. Go ahead.

A. Sorry. Yes.

197 Q. So, for example, they could be admitted by general surgery?

A. Yes.

198 Q. Or they could be admitted by psychiatry?

A. Yes.

199 Q. And then they are referred to the addiction consultant team?

A. Well, originally referred to me, and then when we got a team, they were referred to a team.

200 Q. Okay. So they would be referred to you, or when you had colleagues, to you or your colleagues on the addiction consultant team; correct?

A. Yes.

201 Q. And your role, your treatment mandate is to treat those patients for their addiction issues?

A. My treatment mandate includes meeting the patients where they are, helping to keep them out of withdrawal, helping to support them in hospital so that they can stay in hospital for the treatment that is required, and to help facilitate addiction treatment and addiction recovery --

202 Q. Sorry. Go ahead.

A. I help facilitate addiction treatment and recovery, therapy or I see people with multiple types of addiction. So depending on the type of addiction, it is about trying to help, meeting the patients where they are, helping them to be able to stay in hospital, and helping them to facilitate treatment, helping to coordinate with community organizations and agencies and helping to facilitate their journey into recovery if possible.

203 Q. Okay. But you don't treat them for their other medical issues?

A. Generally not.

204 Q. So you don't treat them for their -- and you are not a psychiatrist, are you?

A. No, I am not.

205 Q. Okay. And so -- and because you see these patients on an inpatient basis, you don t follow up with them in the community on an outpatient basis, do you?

A. No, I do not.

206 Q. Okay. And so in your role as an inpatient addiction specialist, what percentage of your patients would you estimate are unhoused or homeless?

A. That has increased over time. Initially I would say that the number was fairly small. I would say that that number has risen to close to 40 per cent.

207 Q. Okay.

A. In London, before I left London.

208 Q. I see.

A. In St. Thomas, it would be a different number.

209 Q. What would the number be?

A. In St. Thomas it is a smaller number. I would say most of the patients I see in St. Thomas are housed.

210 Q. And when you see homeless patients, you see them in the hospital; correct?

A. Yes, that is correct.

211 Q. So you don't attend on them in she ters; correct?

A. I do not attend on them medically in shelters, no.

212 Q. No. And you don't attend on them medically in encampments, do you?

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A. No. I don't.
213 Q. Okay. So, Dr. Koivu, there's a term that is sometimes used in the medical literature and also in this policy area called "living rough." Are you familiar with that term?
A. Yes, I am.
214 Q. So I'm going to put to you -- what do you understand that term to mean?
A. I think it has various meanings. So your meeting would be helpful, but living rough tends to mean living outside of a shelter.
So living rough can include living -- being homeless and living outside of a shelter system, outside of -- that would not include couch surfing or that sort of thing. It would be about living either -- it can refer to living in encampments, tents. It can refer to living outside, without the aid of tents or encampments.
Sometimes people will use it specifically to mean outside of even encampments. So how it is used can be variable.
215 Q. So, Dr. Koivu, that's very helpful. And I'm glad we are clarifying this.
So in this cross-examination, I'm going to use living rough in a narrower sense than you did. And so I will draw a distinction in some of my questions between

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living in an encampment and living outside but not in an encampment, so specifically not living in a tent.
Is that clear?
A. Okay. If that's how you will use the term living rough to mean living on the street or living outside of a tent or an encampment --
216 Q. Yes.
A. -- which are both different, but okay.
217 Q. That's correct. Just to be clear. Okay. And so I want to take you to paragraph 10. And you state here
"Many the patients that I see[...]"
I assume you meant "many of."
"So many of the patients that I see are vulnerably housed or experiencing homelessness. I have seen patients who are living in homeless shelters in tent encampments and in both environments."
Correct?
A. Yes.
218 Q. Okay. What proportion of your addiction practice is devoted to shelter residents?
A. So of the homeless patients that I see -- and so the question is, how many are in shelters? So

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40 per cent. That also has defin tely changed over time. Initially most of the homeless patients I saw would have been living in shelters.
That has changed. I'm going to say it's about -- 50 per cent are living in shelters, and 50 per cent are living mostly in encampments.
I do not have a population of patients that I see that I would say are specifically living rough --
219 Q. Okay.
A. -- as you have defined it.
220 Q. Thank you. That's helpful. I want to take you to paragraph 15. And it's about the scope of your expert opinion. And so it says here
"I have been asked to provide my opinion from the perspective of my area of expertise w th respect to health outcomes for people experiencing homelessness who live in encampments, as compared to in shelters."
Can you confirm that that is what you were asked --
A. Yes.
221 Q. -- to provide?
A. Yes.

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222 Q. Okay. And so you have not been asked to provide your opinion on the health outcomes for people experiencing homeless -- or comparing the health outcomes of people experiencing homelessness living rough compared to those living in encampments or living in shelters?
A. No. Not as you have defined it, no.
223 Q. Okay. I'd now like to take you to paragraph 18. And so here I'm going to highlight the first sentence. It states-- pardon me. Sorry, the first two or three sentence I have highlighted. I'd like to ask you about the third sentence.
A. [Reading].
Yes.
224 Q. Okay. And so I'd like to ask you about the -- so the third sentence states for the record
"Unsheltered people experiencing homelessness have a 2.7-fold increased risk of mortality compared to those who are sheltered."
Correct?
A. Yes.
225 Q. And you cite to that -- for that reference for that proposition footnote 15; correct?
A. Yes. That is the Boston study.
226 Q. That's the Boston study. Okay. So I'm

going to take you to the Boston study. And so if you will give me a second. And I'm going to put it up here.

We will mark this as Exhibit 6 to the cross-examination.

-- EXHIBIT NO. 6 Boston Study.

BY MR. CHOUDHRY

227 Q. Can you read that for identification? Do you recognize this paper?

A. Yes. Yes, absolutely I recognize the paper.

228 Q. And so this is a paper that was published in JAMA Internal Medicine. The title is

"Mortality among unsheltered homeless adults in Boston, Massachusetts 2000-2009."

You referred to this as the Boston study. Is this the Boston study?

A. Yes. This is the study that I am referring to that I am calling the Boston study, yes.

229 Q. Okay. And so I'd like to take you to a couple -- did you review this article before reading -- before preparing your affidavit?

A. Yes, I did.

230 Q. Do you remember when?

A. I've -- I mean, I've read it previously. I

also read it more recently when I was doing my affidavit. So I'm going to say around the -- as I was doing my affidavit, this was one of the articles that I read.

231 Q. Okay. So I would like to take you to two parts of the study. So scrolling down here. So the first is -- so this is page 2 of the article. And I will just reduce it a bit so it is all on one screen.

Do you see that?

A. Yeah, but --

232 Q. It's too small? I can --

A. I can read it, but I'm --

233 Q. No, no.

A. -- going to be staring closely. It's --

234 Q. That's not the intention. So let me increase the size. Is that better?

A. Yes.

235 Q. All right.

A. Now I can only see one part, though.

236 Q. That's what I was trying to avoid, but let's do it this way.

A. Can you scroll it up a little bit?

237 Q. Of course.

A. If you scroll the other way.

238 Q. Scroll down?

A. I guess down, yes.

239 Q. Yeah.

A. I might be -- now I can't quite get --

240 Q. Can you see the bottom, Dr. Koivu?

A. I'm missing the top. I'm not quite able to see the whole thing.

241 Q. Okay. I know. Unfortunately, I can't do that and have you make it readable. So --

A. No, you can go smaller. I can st ll read it. You can go smaller than that and I should be able to still read it.

242 Q. Okay. Tell me when to stop.

A. Okay. Yes. I can read both parts. I can read both parts.

243 Q. Okay. Dr. Koivu, I'd like to take you to the method section of the article.

A. Yes.

244 Q. It starts here.

A. Yes.

245 Q. Do you see that?

A. Yes.

246 Q. And I'd like to take you to the study population --

A. Yes.

247 Q. -- paragraph. Can you just refresh your recollection by reviewing that paragraph?

A. Okay.

248 Q. It begins at the bottom of the left column and it goes up to the right column.

A. Yes.

[Reading].

Okay. Yes.

249 Q. Okay. And so would you agree that the authors of the article did not break down the unsheltered homeless population --

A. Absolutely.

250 Q. -- to those living rough and living in encampments?

A. Absolutely. That is one of the, for lack of the better word, weaknesses of this article is that they didn't break it down. Absolutely.

I completely agree with you that a problem with this article, with this study is that they did not break down what you would describe as living rough versus encampment.

So this is not -- you are right. Absolutely.

251 Q. Okay.

A. That is a flaw of this study or a limitation, I guess, is the right word that I'm looking for, in the study.

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252 Q. Well, on the topic of limitations, I want to take you to the limitation section of the study. And so I'm scrolling down. And so this begins on page 5 of the PDF with the title "Limitations."

Do you see that?

A. Yes.

253 Q. I want to take you to a passage on the limitation section on the next page. May I do that, or would you like to read this first?

A. No, that's fine. You can take me to the passage.

254 Q. Okay. Great. And so I want to take you to this sentence here. Additional limitations. And it reads, for the record

"Additional limitations included a lack of information about individual comorbidities or the chronicity of being homeless before and during the observation period. Both could have contributed to a more nuanced understanding of mortality risk in this population."

Do you see that?

A. Yes, absolutely.

255 Q. Okay. And so I want to put this into plain English, if I could. So let me suggest something to you. And please let me know if this is accurate.

Are the authors stating here that they did not control for the comorbidities of the two homeless populations, those who are living in shelters and those living outside shelters?

A. I don't think this was a study where you control that in the sense that it's not a randomized controlled study. So I'm not sure "control" is the word, but I don't think they factored in or had the ability to know what the comorbidities and even the chronicity.

So I would say it's more things that could be -- contribute to living in a shelter or not living in a shelter, those sorts of comorbidities were not taken into consideration during this study.

256 Q. That's very helpful, Dr. Koivu. Let me kind of, again, in layman's terms, layperson's terms, put that point to you and see whether it's fair.

Is it fair to say that the authors did not observe chronicities or comorbidities and therefore could not factor those into their analysis of health outcomes?

A. Well, I wouldn't say they didn't observe them. They just didn't observe them before the observational period so that they couldn't say how they contributed to them.

So how this words is that they weren't able to say or they didn't observe prior, so specifically before -- you know, before or during, so they weren't observing them.

So I'm not -- so I think I'm agreeing, but not exactly. I think it is a wording thing. But, yes. They weren't -- the comorbidities and the chronicity of the illnesses weren t part of what they were looking at in the study and could be contributing factors that they did not take into consideration.

So I think we are saying the same thing. I just --

257 Q. Well, Dr. Koivu, just on that last point, did the authors not state that they didn t observe those either before or during?

A. Yes. It says before or during their observational period. Yes. So, yes, that's correct.

258 Q. So they didn t observe the comorbidities or chronicity during the observation period?

A. No, that is correct.

259 Q. So they had no information about them?

A. Yes, that is correct.

260 Q. And so they couldn t draw any conclusions about the role or lack of role of those chronicities or comorbidities on the outcome they observed; correct?

A. Yes, that is correct.

261 Q. Okay. Thank you.

I will take you back to your affidavit.

A. I think what is relevant in this study is those are the limitations. What is relevant in the study -- and I think -- you bring up a very good point, and I think you're going to be able to make that point with any study that we are extrapolating data and how we have that data interpreted. And there's going to be, I'm sure, more opportunities for you to do that.

I think what is also the strength of this study is that all of the people in the study had access to the same services.

So this is an American study. The types of services that they had access to are going to be maybe not similar to services in Canada, per se, but I think what was relevant about this study Is that they had access to the same services and yet found that 2.7-fold difference in mortality.

So there are limitations, I absolutely agree with you, there are limitations to the study. And you've pointed out limitations to the study. But I think the thing that for me is the strength of the study that makes it worth noting is that the people in the study were given access to the same services.

A4739

A3627

So it's not a matter of not having access. It is not a matter of people who were in a shelter had access to certain services that the other population didn't.

And I think that is what makes this study a valuable study. You are absolutely correct about the limitations of this study.

262 Q. And just to pick up on the point that you raised, this is an American study?

A. Yes, absolutely. And I think that that is a really important point, because American healthcare is different from Canadian healthcare.

And the -- so you are absolutely correct that being able to completely extrapolate what happens in Canada versus the States in many aspects are going to be different.

I think what makes this study, as I say, the most important part of the study is that people had access to the same services, regardless of whether they were sheltered or unsheltered. And I think that is the part that's important. Those services may be somewhat different, but that is the part that is most important.

263 Q. And just to go back to your affidavit, this is the only study you cite for this statement.

A. Yes. It's actually in another paper, but when I went back to that paper, I think it's the number 5, Liu paper, they are actually -- they use the same statement about mortality, the 2.7. I even think I saw that in some of the affidavits.

But when you look at the references, they are referring to that study, the same study. So I've seen it in other articles. The one -- I think it's number 5, that is from Liu is the author, I believe.

But if you actually read beyond their statement of the 2.7, they are getting it from the same study.

264 Q. Are you aware of any Canadian data?

A. No. No, I'm not aware of any. I think -- unfortunately, I'm not aware of -- I'm aware of the Canadian study that looks at -- is the one from Vancouver -- sorry, British Columbia, the Nikoo study that looked at comparing sheltered to unsheltered, but that was specifically about chronic illnesses. It is not about mortality.

265 Q. I see. Okay.

A. I do not know of a study -- I would love to see one -- I do not know of a study that is specific to Canada. So that -- that is referencing the Boston study. And any other references that I saw do go back and circle back and they are referencing the same study.

266 Q. Okay. Good. And so thank you, Dr. Koivu. I'd like to now take you to paragraph 20 of your affidavit, which I have put up on the screen.

A. Yes.

267 Q. Just to refresh your memory.

A. Sorry. I'm looking at the wrong paragraph.

268 Q. That's okay. Can you see it here, paragraph 20? It begins here.

A. Yes.

269 Q. Okay. And so this paragraph, it's fair to say, is about the risk of frostbite?

A. Yes.

270 Q. That you -- and it's your evidence that there are significant risk of frostbite to persons living in encampments; correct?

A. Yes.

271 Q. But, of course, you are aware that shelters don't provide 24/7 accommodation, are you?

MS SHORES Well, hang on, counsel. I don't know that that's been established.

BY MR. CHOUDHRY

272 Q. Well, Dr. Koivu, what's your understanding of the shelter accommodation?

MS SHORES She is not being presented as an expert on the shelter accommodation. There's a way you can propose that to the witness that is both fair and proper and doesn't require her to speculate on shelter policies.

BY MR. CHOUDHRY

273 Q. Well, Dr. Koivu, I would put it to you that shelters do not operate -- they do not offer shelter 24 hours a day?

MS SHORES That's a refusal, counsel. Again, you can put that proposition to her without asking her to comment on shelter policies.

---REFUSAL

BY MR. CHOUDHRY

274 Q. Well, Dr. Koivu, if an individual -- do you want to say something, Dr. Koivu?

A. I'm waiting for the question.

275 Q. So, Dr. Koivu, if an individual were outside during the day, would they not also experience the risk of frostbite?

A. Yes. The risk of frostbite, however, is increased with the amount of exposure, the length of exposure, the ability to also access a warm building, for example. People who are outside during the day could also go to a library during the day that isn't available at night.

So, yes, the longer you are outside, the

more likely you are to have problems such as frostbite. It also is worsened in environments in which the cold is sort of maintained.

So -- and you could -- well, I guess in answer to your question, if you are outside at any time of the day for a long period of time, particularly if during that period of time you are not conscious, such as being asleep or taking a sedating medication, you are at risk of getting frostbite at any time of the day.

Frostbite is not limited to nighttime. However, the temperatures tend to be different at different times of the day, as well as accessing warm structures is different at different times of the day.

276 Q. And, Dr. Koivu, to be clear, you haven't provided any evidence about access to warm structures during the day, have you?

A. No, I haven't, and that's not my intent. I'm just pointing out that when you're -- to the question that you asked about daytime, I don't know the policy of shelters. And I would say that access -- accessing a warm environment decreases your risk of getting frostbite, and not accessing a warm environment increases your risk of getting frostbite, regardless of the time of the day.

277 Q. And, Dr. Koivu, would you agree that being in a tent reduces the risk of frostbite relative to living in the rough?

A. No. I have absolutely no data to support that. If anything, if you are living in a tent, especially a small, domed tent, then your own body heat is going to be creating condensation on the tent, which can actually increase moisture in the tent, which can be a problem that can increase the risk of things, particularly trench foot.

But the amount of protection in a tent -- at least the tents that I've -- tents are not designed to be able to withstand temperatures to make a significant difference once we are talking about freezing temperatures.

278 Q. Have you -- can you cite a study for what you've just said?

A. What I can say is I know of no study that shows that tents are safer, that provide safety outside. And having been someone who's done an extensive amount of camping, which does not make me an expert on tents, I am well aware of the limitations of a tent and do not know of any study that would support what you have stated, which is that a tent will offer an advantage over not being in a tent once you are reaching the types of temperatures in which frostbite can occur.

279 Q. Oh, interesting.

A. I am not a tent expert.

280 Q. Thank you for clar fying that.

Counsel -- sorry. Dr. Koivu, I'd like to take you to paragraph 27, which is about trench foot. Do you see it?

A. Yes, absolutely.

281 Q. All right. And so you don't refer specifically here to the risk of contracting trench foot inside or outside a tent, do you?

A. No.

282 Q. No?

A. No.

283 Q. Okay. All right.

A. But my topic was specific to people who were in tents. So I was not making a comparison to people who were not in tents.

As I have mentioned, the risk of being in a tent, particularly because of how tents work where you get condensation from body heat that's going to be affecting -- essentially hitting the side of the tent and creating moisture within a tent -- sleeping bags, for example, can become quite moist just from body heat.

That's fairly standard. So absolutely the risks of developing trench foot within a moist environment -- and tents can be a very moists environment -- are what I was referencing.

284 Q. Dr. Koivu, you've referred more than once to condensation and body heat --

A. Yes.

285 Q. -- from iving in tents. Is that anywhere in your evidence?

A. No. But my specific topic was about being in a tent and not comparing it to outside of a tent.

So, no, this is in answer to your questions.

286 Q. And is it a topic of your research expertise?

A. No, it is not, and I am not a tent expert. This is from my experience of being in a tent and from my understanding of condensation and how condensation works.

287 Q. Sure. And, Dr. Koivu, just to be clear, you're here to provide expert evidence based on your professional experience and research capabilities, not in your personal experience living in a tent. Can we clarify that?

A. Absolutely.

MS SHORES Well, counsel, I'm going to interject, because she's here for a cross-examination on the expert evidence that she has given in her affidavit.

And as the witness just said in her

previous answer, she's answering the question that you posed to her.

MR. CHOUDHRY Well, actually she has answered the question by reference to knowledge that she shouldn't be relying on to answer.

It's presupposing that any question put to an expert witness that they should only answer based on their expert -- on their expertise, not their personal experience, counsel.

BY MR. CHOUDHRY

288 Q. So, Dr. Koivu, going forward, let's stick to your expertise, if we could.

MS SHORES Well, counsel, she'll answer the questions as best she can. And if there are disputes over what's within her expertise, those can be dealt with in due course.

I think she explained what the limitations of her expertise were in answering your question. And if you're going to put a question to her, then you should expect that she's going to give an answer to t.

BY MR. CHOUDHRY

289 Q. And so, Dr. Koivu, just for the record, you're not an expert on tents?

A. No, I'm not an expert on tents.

MS SHORES She has said that several times now, counsel.

BY MR. CHOUDHRY

290 Q. Good. And I'm glad we've got it on the record again.

So, Dr. Koivu, I'm going to take you now to paragraph 58. You state here

"Most patients reported an increase in drug use in encampments."

Do you see that statement?

A. Yes, I do.

291 Q. You don t cite any research to support that statement, do you?

A. No. This is specifically patients have reported to me.

292 Q. Okay.

A. And so this is --

293 Q. I see.

A. -- my experience, absolutely. This is not something that I can say that has been well studied.

294 Q. And how many patients are "most patients"?

A. I am going to say every patient that we had the discussion w th about their use within encampments stated that they had an increase in drug use in the encampments.

So of the people that were in encampments,

that conversation probably happened at least 75 per cent of the time.

295 Q. But you don t provide any evidence about the rates of drug use in shelters, do you?

A. No.

296 Q. Okay. I'd like to take you to paragraph 49. Do you see that paragraph? It's about sexual violence, sexual exploitation, and sexual traffic.

A. Yes.

297 Q. Dr. Koivu, I want to -- you cite -- the only source you cite in this paragraph are the notes that are marked as notes of 52, 53, and 54; is that correct?

A. Yes, that is correct.

298 Q. Okay. I want to take you to those sources first, if I could. So I'm going to stop this screen share.

And, Dr. Koivu, at this time, if you would like to take a break, this would be an opportune moment, or if you would like to continue, we can do so as well.

A. Okay.

--- RECESSED AT 11 27 a.m.

---RESUMING AT 11 38 a.m.

BY MR. CHOUDHRY

299 Q. We are back on the record, Dr. Koivu.

So, Dr. Koivu, I want to take you back to paragraph 49 of your affidavit. I won't put it back up on the screen just now unless you would like me to.

When we last broke, or when we broke before the break, I was asking you about the three references you cited in footnotes 52, 53, and 54; correct?

A. Yes.

300 Q. I would like to take you to those references, f I may.

A. Sure. Yes.

301 Q. Okay. So I'm going to share with you a different -- a browser. And I have bookmarked these pages. So if you will bear with me, I will pull them up.

So, Dr. Koivu, this is -- at footnote 52 of your affidavit you provided a hyper ink.

A. Right.

302 Q. And the hyperlink takes us to this article?

A. Yes.

303 Q. Do you recognize this article?

A. Yes, I do.

304 Q. Okay. And so this is an article in the Waterloo Region Record; correct?

A. Yes, it is.

305 Q. And it's dated December 12, 2022?

A. Yes.

306 Q. And this is a story about the risk of

grooming for sex trafficking in Waterloo; correct?

A. Yes.

307 Q. And do you have any first-hand knowledge of the risk for sex trafficking in Waterloo discussed in this article?

A. Not spec fically about Waterloo, no.

308 Q. And is your only knowledge of the risk of sex trafficking in Waterloo from this article?

A. Yes.

309 Q. Okay. Dr. Koivu, I'd like to now take you to the reference cited in footnote 53. This is an article that is from Edmonton City News. Do you see this?

A. Yes.

310 Q. Is this the article -- is this the web story, pardon me, that --

A. Yes.

311 Q. -- you cited in footnote 53?

A. Yes.

312 Q. And so is this story about a sexual assault of a minor in an encampment in Edmonton?

A. Yes, it is.

313 Q. Do you have any first-hand knowledge of the sexual assault discussed in this article?

A. No. I do not.

314 Q. So your only knowledge of this sexual assault is from this story?

A. That is correct.

315 Q. Okay. Dr. Koivu, I'd like to take you now to the reference of footnote 54.

Dr. Koivu, do you see this article?

A. Yes, I do.

316 Q. It's in the Toronto Sun. It's dated October 1st, 2020, this title is

"Levy It took court action for Toronto to admit tent cities are problematic."

Do you see that?

A. Yes, I do.

317 Q. Is this the article you cited footnote 54?

A. I don't -- t could be. I am --

318 Q. Should I put --

A. I will go with yes. I know I cited this article. So I'm assuming that it was number 54.

319 Q. Okay. And Dr. Koivu, just to be clear, I just took these links from your affidavit.

A. Yeah. Yeah. And I'm sure then that it is the right number in the right place. I have definitely had this as a link.

320 Q. Okay. And so you remember reading this article, do you?

A. Yes, I do.

321 Q. And so this article, you would agree, is about human trafficking in an encampment in Toronto?

A. That is correct.

322 Q. And you don't have any firsthand knowledge about the human trafficking discussed in this article, do you?

A. No.

323 Q. Your knowledge about human trafficking discussed in this article is from this new story?

A. Yes, that is correct.

324 Q. Dr. Koivu, I'd like to take -- I'd like to stop this screen share for a moment. And I'm going to take you back to your affidavit for a minute, if I may.

Do you see that?

A. Yes.

325 Q. Okay. I'd like to -- I'm going to take you back -- I'm going to take you up in your paragraph -- pardon me -- up in your affidav t to paragraph 23.

And I'd like to take you to the last sentence in paragraph 23. Do you see it?

A. Yes.

326 Q. So you state there

"I'm aware of several people dying in tent fires."

And then you provide three footnoted references, 26, 27, and 28; correct?

A. Yes.

327 Q. Okay. So, Dr. Koivu, I'd like to take you to the -- those references are in your affidavit, if I could scroll down. Excuse me. Just give me one second here. Are in Exhibit C and 26, 27, 28 are listed here.

Do you see those?

A. I think 27. I have the wrong link. If I remember right --

328 Q. Oh.

A. -- there are a couple places where I have the wrong link, and that is -- yeah, that's one of them, because if you look at 26 and 27, they are the same. They are actua ly the same article.

So unfortunately, I had the wrong link for that. So 27 is the same as 26. There is no extra link there. That was the wrong link that I added.

329 Q. Sure. So we will take the links as they are, because this is in your affidavit. So the link for 27 is incorrect; is that correct?

A. Yes, you are correct. The link for 27 is incorrect.

330 Q. So I'd like to take you to the link for the articles that are listed correctly on your evidence in

footnotes 26 and 28, if I may. Okay. So I will just go back to the browser.

Dr. Koivu, is this the article you cited correctly in footnote 26?

A. Yes.

331 Q. It's a CBC article from London; correct?

A. Yes.

332 Q. And it says here it's dated April 16, 2024?

A. April 15th, but yes.

333 Q. Pardon me.

A. Sorry. The article is April 16th. The woman died on April 15th.

334 Q. Right. And so actually, Dr. Koivu, does the article not say that the death occurred on April 15, 2023?

A. Yes, that is correct.

335 Q. Okay. And so --

A. This is referencing the memorial that they had for this woman.

336 Q. I see. I see. And so were you an eyewitness to this fire?

A. No. I was not an eyewitness to this fire.

337 Q. Did you treat the deceased?

A. No.

338 Q. And did you know the deceased?

A. No, I did not know the deceased. I knew people who knew her, but I did not know her.

339 Q. Okay. And so your only knowledge about this death is from this online news story?

A. No, that is not correct. I also knew people who knew her.

340 Q. But your only direct knowledge of this death is from this online -- you have no direct knowledge of this death. You've learned about her death from other individuals or from this new story?

A. I do not have direct knowledge of the death. I have learned about it from other individuals in London, as well as from the new story. I already knew about the death before the news story, but I did not know her. I did not witness it, nor see it individually.

341 Q. Thank you.

And so now I would like to take you to another -- to the link that I believe is cited in footnote 28. Do you recognize this story?

A. Yes.

342 Q. And this is the story you cited in footnote 28; correct?

A. Yes.

343 Q. And so this is a Toronto Star story on a tent fire death in Toronto; correct?

A. Yes.

344 Q. Were you an eyewitness to the fire?

A. No.

345 Q. Did you treat the deceased?

A. No.

346 Q. Is your only knowledge about this event from the news story?

A. Yes.

347 Q. Thank you.

I'd like to now go back to your affidavit and take you back -- take you to paragraph 25. Do you see that?

A. Yes.

348 Q. And your evidence there is -- or you state

"I am aware of risks from propane tanks used to heat tents, including explosion causing injury and death and carbon monoxide poisoning."

And you cite, again, to a footnote, footnote 29; correct?

A. Yes.

349 Q. Okay. I'd like to take you to Exhibit C where you list footnote 29. And, Dr. Koivu, is it true that this source here is a CBC news article; correct?

A. Yes.

350 Q. Okay. And so I'm going to take you to that article. Dr. Koivu, can you read that article?

A. Yes.

351 Q. Let me increase the size. Is that easier?

A. Yes.

352 Q. And so, Dr. Koivu, is this the article that you cited in footnote 29?

A. Yes.

353 Q. And this is a CBC story on the propane explosion?

A. Yes.

354 Q. Were you an eyewitness to the explosion?

A. No. I was not.

355 Q. Did you treat the injured?

A. It is possible that I treated people who were injured from this explosion, but I do not know that specifically. I have certainly treated people with burns, that have been admitted to the hospital with burns. I cannot say specifically to this article.

356 Q. So you can't confirm that you treated individuals that were injured in this incident referenced in this article?

A. That is correct.

357 Q. Okay. Dr. Koivu, I'd like to take you back to your affidavit. And I'm going to take you to

paragraph 70.

And so do you see that paragraph?

A. Yes.

358 Q. Okay. So I want to take you to these two -- this -- these two sentences. You stated that

"I have not provided care for these people and have not had access to any other medical records."

Correct?

A. Yes.

359 Q. And

"I do not feel that I have sufficient information to have a medical opinion."

Correct?

A. True.

360 Q. And so, Dr. Lamont -- sorry. Pardon me. Dr. Koivu, just for the record, and so you would agree that without access to the medical records, you could not provide a medical opinion on Dr. Lamont's care of these patients; correct?

A. That is correct.

361 Q. Okay. Now, you have -- and so Dr. Lamont -- you describe Dr. Lamont's evidence and where she states that one patient -- she referred to one patient as having suicidal ideations; correct?

A. Yes. And there were more than one patient that she stated had suicidal ideations, but in my affidavit I have referenced one.

362 Q. I see. And you no reason to disagree with her diagnosis, do you?

A. No, I do not. I don't know -- well, the same patient that she referenced as having severe suicidal ideations was also seen by Dr. O'Shea, and he did not mention suicidal ideations in his affidavit.

That doesn't -- I can't -- if it was -- the way it was worded by Dr. Lamont made it sound like it was a very significant part of her experience.

It wasn't mentioned by Dr. O'Shea. There is a discrepancy, but I do not have enough information to know where the discrepancy is or exactly what that discrepancy is, but I did note that there was a discrepancy between the two.

363 Q. I see. But you have no reason to doubt that Dr. Lamont diagnosed the patient as having suicidal ideations, do you?

A. Well, she may have -- yes, I will say that I have no reason to doubt that she diagnosed them with suicidal ideations, as she stated that she diagnosed them with suicidal ideations.

364 Q. Dr. Koivu, you refer to the Mental Health Act here.

A. Yes.

365 Q. Are you familiar with the Mental Health Act's requirements for involuntary institutionalized assessment?

A. My -- I believe I am fami iar with it.

366 Q. Have you ever committed a patient for involuntary assessment?

A. Yes.

367 Q. You have. And so you know that the threshold for involuntary assessment is very high?

A. Yes.

368 Q. And so do you know that it's possible -- wouldn't you agree that it's possible that a patient could have suicidal ideations without meeting that threshold?

A. I think it's possible, but once you start using words like "severe," I feel that I would have difficulty knowing why the word "severe" -- because people can have suicidal ideations, but to contemplate suicide, suicidality, and to have severe suicidal ideations would seem to be approaching the threshold.

And it's that relevant to that person's experience that is noted would make it seem like those are very relevant factors in this patient, that this patient's suicidality is very important to the context, but I cannot say -- I cannot say more than that it is concerning that someone with severe suicidal ideations would meet the threshold.

I'm aware that the threshold is -- there is -- definitely the bar for that threshold is high to have involuntary institutionalization.

369 Q. So, Dr. Koivu, I'm not quite understanding. How is what you said not a medical opinion?

A. It's not an opinion about that particular patient, and it's just an observation that Dr. Lamont is stating that people have severe suicidal ideations, but has not felt that they were suicidal enough to feel that they needed to have a voluntary or involuntary assessment.

So I'm just commenting on her reference to severe suicidal ideations and balancing it with the fact that although she has used that word, she also did not feel they were severe enough to require institutionalization and institutionalized assessment.

I and just pointing out that fact. That's not a medical opinion about this case.

370 Q. Well, I guess that will be for the judge to decide.

So, Dr. Koivu, I'm going to take you to paragraph 71. And so, again, I want to note that you

repeated here that you haven't cared for the people she describes in her affidavit; correct?

A. Yes.

371 Q. You don t have access to their medical records; correct?

A. Yes. That is correct, yes.

372 Q. And so, therefore, you don't have sufficient opinion to give a medical opinion; correct?

A. Absolutely. That is correct.

373 Q. But then don't you go on here then -- you state here that

"The cause is not clear but is consistent with tent fire."

Don't you?

A. Yes.

374 Q. So aren t you speculating here about the cause on a burn on the back of that patient?

A. Yeah, absolutely. And that's probably -- I definitely speculated based on what she wrote. That is absolutely speculation on my part.

375 Q. Okay. And so -- but you would have no way of knowing that for sure, would you?

A. No, absolutely not.

376 Q. So, Dr. Koivu, I just want to take you to one last set of questions. And this is about the

City of London where I know you practiced medicine until very recently.

And it's about the City of London's encampment's policies. Are you fam liar with those at all?

A. They have been changing -- they have changed over time, so I'm not sure to what you are -- so I would not state that I know the current -- currently what the encampment policies are.

I do know that currently where I have seen a number of patients that had been in encampments behind the pharmacy that I referenced, they are no longer able to be there, and if they are there, they are removed.

I have seen them as recently as in August, but I also am aware that they are removed. At the time that I wrote this and am referencing that, those encampments were present, but I do know that that has changed with the new guidelines.

MS SHORES Counsel, I'm going to interject before your next question. I've been giving you quite a lot of leeway in this examination, and I will continue to do so, but I do not see the relevance of the City of London's encampment policies. So perhaps you can help me with where you are going.

MR. CHOUDHRY Sure. I'd like to know what

Dr. Koivu -- Dr. Koivu has offered a number of views. Her affidavit is about encampments and the health risks that she -- they pose. And I'd like to ask her for her views about the City of London's encampment policy and whether --

MS SHORES That's completely irrelevant.

MR. CHOUDHRY Well, I disagree, counsel, so I will put the question to the witness, and you can then decide if it's relevant or not.

MS SHORES Very well.

BY MR. CHOUDHRY

377 Q. So, Dr. Koivu, this is a -- I've put on the screen -- we'll mark this as Exhibit 8 for examination purposes.

-- EXHIBIT NO. 8 City of London Community Encampment Response Plan, dated June 25th.

MS SHORES It will only be marked for identification.

MR. CHOUDHRY Yeah.

BY MR. CHOUDHRY

378 Q. It's a statement, and it seems to be a public announcement from the City of London website about a Community Encampment Response Plan, dated June 25th.

Are you familiar with the Community Encampment Response Plan?

A. No.

379 Q. You are not?

A. No.

380 Q. Okay. So you are not aware of any -- so didn't offer any views about this to London City Counc l?

A. No.

381 Q. And you weren't aware of it?

A. No. And I'm not sure that that is current, but --

382 Q. Well, Dr. Koivu, since you raise the question of currency, it says Tuesday, June 25th, 2024. And then it states here

"London City Council has endorsed the Community Encampment Response Plan."

A. Okay.

383 Q. And this is the latest document I could find.

A. Okay. There's lots in the paper that seem to make -- that seem like things are changing and that it's --

MS SHORES I'm going to interject again, because the policies that may or may not be in place in the City of London or how they may or may not be evolving is completely irrelevant to the issues in Hamilton.

030

A3635

A9031

BY MR. CHOUDHRY

384 Q. Okay. And so, Dr. Koivu, just again, just to confirm, this is for Exhibit 9, the Community Encampment Plan, you haven't seen this before, have you?

A. No, I have not.

385 Q. Okay.

MS SHORES Exhibit 9, again, will only be marked for identification. The witness has just said she's never seen this before.

And I'm again going to state that the policies regarding encampments in the City of London are irrelevant.

MR. CHOUDHRY Thank you.

Dr. Koivu, those conclude my questions. Thank you very much for your time.

MS SHORES All right. Off record.

---The Examination concluded at 12 00 p.m.

I hereby certify the foregoing is a full, true, and correct transcription of all of my oral stenographic notes to the best of my ability so taken at the Cross-Examination of DR. SHARON KOIVU, given under oath before me on the 6th of September, 2024.

Amy Armstrong, CVR-RVR

Certified Realtime Verbatim Reporter #7305

Certified Commissioner of Oaths

Certified this 9th of September,2024

A4747

44th PARLIAMENT, 1st SESSION

Standing Committee on Health

EVIDENCE

NUMBER 114

Monday, May 6, 2024

Chair: Mr. Sean Casey

A9033

A4749

Standing Committee on Health

Monday, May 6, 2024

● (1545)

[*English*]

The Chair (Mr. Sean Casey (Charlottetown, Lib.)): Welcome to meeting number 114 of the House of Commons Standing Committee on Health.

Before we begin, I would like to remind all members and other meeting participants in the room of the following important preventative measures.

To prevent disruptive and potentially harmful audio feedback incidents that cause injuries, all in-person participants are reminded to keep their earpieces away from all microphones at all times. As indicated in the communiqué from the Speaker to all members on Monday, April 29, the following measures have been taken to prevent audio feedback incidents.

All earpieces have been replaced by a model that greatly reduces the probability of audio feedback. The new earpieces are black in colour, whereas the former earpieces were grey. Please use only an approved black earpiece. By default, all unused earpieces will be unplugged at the start of the meeting. When you are not using your earpiece, please place it face down on the middle of the sticker for this purpose, which you will find on the table, as indicated. Please consult the cards on the table for guidelines to prevent audio feedback incidents.

Also, the room layout has been adjusted to increase the distance between microphones and reduce any chance of feedback from an ambient earpiece.

These measures are in place so that we can conduct our business without any interruptions and to protect the health and safety of all participants, including the interpreters. Thank you for your co-operation.

In accordance with our routine motion, I'm informing the committee that all remote participants have completed the required connection tests in advance of the meeting.

I would like to welcome our panel of witnesses.

We have with us here in the room Dr. Sharon Koivu, addiction physician. Online is Dr. Bernadette Pauly, scientist with the Canadian Institute for Substance Use Research and professor at the School of Nursing, University of Victoria. By video conference, representing the Thunderbird Partnership Foundation, we have Dr. Carol Hopkins, chief executive officer. Finally, also by video conference, representing the Vuntut Gwitchin First Nation, is Chief Pauline Frost.

To all of our witnesses, thank you for being with us.

Parliament Hill is a place where rumours are a constant. I heard a rumour today that there's going to be a vote in roughly 45 minutes. If that happens, the meeting is likely to be interrupted, and we will be asking you to stay a little later than you might have anticipated. If you are able to stay with us to ensure that everyone gets a chance to fully converse on these matters, it will probably result in your time with us being extended from 5:30 until 6 o'clock or a little later. I'll give you a heads-up for that.

We can now go ahead with our opening statements, beginning with Dr. Koivu.

You have the floor for the next five minutes. Welcome to the committee.

Dr. Sharon Koivu (Addiction Physician, As an Individual): Thank you, Mr. Chair and members of the committee.

I have been a physician for 39 years. I have my certificate of added competence in palliative care and addiction medicine from the College of Family Physicians of Canada. I began working in addiction medicine in 2012. Until 2021, I was the sole health care provider offering comprehensive consultations in addiction medicine at the London Health Sciences Centre, where, in 2023, an interprofessional addiction team was established. I also provide addiction consultations in St. Thomas.

I have decided to speak out to bring a voice to the horrific suffering I have witnessed from safe supply.

Early in my addiction career, I identified a link between injecting long-acting hydromorphone capsules and developing a heart valve infection. An infectious disease specialist I worked with found a link between injecting these capsules and getting HIV. When this specialist and the department chair took our findings to the community agencies, we were initially criticized and called fearmongers.

Fortunately, we established community engagement and developed an integrated response. As part of the response, in 2016, the London InterCommunity Health Centre developed a program that provided high-risk sex workers using hydromorphone capsules with short-acting hydromorphone tablets, also called Dilaudid. This was the inception of the safe supply program in London. I initially supported the program. It is important to note that we did not have a problem with illicit fentanyl at this time.

Prior to the safe supply program, I rarely saw people with spine infections. In the following summer, I saw five patients in one month. The numbers continued to climb. The common thread among patients was that they were injecting Dilaudid tablets. Many told me they were buying Dilaudid diverted from the safe supply program.

Some patients were in the program. I had patients who were housed, using clean equipment and only injecting Dilaudid developing horrific infections. Spine infections cause perhaps the worst suffering I have ever seen. Not only are they unbearably painful, but they can also cause paraplegia or quadriplegia.

In June 2018, I had my first patient tell me that he left his apartment to live in a tent near the pharmacy, close to the safe supply clinic where much diversion takes place, because the safe supply pills were cheaper and more abundant near the source. I lived in the neighbourhood and watched this encampment grow.

Since safe supply began, I have been involved in about 100 hospitalizations of patients with spine infections. That's currently about one per month. However, spine infections are only a small part of the suffering we see. About 30 patients per month are admitted with another severe infection. Of patients admitted with opioid use disorder, 25% were receiving a safe supply prescription and 25% reported using diverted Dilaudid. Only 4% of the consultations we did were for unintentional overdose.

Generally, in hospital, we start patients on home medications. If we did this for safe supply patients, the results could be fatal. This is dangerous for patients and very stressful for health care providers.

For example, patient one was prescribed eight milligrams of Dilaudid, D8s, which was 40 tablets per day, along with 100 milligrams of long-acting morphine in nine capsules per day. When they were given less than half of their prescribed dose, they had a severe respiratory depression—that is, toxicity. Patient two has frequent admissions requiring intubation. They were prescribed 28 D8s per day. They tolerated about six to eight and said they never took more than 12 in a day.

The patient population has changed. I see more young patients and many more men. Now, most start opioids recreationally and not with a prescription for pain, as was the case in 2012. I am also repeatedly hearing disturbing stories that people with prescriptions are vulnerable to violence.

Importantly, as I mentioned previously, when safe supply started in 2016, we did not have a problem with illicit fentanyl. We do now. Many patients have told me that they sell or trade much of their prescribed safe supply to buy fentanyl. Others not in the program have told me that their dealer has claimed to be out of Dilaudid and has sold them fentanyl, starting them down this path.

● (1550)

Safe supply appears to be contributing to the illicit fentanyl crisis. Safe supply is not reducing illicit fentanyl or its harms within a community. Our hospital experience also shows that safe supply is preventing patients from choosing opioid agonist therapy and the opportunity for recovery.

I would like to mention a program that is showing significant benefits. The Central Community Health Centre in St. Thomas has a low-barrier approach using subcutaneous buprenorphine, also called Sublocade. They are having success serving a very similar population to that of the London InterCommunity Health Centre, without the unintended side effects. It should be a model that we are discussing.

Of note, while I have broad shoulders, I found some of the comments made by Dr. Sereda on February 26 about me and cardiac surgeons to be misleading, and I look forward to an opportunity to address this.

Thank you for your work and your time. *Meegwetch*.

The Chair: Thank you, Dr. Koivu.

Next is Dr. Pauly for five minutes.

Dr. Bernadette Pauly (Scientist, Canadian Institute for Substance Use Research, and Professor, School of Nursing, University of Victoria, As an Individual): Good afternoon. Thank you for the opportunity to be here.

I am Dr. Bernadette Pauly. I'm a professor in nursing at the University of Victoria and a scientist at the Canadian Institute for Substance Use Research. I'm a member of the research team conducting the B.C. provincial evaluation of prescribed safer supply.

Prior to the introduction of the prescribed safer supply policy, evidence of the need for that intervention was well demonstrated by the overdose deaths caused by the unregulated drug market. However, it's critical to generate evidence of ethically justified interventions and determine whether or not prescribed safer supply reduces overdose risk. To answer that question, our team designed a rigorous mixed methods study using state-of-the-art approaches combining administrative and primary data.

In January 2024, the team led by Dr. Slaunwhite and senior scientist Dr. Nosyk published the first-ever population-level study in the British Medical Journal, a high-impact journal. Everyone receiving risk mitigation safer supply prescriptions was included in the study and was carefully matched with people not receiving them on multiple variables, including receipt of opioid agonist treatment. For those receiving opioids through this program, the risk of dying from any cause was reduced by 61% and the risk of dying of an overdose was cut in half. If they received four days or more, their overdose risk was further reduced to 89%. This is known as a dose-response relationship, and the finding was independent of opioid agonist treatment. A similar pattern was found for stimulants, but the sample size was smaller so there was less certainty. This protective effect continues week after week as long as they're able to access a prescription.

However, only 7.6% of those with an opioid use disorder and less than 3% of those with a stimulant disorder received the intervention during the period of study. There was limited implementation, with implementation occurring mainly in urban areas like Vancouver and Victoria and among prescribers who had larger caseloads of people with substance use disorders and more complex problems. While the intervention did not fix all their issues, nor was it expected to, it was protective for reducing risk of overdose death and all causes of death.

In a qualitative analysis, we found that prescribers were hesitant to take up the intervention out of fear of audit from regulatory colleges, as well as criticism and censure from colleagues. Where there were networks of prescribers who had support, there was increased continuity of prescribing. However, prescribing alone is an inadequate response to a systems issue, namely prohibition and an unregulated, unsafe supply of drugs.

The intervention was often difficult to access. Participants in the qualitative arm of the study reported the need to climb a steep staircase with many steps. Often, potential participants did not know about the risk mitigation guidance or safer supply. When they got their hopes up, they had to find a prescriber and navigate highly medicalized systems to get an appropriate prescription, and then pick it up daily to keep it. This required self-advocacy and fortitude. In a primary survey of 197 people, less than half of participants received a prescription sufficient to reduce withdrawal. Reducing withdrawal is a minimum requirement, so there's room for improvement.

Prescribed safer supply is a not a competitor to OAT or any form of treatment. It provides a pathway for people to access a life-saving intervention as part of individual recovery journeys. It does not replace or threaten the need for treatment. In fact, as part of a system of care, treatment options must be available for people if and when they are ready. In spite of this, the number of people dispensed a prescription in B.C. is decreasing.

Fears of diversion causing death are unfounded. Hydromorphone was detected in 3% of overdose deaths in 2023. It's unregulated fentanyl that's responsible for 85% of the toxic drug deaths. The root problem driving this emergency is toxic drugs, which is a consequence of prohibition. The unregulated market is accessed by those with substance use disorders and those without.

● (1555)

We need to expand access to alternatives beyond the health care system to ensure safe and regulated access to substances of known safety, quality and composition. We should be scaling up, not scaling back, safer alternatives to the unregulated drug market and looking to end prohibition.

Thank you. I look forward to the questions and comments.

The Chair: Thank you, Dr. Pauly.

Next, on behalf of the Thunderbird Partnership Foundation, we have Dr. Carol Hopkins.

Welcome to the committee. You have the floor.

Dr. Carol Hopkins (Chief Executive Officer, Thunderbird Partnership Foundation): [*Witness spoke in Lunaape*]

[*English*]

I'm Carol Hopkins of the Lenape nation in southwestern Ontario. I'd like to acknowledge the lands that you are joining us from and that we're all coming together on today.

In 2023, the number of first nations deaths due to drug poisoning was 36 times those in the general population in Ontario. In eight short years, from 2016 to 2023, first nations deaths due to the toxic drug supply grew at a rate of 33 times those seen in the Ontario population.

During the pandemic, from 2019 to 2022, 28% of first nations people used opioids in a harmful way, and 18% used methamphetamines to survive in an environment where there were no resources for housing, food security or income security. Those who reported food insecurity were two times more likely to use methamphetamine, according to a survey that Thunderbird ran. Forty per cent of first nations people reporting methamphetamine use felt hopeless to change their lives. It was this hopelessness that increased their risk for using opioids in a harmful way.

This population also reports a high rate of trauma, grief and loss, with a lack of resources close to home to support their mental wellness. The use of fentanyl, benzodiazepines and xylazine has been increasing across all regions of Canada, including in first nations. They are core to the opioid and toxic drug crisis that we are talking about today. The impact of these drugs requires community-based health resources that often first nations communities lack. First nations communities that declare a state of emergency report no capacity for preventing deaths due to the toxic drug supply. They also report their vulnerability to gangs, gun violence and murders, as well as human trafficking, which is now present in many first nations communities for the first time.

The war on drugs, including the criminalization of people for their health and social needs, has been a long-standing experience of first nations people in Canada, who are only 5% of the population yet represent 32% of those incarcerated. Indigenous women represent 50% of the incarcerated population. The war on drugs and incarceration have not increased safety from the toxic drug supply, have not reduced crimes of survival for people who live with opioid dependency and have not eliminated the illicit and toxic supply.

Indigenous Services Canada does not provide for physician or pharmacy services in first nations communities. We know those things are the responsibility of the provinces and territories. In this context, the opioid crisis and toxic drug crisis do not depend on geography. Rural and remote first nations communities are not exempt from the toxic drug supply or opioid crisis. The crisis is about a lack of equitable, available and accessible health care for first nations, with access to primary health care, physician services, pharmacies and public health resources. These are all necessary components of a response to the toxic drug crisis. Live-in drug treatment aimed at abstinence is not the evidence base for addressing opioids, and it is not the first line of evidence-based intervention. Abstinence-based programs will not change drug dependency or address physical withdrawal from opioids.

Where live-in treatment programs have additional resources—for example through provincial health authorities, harm reduction networks and first nations-governed culture-based and land-based services—and have options for readmitting or keeping first nations people on a continuous basis, clients have gone on to gain employment, obtain housing and maintain their own wellness.

Buprenorphine treatment is initiated by the community's primary care physician, when they are lucky enough to obtain a partnership; by addictions physicians through telemedicine; or by fly-in locums, who dispense daily under supervision. It has proven to be effective, along with a recovery program involving community mental health workers who provide both conventional counselling and culturally relevant healing practice. This comprehensive approach has enabled many patients or first nations people to stop or manage their opioid use and return to work, school and family. A year after such programs have been initiated, criminal charges and medevac transfers decreased, the needle distribution program dispensed less than half its previous volume and rates of school attendance increased.

● (1600)

Addressing the opioid crisis has been challenging for first nations communities, most significantly because of inconsistent support and resources to community-governed and culturally relevant treatment. One study of community-based opioid misuse reported that among adults aged 20 to 50, 28% were on buprenorphine or naloxone, double the rate of adults in the community living with type 2 diabetes.

First nations people have the right to live—to live life. They have the right to the sacred breath of life, and that has to be our focus in any drug policies that are humane and sensible for first nations communities.

First nations communities require increased capacity for reducing harms related to opioids, opioid analogs, methamphetamines and xylazine, such as consistent support; access to prescribers, pharmacies, safe housing, food security and medication to address withdrawal; and a choice to continue to use drugs safely. Harm reduction kits and resources are needed. Human resources are also needed—

The Chair: Dr. Hopkins, I'm sorry to interrupt. If I could get you to wrap up, you will get a chance to expand on your presentation in questions and answers.

Dr. Carol Hopkins: Human resources are needed in community. The existing resources of treatment centres can also play a role, but they need additional resources and capacity.

Thank you.

● (1605)

The Chair: Thank you.

Last but not least, from the Vuntut Gwitchin First Nation, we have Chief Pauline Frost.

Thank you for being with us. You have the floor.

Chief Pauline Frost (Vuntut Gwitchin First Nation): Thank you. I appreciate the opportunity today.

I am the chief of a very small community—

The Chair: Excuse me, Chief Frost. I'm sorry. The bells are ringing, and that means we're obligated to vote unless we have unanimous consent to continue.

Do we have unanimous consent to allow Chief Frost to finish her opening statement before we head off to vote?

Some hon. members: Agreed.

[*Translation*]

Mr. Luc Thériault (Montcalm, BQ): Mr. Chair, while we're at it, to avoid interruptions, could the volume in the room be lowered a bit so that I can hear the interpretation better without having to turn up the sound? It's too loud in the room.

We should be doing tests at the beginning of every meeting to solve the problem. This isn't the first time I've had to intervene. I haven't interrupted the witnesses more often out of courtesy. However, the discussion is becoming difficult to follow.

[*English*]

The Chair: Okay.

Chief Frost, I'm sorry for the interruption. Go ahead and finish your opening statement. We'll likely suspend once you're done.

You have five minutes.

Chief Pauline Frost: Okay. Thank you.

As the former minister of health and social services for the government of the Yukon, I was responsible for identifying the opioid crisis, as well as the COVID pandemic. At the same time, I worked as a lead negotiator for my first nation, a small, isolated aboriginal community in north Yukon. We signed our self-government agreement 30-some years ago. We exercise our inherent right to self-determination. We have responsibilities for the general welfare of all citizens, our community, the land and the resources. As an isolated community, we're a resilient people, resilient in that we are connected to our roots, our traditions. At the same time, we are deeply affected by the opioid crisis and the toxic drug overdoses in the Yukon and across this country.

The serious challenges that we face and the high cost of living.... Food security is huge. Fiscal capacity is limited in our communities, causing significant challenges in addressing mental health. Substance use challenges have arisen in our history due to colonialism, racism and intergenerational trauma. All of this is a priority for my community.

In April 2020 and 2023, we declared a state of emergency and substance use crisis in my community. The reason is that we've suffered significant loss due to opioid, alcohol and drug use and abuse. Over the last five years, we've lost 15 Vuntut Gwitchin citizens linked to substance use.

Because of the small community, this is very complex, and it affects everybody, with compound impacts and effects. Every person in my community has been affected in one way, shape or form. Because we're an isolated community, our citizens are required to travel out of the community for amenities and medical supports. Therefore, we tend to see impacts and effects when they get to the city. There's an urban centre effect on average on northern isolated people.

We have worked tirelessly to support our citizens the best we can with healing and wellness. Our approach has been comprehensive and non-judgmental. We commit to facilitating easier access to treatment services. We set aside, last year, almost a million dollars for supporting our citizens to access treatment programs. That comes out of our FTA base funding that we get for programs and services.

Ensuring consistent availability of counsellors both locally and remotely is a priority for me as a chief. We are developing aftercare programs that provide supports to our community.

What I'm saying here is that we are working hard to combat substance use in our communities. We are utilizing the Yukon's Safer Communities and Neighbourhoods Act to address and combat drug trafficking and bootlegging. We've asked for changes to the security designation for our northern airports so they can implement passenger baggage and freight screening for northbound routes, equivalent to what's seen southbound. In other words, the drug traffickers can come into our community without restrictions whatsoever because we're remote fly-in.

Our tools are limited, but we are making significant headway, and we have sent over 70 people to a treatment facility in the southern parts of B.C. because the Yukon is not equipped. Treatment options are not available to us in the Yukon; we have limited availability. We need more. My first nation needs support to implement programs and improve the wellness of my people.

As we are on the ground, we know what's happening. We have the flexibility, but we are also trying to address the crisis. Adequate and secure funding for life-saving interventions is not going to save us. It's not going to help us. We need more supports in addressing the illicit drug overdoses and for program services.

We looked at a piecemeal funding program available to us through the federal government and the territorial government, which is not sufficient. We just asked last year, at the Prime Minister's forum, for direct access to funding and support. Put it in our base, and let us provide services. We don't have that flexibility. There needs to be consideration of the political, social, economic and cultural pressures that we're facing.

● (1610)

I want to quickly say that we've just finished a coroner's inquest in the city of Whitehorse, Yukon, for four overdose deaths at the emergency shelter facility. Two of those individuals were residents of my community.

We are proud of our community, because we are resilient. We've done amazingly. We own an airline. We don't have a housing crisis. However, our people are directly affected. We have to make a meaningful difference in the services that are provided, and the only way forward is by working together and jointly addressing this. We have looked at options, like a safe exchange in our community. We've educated our citizens. We have looked at alternative options. We are looking at recovery withdrawal supports in our community. We also have to look at a distribution program.

Everything we need to do is about building on healthier families and healthier communities. For the first time, we are actually focusing on our young people now, and we have a youth wellness program. We're bringing our youth together, and facilitators are coming in—

The Chair: Thank you.

Chief Pauline Frost: *Marsi*. I appreciate this time.

The Chair: Thank you, Chief Frost. We're going to suspend now to allow members to vote.

You can expect the suspension to last for about half an hour. Then there will be probably about an hour of questions, more or less. Stretch your legs. We'll be back once we've voted.

The meeting is now suspended.

● (1610)

(Pause)

● (1700)

The Chair: I call the meeting back to order.

We've finished the opening statements and are now ready to move to rounds of questions.

We're going to begin with the Conservatives for six minutes.

Dr. Ellis.

Mr. Stephen Ellis (Cumberland—Colchester, CPC): Thank you very much, Chair.

Thank you to the witnesses for their patience.

Dr. Koivu, I listened carefully to your opening statement. When we look at patients—you described a couple of them—we're really not offering them any therapy other than opioid therapy. Perhaps there are other things in addition to that.

For the sake of those listening at home, we all know that people who take opioids will eventually get habituated or used to the dose they're on and will require escalating doses. If that's the kind of medicine we're going to provide, is it not fair to say that we're providing these folks with palliative care?

Dr. Sharon Koivu: Absolutely. That is one of the significant problems with opioids. As you take them, your brain has changes in neurochemicals. What you're taking, your brain becomes used to. That becomes your normal. To get the same effect, you have to increase the dose you're taking. To get the same euphoria, you have to continue to increase the dose.

Perhaps even more importantly, when your brain readapts to this new level of normal, you have to take opioids. If you miss them, your brain will miss them and you'll go into what's called withdrawal, which is a horrific experience. You get severe pain, anxiety, nausea, vomiting and diarrhea. You can feel like you're literally going to die. You keep thinking you need more and you need a higher dose. Whenever you're in a scenario where you're taking an opioid regularly, you're always chasing the high, your dose continues to escalate and you're always trying to medicate away from the withdrawal.

An important thing that isn't always mentioned, which I want to add, is that as your brain regulates and gets used to a certain amount of opioids, you can generally tolerate it if you're well. If you develop pneumonia, endocarditis or any other illness that affects your cardiorespiratory system, that same dose can be toxic or fatal. When you're taking an opioid, it could be that you're always taking the same dose of your Dilaudid or fentanyl, but if you develop pneumonia or sepsis, that dose could become toxic because your brain wants more than what your body can tolerate.

When you are in a position of getting a treatment that's given to you daily to keep you going from one withdrawal to another, it's not allowing your brain an opportunity for recovery. You're staying in a cycle in which you are absolutely dependent on the medication, and you can be at risk of developing tolerance, needing a higher dose and needing a dose that will eventually be more than you can handle. From the cases that I mentioned in hospital, patients were being prescribed substantially more than they could tolerate when we had them in a position where we could see what they were taking. Had we given them the amount they were prescribed, it would have been fatal for them.

Mr. Stephen Ellis: Thank you very much for that, Dr. Koivu.

It's interesting that you started talking about dosages. When we looked at patient 1—I wrote this down—they had 900 milligrams of morphine and 320 milligrams of hydromorphone. Using an opioid calculator to look at the overall dose of milligrams of morphine, that would be equivalent to about 2,500 milligrams of morphine. Is that correct?

● (1705)

Dr. Sharon Koivu: That is correct.

Mr. Stephen Ellis: Looking at that for the average Canadian and again doing the math, that's about 640 Tylenol 3s. You don't have to trust me on that, but I used the same calculator to do it.

The reason I talk about this is people often think it's just one tablet of eight milligrams of Dilaudid. It's a bit concerning that for those who don't use opioids on a regular basis, even though it's one tablet, it's still a significant amount of opioid.

Maybe, Dr. Koivu, you can talk a bit about that.

Dr. Sharon Koivu: Absolutely.

One tablet is also equivalent to four Percocet or 20 milligrams of OxyContin. Those are doses we consider fairly high during the opioid crisis. Taking two of them would essentially be considered relatively safe for most people. Even one can be considered toxic if someone is not used to taking it.

The numbers we're seeing are substantially higher than the milligram equivalent of morphine that I was seeing during the time when people were prescribing heavily for chronic pain. These are the highest doses I've ever seen.

Mr. Stephen Ellis: Very quickly, Dr. Koivu, if we're talking about 2,500-milligram morphine equivalents, what would be the recommended amount that a prescriber should be very cautious about going over? I realize this is a different patient population from even the usual chronic pain population, but what would be a guideline for Canadians listening out there?

Dr. Sharon Koivu: The guideline is the equivalent of 100 milligrams of morphine per day or less.

Mr. Stephen Ellis: And these people are receiving up to 2,500.

Dr. Sharon Koivu: Yes—or more.

Mr. Stephen Ellis: Thank you.

The Chair: Thank you.

We'll go now to the Liberals.

Dr. Hanley, you have the floor for the next six minutes.

Mr. Brendan Hanley (Yukon, Lib.): Thank you very much.

Thanks to all the witnesses for being here.

I'm speaking today from the traditional territory of the Kwanlin Dün First Nation and the Ta'an Kwäch'än Council in Whitehorse, Yukon.

Dr. Hopkins, I want to address the bulk of my questions to you.

Unfortunately, Chief Frost had to leave early during our vote, but I noticed that you were listening acutely to her testimony and you were nodding. I wonder if you can indulge me. Was there anything in particular that resonated, based on your knowledge and experience, from Chief Frost's testimony as chief of an isolated northern community?

Dr. Carol Hopkins: We typically assume that the issue with resources and capacity to respond to the toxic drug supply is remoteness, that it's geographical. We are not asking for or expecting hospitals to be built in every one of our communities, but the Canada Health Act says there should be universal access to health, and its objective is accessible health care without barriers to our wellness.

I mention this because there are lots of Canadians who live in rural and remote communities, but we are talking specifically about first nations people. They have a right to access health care close to home, where they need it. When it's not available there, they will find it someplace else, which often draws them to urban environments.

In urban environments, they don't always have access to the appropriate health care they need when they have opioid dependency or addictions to methamphetamine or other stimulants or even to sedatives like benzodiazepines, which I mentioned, or the “tranq” drug xylazine, which is not a controlled substance. All of them have substantial effects on people when they don't have any health care resources close to home.

That isn't just because of geography. That has to do with decision-making. If the Canada Health Act says there should be universal access to health care for every resident in Canada no matter where people live, then where are the policies that ensure access to physician care, prescribers, nurse practitioners, pharmacies, public health resources and harm reduction resources when they exist for the rest of the population? Why are those not made available to Canadians and first nations populations no matter where they live?

Often this is referred to as a jurisdictional issue. Who's responsible? The Canada Health Act is clear: Our rights as defined in treaties, the Constitution and now the UN Declaration on the Rights of Indigenous Peoples do not erase our rights under the Canada Health Act. This is a decision, a policy decision, not just a matter of geography.

● (1710)

Mr. Brendan Hanley: If you don't mind, I'll jump in there, because my time is limited.

One thing Chief Frost referred to was having spent a million dollars of base funding from the VGFN to, in this case, send people out for treatment. I can't speak specifically to the number of individuals, but I think she mentioned 70.

We know that often when people go outside for treatment and come back into a community, they are at high risk not just for overdose but for relapse because the community supports—the aftercare—aren't there. Following up on your previous point, do you know of or could you describe models of care that work within a small community? Maybe there are success stories you know of or have seen about how care can be delivered within a community so that you have continuity through aftercare.

Dr. Carol Hopkins: There are communities, no matter how big or how small, remote or isolated, that have partnerships with local health authorities, physicians, prescribers and nurse practitioners, who deliver services by flying into the community from time to time or by monitoring their patients through video conferencing. There are partnerships with the chief and council and direction through a band council resolution on how health services are operating through the health centre, as well as these kinds of partnerships with elders and cultural practitioners. It's clinical support and medication, together with culture-based resources, that have made a difference.

I gave an example of a community in northern Ontario where that significantly reduced crime and the number of kids going into child welfare. Kids showed up to school with food in their stomachs, houses were filled with furniture, toys and food, and life returned to normal, because it's a whole-of-community approach and because the community, through a number of partners, had the resources it needed to respond to the whole population. It's not just about the impacts on the individual who uses drugs. It's about the impact on the family and the whole community.

The Chair: Thank you, Dr. Hanley. That's your time.

[*Translation*]

Mr. Thériault, you have the floor for six minutes.

Mr. Luc Thériault: Thank you, Mr. Chair.

Thank you to the witnesses for being here.

Personally, I have no preconceived ideas about the crisis we're trying to understand and fix by means of recommendations. In listening to the various witnesses, though, I end up feeling a little confused. There seems to be no scientific consensus. In fact, increasingly, there appears to be a division within the scientific community or among the professionals working in the field.

Professor Pauly, you talked about safe supply, which saves lives. I guess that was the purpose.

First, does safe supply necessarily have to be temporary? If so, how can we assess that?

Second, why is access to opioid agonist therapy at odds with the impact of safe supply?

● (1715)

[*English*]

Dr. Bernadette Pauly: These are two very important questions.

I just want to speak for a second about the split in scientific evidence that the member referred to. There isn't actually a split when you look at what is considered peer-reviewed evidence or evidence that's been reviewed by multiple scientists in the field.

Our team did a study where we looked at all of the evidence for safe supply. There are close to 40 of these types of peer-reviewed articles, and the evidence is overwhelmingly positive: It connects people to a safer alternative, reducing overdoses; connects them to health care and other types of supports, as needed, like housing; and reconnects them back to family and community. I just wanted to mention that evidence.

Should safe supply be temporary? This is a good question, because when it was introduced in British Columbia, it was introduced as a temporary measure. However, it became clear that we needed it as part of a systems response. I really want to emphasize this piece about a systems response. In British Columbia, we had some evidence early on that when we combined multiple interventions, like take-home naloxone with opioid agonist treatment and overdose prevention, it showed some really good results. However, it wasn't enough. Safer supply comes in as another form of intervention within a comprehensive approach.

As to your question about why there's opposition, I personally don't understand why safer supply is being scapegoated, because the real harms here are coming from a very toxic and unregulated drug market. That is what's killing people.

[*Translation*]

Mr. Luc Thériault: For example, what's your opinion on Dr. Koivu's statement regarding scientific consensus around safe supply?

[*English*]

Dr. Bernadette Pauly: Our evidence has shown that it reduces overdose deaths, and I can point to other studies where it has not been shown to increase rates. Rates of addiction have not been increasing since we introduced safer supply. The description that Dr. Koivu gave is about the ever-escalating need for increasing dosages. That's not what I see happening in the way that prescribers in British Columbia are practising. In fact, in our study, we found that safer supply medications were, at least in the first 18 months, at a lower dose than we see with traditional opioid agonist treatment.

I do a lot of qualitative research. I interview people who are receiving safer supply, and I often ask them about their goals. I would say that, frequently, what they talk about is the goal of getting off safer supply. That might include using safer supply for a period of time and maybe transitioning to OAT, but they have a plan because they too want to live a full life and have a high quality of life. Those kinds of goals are, I think, really important.

That's some of the reality that I see within the work I'm doing.

● (1720)

The Chair: Thank you, Dr. Pauly.

Next is Mr. Johns, please, for six minutes.

Mr. Gord Johns (Courtenay—Alberni, NDP): Thank you all for your testimony.

I'll start with you, Dr. Pauly.

You heard from Dr. Koivu. She raised concerns about infectious complications for people using safer supply. Is this something you found in your research with people who were injecting fentanyl and then switching over to safer supply, or people who started on safer supply? Is this what you're seeing in your research as well?

Dr. Bernadette Pauly: I'll give you a bit of background. When people are injecting from the unregulated and toxic drug market, there are additives. My colleagues on the panel have spoken to this and to how harmful the additives in the unregulated market are. They often cause abscesses and injections.

I believe the committee had a brief submitted by Dr. Gomes, who looked at administrative data for people receiving safer supply—this was in Ontario—and the rate of infections went down when they went into a safer supply program, likely because they were no longer injecting toxic substances from the unregulated market. However, they also would have had a connection to health care, and that's a really positive outcome of safer supply types of programs. In British Columbia, we have more injectable formulations, so if there is a concern about injection-related infections, that may be why those are being used more in British Columbia.

Mr. Gord Johns: Dr. Koivu, given what Dr. Pauly said, could you please submit, within 14 days, your own research to this committee that supports your claims on infections caused by hydromorphone?

Is it the will of the committee to get support for that?

Did the witness agree, Mr. Chair?

Dr. Sharon Koivu: I can—

The Chair: Well, if you've asked her to provide it and she agrees to provide it, I don't think you need everyone else's opinion.

Mr. Gord Johns: I wanted to make sure that was on the record.

Thank you so much.

I'm going to go to Ms. Hopkins.

You were a co-chair on the expert task force on substance use. The expert task force was unanimous in recommending that we scale up safer supply, stop criminalizing people who use substances and ramp up treatment on demand, recovery, prevention and education.

You had a really wide spectrum on the expert task force on substance use. Can you speak about your disappointment, maybe, with the government not following through with the recommendations and your experience with how important it would be to reinstate the expert task force and implement those recommendations?

Dr. Carol Hopkins: We're talking about using evidence, and the question is about whose evidence is more credible. That's quite a common conversation when it comes to first nations people, whose world view and culture-based evidence are typically set aside. However, that does not mean, for example, that culture and safer supply are completely incompatible.

Safer supply is one more tool in the tool box. There is no silver bullet. There is not one medication. There is not one strategy, method or form of care that will solve the opioid crisis or the toxic drug supply. There are many strategies that have to be used together in combination, like—

Mr. Gord Johns: I don't know if the question was heard properly. I apologize for that.

We just heard from the First Nations Leadership Council and the B.C. First Nations Justice Council. They're calling for an emergency cross-governmental and multilateral strategy that ensures the safety of people who use drugs.

Dr. Sayers, a BCFNJC member, said that "the toxic drug crisis needs to be treated and addressed as a public health issue, not a criminal justice issue." Grand Chief Stewart said that how we're proceeding right now is "very much wrapped up in the destructive impacts of colonialism."

Can you add your thoughts on those statements?

● (1725)

Dr. Carol Hopkins: I just want to emphasize the importance of safer supply. That's one tool that needs to be available to everybody.

In addition to understanding the context of first nations people, as I said earlier, we do not have the community-based resources necessary to address the impacts of opioid toxicity or the toxic drug supply. We don't have services close to home where people need them, when they need them. That often leads them to move, travelling off reserve for periods of time. Often, the crowds they find most welcoming are those involved in selling illicit drugs. Then they come back into the community, and now we're creating a new relationship that has significant impacts on families and the whole community.

For the first time ever, first nations communities are reporting murders, not by first nations people murdering first nations people, but by gangs from large urban environments coming onto reserves and committing these crimes. Gun violence and human trafficking have increased.

If we look at what the perception of that is, we could say that because of racism in Canada, first nations people will be blamed for those kinds of activities; they did this to themselves. That's the same sentiment for people who use drugs. They should just stop; they can just decide to. Why don't they choose something different when they're losing all these things? We're blaming the victims without supporting their right to health and social services.

The United Nations—

The Chair: I'm sorry. Thank you, Dr. Hopkins.

We'll go to Mrs. Goodridge, please, for five minutes.

Mrs. Laila Goodridge (Fort McMurray—Cold Lake, CPC): Thank you, Mr. Chair.

I want to thank all the witnesses for being with us and for being patient. It's unfortunate that Chief Frost had to leave us before we got a chance for questions. I found her testimony incredibly insightful.

Dr. Pauly, did the study you cited look at diversion as an issue?

Dr. Bernadette Pauly: That's such an important question, because it's definitely the issue that I would say is creating the most controversy.

I will speak to two ways in which.... While the study didn't directly look at diversion—

Mrs. Laila Goodridge: It didn't look at diversion.

Dr. Bernadette Pauly: No. I will explain—

Mrs. Laila Goodridge: It's yes or no. We have very limited time and I asked a very short question. The convention in this committee is that witnesses answer for about the same amount of time that the question took to ask.

Did diversion get looked at?

Dr. Bernadette Pauly: Diversion was not apparent, because there was a dose-response relationship. In other words, if people got more days of the medication, there was less risk of overdose, which suggests they were taking their medications.

There was a dose-sensitivity relationship. Higher doses meant less risk.

Mrs. Laila Goodridge: Thank you.

Dr. Bernadette Pauly: What this led to was people taking their meds in many cases.

Mrs. Laila Goodridge: Dr. Koivu, I'm sure you've seen the proposals coming out of the city of Toronto asking to move toward decriminalization for that city. Do you think that will have impacts on communities like London?

Dr. Sharon Koivu: I think anything that happens in Toronto is definitely going to have an impact on London. What we're seeing in London has been largely affected, I think, by decriminalization as it is.

We're certainly seeing a lot more open drug use. It's very common to see people injecting in parks, smoking fentanyl in parks and injecting Dilaudid in public spaces already, so I think that's something we'll have a problem with.

Mrs. Laila Goodridge: Really quickly, have you seen a change in the drug deaths in London since the so-called safer supply program came in?

Dr. Sharon Koivu: Absolutely.

I don't know how to answer that very quickly, but the first thing I'll say is that in 2016, our overdose deaths were equal to the province's. In 2022, for which we have information, the provincial rates went up by about 2.7% and London's went up almost fourfold. There's a significant increase in overdose deaths compared to the provincial average. There's also a significant increase in overdose deaths compared to the other community I work in just south of there, which had exactly the same rate in 2016 and now continues to be the same as the provincial average.

The other place where I see significant change is in youth. If you look at the youth population—this data is all available on Public Health Ontario's opioid tool—for people 15 to 24, London's rate was lower than the provincial average in 2016 and now it's substantially higher. It's the same with people 25 to 44. When I'm looking at people I would consider young, there has certainly been an increase in deaths.

The other thing is that hydromorphone is absolutely more common. It's twice as common to find hydromorphone in deaths in London than in the provincial average. Often, the provincial averages dilute things. If you go to Ontario, you'll find that where safer supply has been available, there are increases over provincial averages.

● (1730)

Mrs. Laila Goodridge: Thank you. I appreciate that.

I'm now going to move a motion that I put on notice on Friday. It says:

> That the committee invite the Minister of Mental Health and Addictions and Associate Minister of Health before the committee for no less than two hours; and that the study of the opioid epidemic and toxic drug crisis in Canada be extended by six meetings to invite further witnesses

I think it is absolutely incumbent on us, as we've been hearing testimony and seeing the entire situation shift, that we have more witnesses come so we can explore some of the public safety and other aspects that we have not been able to fully explore through this committee. I understand that we've had some conversations about amendments.

With that, I will cede the conversation.

The Chair: Thank you, Mrs. Goodridge.

The motion is in order. The debate is on the motion.

Dr. Ellis has the floor.

Mr. Stephen Ellis: Thank you very much, Chair.

I appreciate the comments from my colleague on the need to continue this discussion. It's important that we underline for Canadians the fact that some controversy exists here. Not all of it is based on science and much of it is based on opinion, which is not necessarily helpful when we know there are good scientific-based arguments. Many of my colleagues may not like that those exist, but they do.

It's important to continue on this road to enable this committee to understand that some of the science that has been referenced here does not answer the questions that we need answers to. It's also important to understand that the Government of British Columbia has asked for an end to the decriminalization experiment, which has certainly been outlined by communities such as New Westminster, Richmond, Campbell River, Kamloops and Sicamous. As Canadians hear more and more about the experiment, Canadians are fearful for their own communities. They're fearful for their communities because of contamination from used paraphernalia. They are concerned because of the potential for exposure of drugs to children, and we've heard even to pets in some areas.

The other thing that I've heard directly from Canadians is they are concerned about the loss of accessibility to their downtowns. That's a concern that we heard very clearly from a deputy chief constable in Vancouver, who testified at this committee not that long ago. She made it very clear that the decriminalization experiment has led to the loss of downtowns. Substances are being used outside of businesses, outside of residences, on transit and near schools, parks and beaches. The deputy chief constable's testimony noted that police were powerless to stop this type of activity.

The Minister of Mental Health and Addictions has spoken very forcefully about this in the House of Commons and in the media in attempting to explain away the request by the Government of British Columbia to end the experiment. I find that interesting, because it was the Government of British Columbia that came to the federal government asking for the experiment, but we all know, even though this is not scientific in a sense, that when an experiment is going awry and the people in charge of the experiment say they need to end it, it needs to end. When doing a scientific experiment such as a randomized controlled trial, if the lead investigators understand that something has gone awry, they don't continue the experiment. They stop it, and they don't wait for days and days to stop it. They stop it immediately when those signals are out there.

I'm very disappointed in the NDP-Liberal government, and specifically in the Minister of Mental Health and Addictions. The British Columbia government has asked for the experiment to end, and now there are negotiations with the NDP-Liberal government to continue the experiment. If we want to talk about this and we use the metaphor I used, even though I realize it's not scientific, then we know clearly that the experiment must end now for the betterment of this country, because it's a failed experiment. We've heard that over and over. We know it's a failed experiment. The B.C. government knows it's a failed experiment.

The question that I have—

● (1735)

Mr. Gord Johns: I have a point of order, Mr. Chair.

Mr. Stephen Ellis: —is this: When will the NDP-Liberal government will know it's a failed experiment?

The Chair: Dr. Ellis, there's a point of order from Mr. Johns.

Mr. Gord Johns: Mr. Chair, just for clarification, the B.C. government has not asked to stop decriminalization in British Columbia—

Mr. Stephen Ellis: Excuse me, Mr. Chair, but that's not a point of order.

The Chair: Thank you, Mr. Johns. That is not a point of order. It's a question of debate, so I'm going to cut you off there.

Mr. Gord Johns: Mr. Chair, I think it's been ruled by the chair—

Mr. Stephen Ellis: Thank you very much, Mr. Chair.

When my colleague wants to have the floor, he can raise his hand and have his turn. He should know that. He's been here long enough. Even though perhaps he is ideologically motivated by his wacko comments, we need to continue on with this.

That being said—

Mr. Gord Johns: Mr. Chair, on a point of order, it is completely unacceptable for a member to be calling another member wacko.

The Chair: Mr. Johns, please contain yourself. He said that your comments were wacko. That may be unpleasant to hear, but it wasn't an attack on you. Your interruptions do not constitute points of order. I would ask that you wait your turn. You are on the speaking list; you're third.

Dr. Ellis, go ahead.

Mr. Stephen Ellis: Thank you very much for that, Mr. Chair.

I don't mean to disparage the member. As I said, his comments are wacko. I think it is important to understand that the citizens of this country no longer want to tolerate ongoing difficulties with the experiment. It has been termed by my friend and colleague Dr. Hanley from the Liberals as an experiment from the outset. It was part of the motion of this study here at the health committee.

I'll end my comments there. Thank you, Mr. Chair.

The Chair: Thank you, Dr. Ellis.

Madam Brière, please go ahead.

[*Translation*]

Mrs. Élisabeth Brière (Sherbrooke, Lib.): Thank you, Mr. Chair.

First, Dr. Ellis is clearly conflating decriminalization with drug use in public spaces.

Second, the government of British Columbia didn't request an end to decriminalization. Rather, it asked that its request be reviewed.

Regarding the motion, since the minister has already appeared before the committee and there will be a four-hour committee of the whole in the House before the end of the month, and given our upcoming trip next week during which we'll have the opportunity to meet people on the ground and ask all our questions, I suggest amending the motion to read as follows: “that the study of the opioid epidemic and the toxic drug crisis in Canada be extended by two meetings to invite further witnesses.”

[*English*]

The Chair: All right, we have an amendment. The amendment is in order. The effect of the amendment is to replace identifying the minister and the number of meetings, simply bringing it down to two additional meetings to hear from witnesses.

The debate is now on the amendment, and Mr. Vis has the floor.

Mr. Brad Vis (Mission—Matsqui—Fraser Canyon, CPC): Thank you, Mr. Chair.

I won't take too much time. I am a British Columbian, and it's nice to see you again. It's been a few years.

The Leader of the Opposition mentioned the Abbotsford Soccer Association in question period today. My son was playing on the weekend, and I asked Coach Gill, the youth coordinator for the first kicks program, about what was taking place and the letter that was featured widely in our local regional media.

Decriminalization in British Columbia has led to widespread chaos. There were kids who saw a woman get raped at our soccer field last year, and she was on drugs when it happened. The stuff is devastating. My office is adjacent to Haven in the Hollow, which was a homeless shelter that became a safe injection site. During the pandemic, it became a place where people could openly do any drugs they wanted and consume alcohol. It brought chaos to the neighbourhood where my office is. The Legion came to me a few weeks ago. It's less than a block away from the site, and every day they have to ask people not to consume meth, crack and other hard drugs on site.

The decriminalization order put forward by the government was very clear that it wouldn't apply to those types of places, but since it has been unleashed, the consequences have been grave for the residents of the Fraser Valley. I'll note as well, in the context of decriminalization, that in the health region where I reside, the Fraser Health region, we had, I believe, last year—and don't quote me on this—one of the highest per capita death tolls after Northern Health in British Columbia. At the same time as we had a record number of deaths proportionate to the rest of the population in British Columbia—the second- or third-highest number—there was no increase in funding to help people get clean and help people access a detox bed and a site that would give them the treatment they needed.

Decriminalization is killing a lot of British Columbians, and I would encourage everyone to vote for this motion. I think it's a good one.

Thank you for your time.

● (1740)

The Chair: Thank you, Mr. Vis.

Next we have Mr. Johns, and then it's Dr. Powlowski and Monsieur Thériault.

Mr. Gord Johns: Thank you.

First, in terms of extending the number of meetings, there are lots of reasons why we should have more meetings.

I look at Fort McMurray. They had an all-time high drug poisoning death rate in the last year. Alberta's death rate from toxic drugs has gone up 17% over the last year. They're on a trajectory to pass British Columbia by June. There are 43.3 deaths per 100,000. British Columbia is at 46.6 deaths per 100,000. Lethbridge has triple the toxic drug death rate of British Columbia. That's all without decriminalization and without safer supply. Regina has a 43% greater death rate per 100,000 than British Columbia.

It is absolutely a tragedy what is happening in the provinces without safe supply and without decriminalization. We are seeing a literal disaster happening. It's a health emergency. In fact, up in Alaska, which neighbours those provinces, there was a 45% increase in toxic drug deaths last year. It's a Republican state without safe supply and without decriminalization.

We're constantly hearing about the need to.... We heard from the police chiefs association that the diversion of safer supply is not what's killing people; it's deadly fentanyl. We heard from Dr. Pauly today that 85% of deaths are from fentanyl, and only 3% of people who died had traces of hydromorphone.

The police were clear that criminalizing people who use substances causes more harm. That's what we heard from the expert task force and the police chiefs association, and what we continue to hear from chief medical health officers, including every single chief medical health officer on Vancouver Island. They have been unequivocally clear that criminalizing people causes more harm and that safer supply reduces deaths.

We have peer-reviewed data that the very small amount of safe supply that is used to replace toxic street drugs—which are unregulated, and manufactured, marketed and sold by organized crime—reduces the risk of toxic overdose deaths. We have had a multitude of reports. I believe the chief medical health officer for Toronto is also asking for the government to consider decriminalization.

We've heard from the police chiefs association repeatedly about the fact that there is no going back on criminalizing people. “Those days are gone.” That is a quote from the president of the British Columbia Association of Chiefs of Police. They were looking for tools in British Columbia to move people out of public spaces so that they could make sure the public felt safe. At the same time, they were clear that they want to see more safe consumption sites.

I'm disappointed that we won't be in Lethbridge, because Lethbridge is where they closed a safe consumption site, and Lethbridge is ground zero in Alberta. It has the highest death rate in the province of Alberta. It has three times the toxic drug deaths that we're seeing in British Columbia. In Medicine Hat, there are 63 deaths per 100,000. That is almost 40% greater than the death rate we're seeing in British Columbia, and it's almost the highest death toll we've seen in any health authority in British Columbia.

I just wanted to highlight these really important reasons why we need to have more meetings. I support having two more meetings. I hope we can centre one of those meetings on getting a purely indigenous perspective. I think we should invite Ms. Hopkins back, out of respect, since this meeting might be cut short and her testimony might be cut short and minimized. I would hate to see that happen, especially when we know that indigenous people in my home province are seven times more likely to die from a toxic drug overdose. In her community, it was 36 times more.

● (1745)

We also heard from Ms. Petra Schulz from Moms Stop the Harm, when she testified, that the recovery model in Alberta is just a name. We heard that for a nation south of Lethbridge that was promised a therapeutic treatment centre, the only shovel that's gone in the ground was a ceremonial one three years ago. People are waiting. They're waiting up to six months to get help in certain parts of Alberta. That's if they want help.

The goal should be to keep people alive. Harm reduction, treatment and recovery go hand in hand. We don't need to have one without the other. This is a crisis that is ravaging North America. It is skyrocketing in Conservative provinces and Republican states. We need to change direction. We need to work collectively.

In Portugal, politicians were successful when they got out of the way and let the experts lead with evidence-based policy, evidence-generated policy and peer-reviewed research. That's how they moved forward. I can't think of another health issue where politicians are having their say like this and interfering with what is truly a health issue.

I support going to two meetings. I also wanted to make sure that my comments were on record.

The Chair: Thank you, Mr. Johns.

Dr. Powlowski, please go ahead.

Mr. Marcus Powlowski (Thunder Bay—Rainy River, Lib.): I would like to get back to the expert witnesses we've invited here and not listen to other MPs wax on about their views on this subject. I was certainly tempted to move a motion to adjourn debate, but I won't.

Can we not all decide to vote on this? There seems to be unanimity. Let's vote and let's get back to the witnesses. We are doing a study on this subject. We invited these people here to ask their opinions, and I'd like to get their opinions.

Thanks.

The Chair: Thank you, Dr. Powlowski.

[*Translation*]

Mr. Thériault, you have the floor.

● (1750)

Mr. Luc Thériault: Mr. Chair, I find it quite ironic that a motion is being tabled to hold more meetings and hear from further witnesses, while our witnesses are being sidelined today. We had many questions to ask them.

I'll be brief, so as not to contradict my previous statement. I said I was willing to extend the duration of this study. I believe we can trust ourselves. We want to present recommendations that will matter and not just be shelved. We'll be going to see what's happening on the ground. I would have been very comfortable with extending our study. If, one day, we realize that we need four meetings, we'll hold four meetings.

However, for today, I would like to hear what the witnesses have to say. This isn't the first meeting that has been interrupted by a motion. We should perhaps take a look at how the committee works. I would rather discuss our business in a subcommittee than during a study, where we make a spectacle of ourselves in front of witnesses about our understanding of the issue. I find it disrespectful. I'll stop there.

I'm ready to hear any proposals. However, when we have witnesses with us, let's ask them questions so that they can provide information.

In two and a half minutes, I would like to ask the remaining witnesses what they think of the situation in Vancouver and what they think of criminalization being reinstated in British Columbia.

The Chair: Thank you, Mr. Thériault.

[*English*]

There are no further speakers on the list. I presume that we are ready for the question.

The question is on the amendment. Just to be specific, the amendment is to delete the following words from the motion: “That the committee invite the Minister of Mental Health and Addictions and Associate Minister of Health before the committee for no less than two hours; and”. It would also change the word “six” to “two”.

The amendment would be the following: “That the study of the opioid epidemic and toxic drug crisis in Canada be extended by two meetings to invite further witnesses.”

All those in favour of the amendment?

(Amendment agreed to)

(Motion as amended agreed to)

The Chair: The motion is adopted unanimously.

Thank you, everyone. That brings us back to the witnesses.

Mrs. Goodridge, you have 47 seconds left in your turn.

Mrs. Laila Goodridge: Thank you for that, Mr. Chair.

I'll go really quickly to Dr. Pauly.

More people are dying in British Columbia despite both safe supply and decriminalization. Why do you think that is?

Dr. Bernadette Pauly: They're dying because 85% of deaths are caused by a toxic, unregulated drug market, and we haven't adequately scaled up interventions like harm reduction and treatment. It's a combination of those things that will reverse the trend.

Mrs. Laila Goodridge: Do you believe recovery from addiction is possible?

Dr. Bernadette Pauly: I believe recovery is absolutely possible, and it is an individual journey. There are many pathways to recovery.

The Chair: Thank you, Mrs. Goodridge.

I'll go to Dr. Powlowski, please, for five minutes.

Mr. Marcus Powlowski: Dr. Pauly, I'm sorry for putting you on the spot, but help the committee out. In response to Mr. Thériault, who said that the experts seem to have different opinions as to the evidence for safe supply, you said that you did a peer review and it seemed to pretty overwhelmingly show the benefits of safe supply.

Let me just point out what else our committee has heard. We asked Health Canada to appear before the committee. We had the experts who I think were behind approving B.C.'s request, and they seemed to be in favour of safe supply. They themselves admitted that there wasn't very good evidence for the benefits of safe supply. I would note the B.C. health officer, in a review of prescribed safer supply, said:

> Most of the limited published peer-reviewed studies lack a control or comparison group and the actual intervention received by study participants is in most cases a combination of broader access to wrap around health services including [safe supply] and primary care, making it difficult to attribute any benefits to PSS alone

They suggested that they need to have more studies.

The Stanford-Lancet commission, which looked at the opioid crisis—and I would point out that these aren't a bunch of right-wing fanatics—in their study said, "the evidence clearly shows the folly of assuming that population health inherently improves when healthcare systems provide as many opioids as possible with as few possible regulatory constraints as possible." They, too, were against safe supply. We talked to the head of that commission, and he said the problem with safe supply is that basically you're replicating what has caused the problem to begin with, which was doctors prescribing too many narcotics, people getting on them and then people having trouble getting off them.

Do you continue, though, to say that no, the evidence is clear that safe supply is good?

● (1755)

Dr. Bernadette Pauly: I really appreciate that question about the science, because it has been very confusing and disturbing to see the way that some of the debates have played out.

To begin, many of the citations that you provided preceded 2020 and were from the very early days of the development of the body of evidence on safer supply. Since 2020, it's doubled. In fact, some of the strongest evidence has emerged in about the last six to 12 months. Our team is obviously at the forefront of producing evidence in British Columbia, where we are seeing positive impacts.

Yes, I stand by my statement. After a review of over 40 studies, the findings were overwhelmingly positive. What I really want to urge this committee to do is separate ideology from evidence. I don't think any of my colleagues wouldn't say we need more treatment, yet we know there are still challenges with treatment. People come out of treatment and do relapse. We need to look at what kind of comprehensive system we're creating instead of creating these ongoing tensions.

I'll stop there if you have a follow-up.

Mr. Marcus Powlowski: The B.C health officer's report was quite recent, as was Health Canada's, and after looking at the evidence, I certainly wasn't overwhelmed with it. However, let's change the subject.

Your study wasn't a randomized control trial, which is the gold standard, and the validity of your results depends on how well you matched the people getting safe supply with those who weren't getting safe supply.

One of my concerns with your study—and you can correct me if I'm wrong—is the comparison group, the people who weren't in safe supply. You got those names from various places, one of them being the discharge abstract database, which, in my understanding, is from hospital records of people who had been admitted for either a diagnosis or something to do with using opioids. My concern is that in your comparison group, you have a sicker population, because they've been in the hospital recently, either because they overdosed—

The Chair: Dr. Powlowski, you're out of time. If you could get to a question, we can get a short answer.

Mr. Marcus Powlowski: She's heard my question. I guess I get no response for her answer, but am I wrong?

Dr. Bernadette Pauly: Is it possible for me to answer?

The Chair: Do so as succinctly as possible, Doctor.

Dr. Bernadette Pauly: Okay. Thank you.

Our study came out after the provincial health officer's report, as did a number of other studies. On the control group, multiple linked databases were used to generate, through two different methods, the control group, matching on multiple variables. I'd be happy to refer you to Dr. Nosyk's seminar, which explains extremely well how the matching occurred and the similarity between the two groups.

● (1800)

[*Translation*]

The Chair: Mr. Thériault, you now have the floor for two and a half minutes.

Mr. Luc Thériault: Thank you, Mr. Chair.

In a previous meeting, we heard from Dr. Morin, who told us that addictions are complex chronic diseases. This complicates matters because multi-pronged action is required. Furthermore, we're told that relapse is part of the process. British Columbia is trying to correct course, in a manner of speaking.

My question is for Ms. Hopkins, but Ms. Pauly can also weigh in if there is time.

How do you see the situation in British Columbia, and what do you think about the government's desire to correct course? In your opinion, must this lead to “recriminalization”?

[*English*]

Dr. Carol Hopkins: Absolutely not. Thank you for the question.

The expert task force on substance use and mental health recommended safer supply and decriminalization, but they also said that it should be within a full spectrum of supports for people who use drugs or substances, or who wish to enter into a recovery journey.

The task force clearly recommended a more comprehensive and responsive system. When you provide people with the medication they need to live life every single day but they don't have a home, they don't have income security or food security, and they don't have people they can rely on to support them.... Every person needs another person to support them and to be a champion for their belief in their ability to succeed in life, whatever that means from their perspective. Those comprehensive supports are absolutely necessary as an addition.

As I said, there's no silver bullet. There are many instruments that will support change and will keep people alive. Safer supply and decriminalization are not a silver bullet. They're not meant to end the opioid crisis and the toxic drug supply, but they will keep people alive. They will ensure that human beings have the right to live life. That should be our goal: to make sure that human beings can continue to live life. There are many tools. There have to be many tools.

This is not an easy answer, and it's not an easy solution, but what we're seeing is a focus on one technique, one answer, and on criticizing it without considering the other resources that are necessary. When those other resources are in place, we've seen positive changes that have impacted families, their children and their communities. They increase safety, decrease the number of kids in child welfare, increase the number of kids going to school and increase safety in the community. I can't stress enough that a comprehensive approach is necessary.

The Chair: Thank you, Dr. Hopkins.

Dr. Carol Hopkins: Thank you.

The Chair: We'll go to Mr. Johns, please, for two and a half minutes.

Mr. Gord Johns: Dr. Pauly, you talked about the effectiveness of safer supply, and you cited some really important information. Can you also talk about why safer supply hasn't been scaled up? What are the barriers you're seeing?

Dr. Bernadette Pauly: This is a really important question. Without a doubt, part of the barrier is the politicization of safer supply and blaming it for what is a problem of the toxic and unregulated drug market. Safer supply is part of a comprehensive solution.

Some of the challenges related to increasing access—

The Chair: Excuse me, Dr. Pauly, but we're having a problem hearing you here.

Dr. Bernadette Pauly: I'm sorry. Is that any better?

● (1805)

The Chair: Yes. Please go ahead.

Dr. Bernadette Pauly: What I was saying is that part of the reason that safer supply hasn't been scaled up is it's been highly politicized. That's a harmful narrative when the real problem is a toxic and unregulated drug supply.

In terms of scaling up, we've had quite a lot of insight from the research we've done around prescribers, and particularly the idea of prescribers not being attacked or feeling criticized by their colleagues and recognizing the importance of the intervention and the support of regulatory colleges. One interesting finding is that nurse practitioners are three times more likely to prescribe safer supply. In that finding, there are opportunities to remove barriers, particularly in rural and remote communities. I'd also mention that in British Columbia, the First Nations Health Authority has a virtual substance use and addiction program, which was found to facilitate access for people in rural and remote communities.

We haven't talked much about non-prescriber-based models, but I wanted to highlight that in British Columbia, only a portion of the people who died of an overdose actually had an opioid or substance use disorder. We have to remember to consider alternatives that provide access and that are appropriate and well regulated for people who are accessing the toxic drug market and don't necessarily meet that criteria.

The Chair: Thank you, Dr. Pauly.

Thank you, Mr. Johns.

Next we will go back to Dr. Ellis for five minutes.

Mr. Stephen Ellis: Thank you very much, Chair.

I know it's been a bit of an up-and-down meeting for the witnesses. I appreciate your patience with all of us.

Dr. Koivu, I'd like to go back to the concept of safe supply. Maybe you could, for the benefit of Canadians out there, talk a bit about the specific difference between opioid agonist therapy and safe supply. Of course, we know that opioid agonist therapy has a significant amount of scientific literature supporting it. Could you explain the difference? I think that would be important to Canadians.

Dr. Sharon Koivu: Thank you for that question.

Opioid agonist therapy is about having people on a treatment that can stabilize them neurochemically, having them not chase what we talked about earlier with withdrawal and really allowing for recovery. The two main types of opioid agonist therapy are methadone, which has been around for years, and buprenorphine. Buprenorphine was not available at the time the study in London was started.

Buprenorphine is a chemical, an opioid. As to how it works, as you increase the dose, you don't get an increase in negative effect. It is the drug most proven to decrease the risk of overdose. When people are on it, they have a decreased risk of overdose from taking it and from taking other substances.

Buprenorphine now comes in a daily sublingual formulation. It also comes in an injectable formulation that is usually referred to as Sublocade, which is given every four weeks. This is a game-changer because it allows people to get their lives back and get back to the community. Not having to worry about accessing a pharmacy daily is certainly helpful in remote communities as well. It provides a healing of the brain to allow people to have recovery and function normally.

Safer supply programs are about continuing to give opioids at doses that aren't witnessed. I think it's important to recognize that when people are started on methadone and Suboxone, we check what they're able to take. We understand their tolerance. We work with them as we're witnessing what they're taking and we know what they're taking. When people are started on safe supply, that is not the case.

I'm going to be a bit more specific about my own community. A dose can continue to go up without reflection on whether it's a safe dose for a person or a safe dose for the community. It's generally given to them on a daily basis. Sometimes it's every few days. Then the dose is escalated. In my community, generally that's at request, without any evidence that it's what they need. Even when there is evidence that they don't tolerate their dose, it isn't necessarily decreased.

People will continue to have to go to a pharmacy, usually on a daily basis. It means that they're continuing to, from a neurochemical perspective, chase withdrawal. It is about continuing somebody in an addiction. They're maintaining their addiction. They're being maintained in a state where they are addicted to the medication.

● (1810)

Mr. Stephen Ellis: Thank you very much for that, Dr. Koivu.

I have a final question. I'm not sure if you know the answer to this or not, Dr. Koivu.

Our understanding from other testimony is that the street price of Dilaudid at eight milligrams has dropped significantly, which is evidence—perhaps not scientific—of diversion. Is that the experience in your community as well? Maybe you could talk about the price.

Dr. Sharon Koivu: Absolutely.

It's a market-driven economy. As there has been more diversion and more available.... My understanding from patients and from living in the area is that in 2016, a D8 was about $20. If you're close to the supply—close to where more diversion takes place or the core of London—then it varies, but it's usually about one to two dollars. As you get farther away, it's more expensive.

It really is about supply and demand. As the supply has gone up and there's more and more Dilaudid available in London, and from the amount of tolerance people have compared to what they're prescribed, certainly the amount I'm hearing about.... The numbers are certainly over a million D8s in a year, and as that number has gone up, the price has definitely gone down.

The Chair: Thank you, Dr. Koivu.

[*Translation*]

We will now move on to the last speaker.

Ms. Brière, you have the floor for five minutes.

[*English*]

Mrs. Élisabeth Brière: Thank you, Mr. Chair, and thank you to all of our witnesses.

Dr. Hopkins, I have one question for you. What does supporting the voice of people who use drugs mean to you?

Dr. Carol Hopkins: Many people who are experts in their field have expertise and know the science behind their expertise. They publish. They know their work very well. We rely on them often for evidence so that we make informed decisions. We don't typically understand or give credit to the experience of living life every day with the types of conditions we're talking about: living with a dependency on opioids, having to survive the processes of coming to the right dosage for them and how people feel about that. Every person's being, their physical being, is different from every other person's. The type of medication needed, the amount of medication needed to address the issues of dependency, and the neurotransmitters that are significantly changed because of the types of drugs being used are all in the story of lived and living experience. It's a credible source of evidence.

If you listen to people who use drugs, you will find similarities. Whether you're talking to somebody in Vancouver's Downtown Eastside or somebody from a first nations community in northern Ontario, they've never met each other, but they will describe the same experiences of withdrawal. They'll talk about their tolerance of incremental increases to their addictions medicine. That's credible evidence.

Listening to their voices means that we give credit to people, not because of their status in life because they're using and not because we're judging them or discriminating against them. We're listening to them because they can tell us a real story that is mimicked across the country. That's important evidence. Listening to those voices is just as important, if not more substantial, to the decisions that need to be made about the health care system and the wraparound services that are provided to any population of people to ensure they can continue living life without the mental anguish and physical anguish that go with withdrawal.

People don't wake up every morning wanting to die. They get to those hopeless stages when we have opinions that form decisions and when we make decisions without looking at all the variables that impact something like we are talking about: safer supply and the toxic drug crisis. We can look at any one perspective and say that one perspective is credible evidence, and it may be, but if we don't look at it in the context of the determinants of health, for example, and how people learn to survive every day, then we're shortsighted and we end up making decisions as though we're God. Not one of us has the right to decide who gets to live, who is expendable and who should die.

● (1815)

[*Translation*]

Mrs. Élisabeth Brière: Thank you.

You say that every individual is different and needs to follow their own path.

Do you think that a more holistic approach, which includes the four pillars, is the best option for responding to the current overdose crisis?

[*English*]

Dr. Carol Hopkins: Absolutely. We need every tool and every strategy that is instrumental for ensuring life. Not one individual can live on this earth all by themselves. We live in relationship to others. We live in relationship to the land and the environment. We have to consider those elements and those four pillars.

We have a substance use strategy in Canada that includes harm reduction. Now we have to figure out what that means. We have to ensure harm reduction, but not only for individuals. We have to ensure we make decisions, policies, resources and programs that reduce harms to families and communities. That does not mean erasing the right to medicine, the right to mental wellness, the right to live and the right to the sacred breath of life. We have to provide and look at life from a holistic perspective. We can't afford to say, “You as a population don't have the right to life” or “You as a population, because you use drugs, don't have the right to health.”

The outcome of the UN declaration on the world drug problem—which Canada supported—was that, instead of a war on people, we had to ensure the right to prevention and treatment. Unfortunately, we couldn't get harm reduction in the declaration at that point. However, this year, the UN Commission on Narcotic Drugs had a vote that passed, putting harm reduction in international drug treaties. Now it matches what Canada has said, and we have to invest.

The Chair: Thank you, Dr. Hopkins, Dr. Pauly and Dr. Koivu.

When we invited you, we told you that we would have you out by 5:30. You've been very generous and patient with your time and very thoughtful in your presentations. Our study will be better because of your contributions. Thank you so much for being with us here today.

Is it the will of the committee to adjourn the meeting?

Some hon. members: Agreed.

The Chair: The meeting is adjourned.

NP Comment

Dr. Sharon Koivu: 'Safe supply' has only worsened the addiction crisis in London, Ont.

Since the program started in 2016, patient deaths and infections have shot up, and prescriptions have been diverted to the streets

Dr. Sharon Koivu, Special to National Post

Published Jun 10, 2024 • Last updated Jun 10, 2024 • 5 minute read

Join the conversation

A woman prepares to inject Dilaudid at her Windsor, Ont. residence on March 24, 2017. PHOTO BY DAN JANISSE/WINDSOR STAR

I have been a practicing physician in Ontario for 39 years, the last 16 of which have been in London. I have served in many capacities, including having a family practice and working as an acting medical officer of health. Since 2012, I have worked in addiction medicine. I feel compelled to speak out about the harm "safe supply" is causing in my community.

London is home to Canada's first "safe supply" program that started at London InterCommunity Health Centre in 2016. It was, in part, a response to a public health emergency of tricuspid valve endocarditis, HIV and hepatitis C related to the injection of hydromorphone capsules. The goal was to provide high-risk sex workers using these hydromorphone capsules with an alternative: short-acting hydromorphone tablets, also known as Dilaudid.

STORY CONT NUES BELOW

I lived close to the health centre, and I initially supported the program. We did not have a problem with illicit fentanyl at the time.

The program later expanded to include people potentially at risk of overdose from illicit drug use. Clients are often prescribed 30 to 40 Dilaudid pills per day, many of which are being diverted. This is fuelling the use of illicit fentanyl, which began appearing on the streets of London in 2018, leading to an increase in overdoses. I am repeatedly hearing disturbing stories that people with prescriptions are vulnerable to violence. Diversion appears to have shifted from being sold to individuals to being sold to organized crime as more is appearing in large amounts in police seizures.

It is also causing significant harm to the patients I serve. From 2012 to 2017, I rarely saw patients with spine infections. In the summer of 2017, I saw five patients in one month. The numbers continued to climb. The common thread among most of them was that they were injecting Dilaudid tablets. Most told me that they were buying diverted Dilaudid from clients of the "safe supply" program, while others were in the program directly.

A4769

I had patients who were housed, using clean equipment and only injecting Dilaudid, developing horrific infections. Spine infections cause perhaps the worst suffering I have ever seen. Not only are they unbearably painful, but they can also cause paraplegia or quadriplegia. Since 2017, I have been part of the care team in about 100 hospitalizations of people with injection drug-related spine infections.

In June of 2018, I had my first patient tell me that he had left his apartment to live in a tent near the pharmacy and "safe supply" clinic from which much diversion takes place. This was because "safe supply" pills were cheaper and more abundant near the source. After he moved to this encampment, he, too, developed a spine infection from injecting Dilaudid.

Over the past year, we have seen about one patient per month with a spine infection. Half of these were receiving a "safe supply" prescription and half reported buying diverted Dilaudid. About 30 people per month are admitted with another severe infection. Of patients admitted with opioid use disorder, 25 per cent were receiving a "safe supply" prescription and 25 per cent reported using diverted Dilaudid. Only four per cent of our consults were for an unintentional overdose.

The failure of "safe supply" was predictable. Purdue Pharma's OxyContin helped start the addiction crisis, and Dilaudid, which is also manufactured by Purdue, is an even stronger and more addictive

opioid. I and many of my addiction physician colleagues have been warning about the pending harms from the start.

Public Health Ontario data shows that the harms we've been warning about are very real. Prior to the start of the "safe supply" program, the Middlesex-London area was principally less than or equal to the provincial average rates for measured harms from opioid toxicity (i.e., emergency room visits, hospitalizations and deaths). Since the "safe supply" program started and expanded, the harms experienced in Middlesex-London have escalated substantially, beyond the rates experienced in the rest of the province.

The rate of death from opioid toxicity is of utmost concern. In 2014, Ontario had a rate of death from opioid toxicity at 4.9 per 100,000 people. Middlesex-London had a rate of death from opioid toxicity that was much less, at 2.8 per 100,000 people — that's 43 per cent lower than Ontario's average. In both 2015 and 2016, London and the province of Ontario experienced equal rates of death from opioid toxicity.

Since the onset of "safe supply," the rate of death from opioids has escalated at a much greater rate in Middlesex-London and has consistently remained higher than the Ontario rates. By 2022, opioid-related mortality in London had risen more than four times higher than the rate in 2015, 40 per cent higher than the rate for the province of Ontario.

This has particularly affected youth and young adults, ages 15 to 44. Lives lost in these age groups were generally less than the provincial average, but since "safe supply," they are much greater.

It has also been costly to the emergency department. In 2014, emergency department visits were lower than average. In 2015, they were five per cent higher in Middlesex-London than the rest of

Ontario. From 2020 to 2022, emergency department visits were, on average, 80 per cent higher. A9056

Interestingly, London Health Sciences Centre has a $76 million deficit even after receiving a $95 million bailout from Queen's Park. While hospital budgets are complex and multifactorial, this deficit parallels the expansion of London's "safe supply" program. Instead of saving health-care dollars, "safe supply" is costly.

Importantly, as I referenced previously, when "safe supply" started in 2016, we did not have a problem with illicit fentanyl in London. We do now. Many patients have told me they sell or trade much of their prescribed "safe supply" to buy fentanyl. Others, not in the program, have told me that their dealers have sold them fentanyl after claiming to be out of Dilaudid, starting them down that path.

Our hospital experience shows that "safe supply" is also preventing patients from choosing opioid agonist therapy and the opportunity for recovery.

Additionally, the percentage of people found to be positive for fentanyl at death has been very similar in Middlesex-London and the province of Ontario. However, in Middlesex-London, the percentage of people positive for hydromorphone has been 200 per cent higher than the provincial average.

The Public Health Ontario data is conclusive. "Safe supply" programs, evident from the London experience, are not effective at addressing illicit fentanyl or the tragic addiction crisis. "Safe supply" is not safe, and in fact, it substantially contributes to societal harm.

A4772

We need a comprehensive, collaborative recovery-focused approach to the addiction crisis, including the expansion of evidence-based treatments that do not contribute to harm. To prevent further harm, a moratorium on funding and expansion of "safe supply" programs must be put in place. Finally, those currently in "safe supply" programs need the support of an effective exit strategy.

National Post

Dr. Sharon Koivu has been a physician in Ontario for 39 years and worked as an addiction medicine consultant for 12. In addition to front-line health care, her career has spanned teaching, research, leadership and advocacy.

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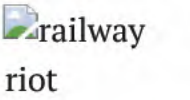
2 

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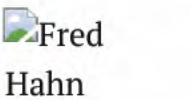
4 

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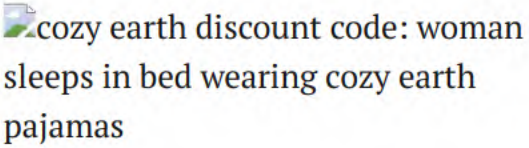

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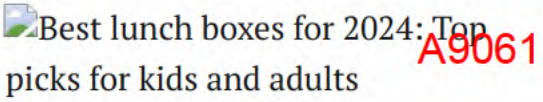
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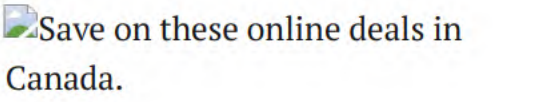
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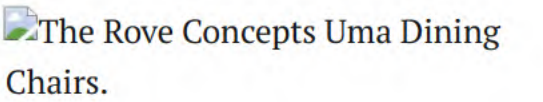
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Leading addiction doctor warns of Canada's 'safer supply' disaster

Addiction physician Dr. Sharon Koivu has seen the effects of safer supply programs in her clinical practice and personal life — and is sounding the alarm

by **Liam Hunt**
July 8, 2024

(Dreamstime)

Read: 4 min

Dr. Sharon Koivu, an addiction physician and parent, believes her son might not have survived

to adulthood if Canada's "safer supply" programs had been in effect during his adolescence.

Having worked on the front lines of Ontario's opioid crisis, she views these programs as a catastrophic failure.

In an extended interview, Koivu explained the unintended consequences of these programs, which offer free tablets of hydromorphone — an opioid about as strong as heroin — to vulnerable patients with a history of addiction. While advocates of safer supply claim these programs mitigate the use of more dangerous illicit substances, there is evidence that most users divert — that is, sell or trade — their hydromorphone to acquire stronger substances.

Safer supply was first piloted in London, Ont., in 2016, before being widely expanded across Canada in 2020 with the help of **generous federal grants**. While the program looked good on paper, Koivu, who provides addiction consultation services at a London-based hospital, saw a different reality: her patients were destabilizing, relapsing and fatally overdosing because of safer supply.

Koivu says that "one hundred percent" of her colleagues working in addiction medicine have noticed safer supply diversion. Some patients have told her they have been threatened with violence if they do not procure and divert these drugs. She estimates that, because of safer supply, tens of thousands of diverted hydromorphone pills — also known as "Dilaudid," "dillies" or "D8s" — are flooding into Canadian streets every day.

For context, just two or three of these pills, if snorted, are enough to induce an overdose in a new user.

This influx has caused the drug's street price to crash by as much as 95 per cent. While eight-milligram hydromorphone pills used to sell for $20 each several years ago, they can now be bought for as little as a dollar or two. These rock-bottom prices have ignited a new wave of addictions and relapses, and lured opioid-naive individuals into experimenting with what is essentially pharmaceutical heroin.

Koivu estimates that 80 per cent of her opioid-using patients now take diverted hydromorphone.

"The biggest harm is that we've turned on the tap and we've made everything cheap, which is leading to a large increase in the number of people becoming addicted and suffering," she said.

"It is the most serious issue that I've seen in my lifetime."

Safer supply programs seem to regularly overprescribe opioids without considering patients' actual needs, Koivu says. Patients have come into her hospital with prescriptions that provide 40 eight-milligram hydromorphone pills a day, even though they can only tolerate 10 pills.

'That attraction is horrific'

Throughout the first few decades of Koivu's career, almost "everyone" in her patient pool developed addictions due to childhood traumas or from mishandling opioids prescribed for chronic pain.

Since the advent of safer supply, the origins of new opioid addictions have shifted toward social or recreational exposure. Concerningly, this exposure often occurs in patients' adolescent years.

"I'm seeing an increase in youth becoming addicted," said Koivu, who has had patients as young as 15 tell her their addictions began through diverted hydromorphone.

"Almost everyone I see who's started since 2018 started recreationally. It started as something that was at a party. It's now a recreational drug at the youth level."

Parents often seem completely unaware of the problem. Some have told Koivu they overheard their children discussing the availability of "D8s" at their high schools, only to later realize — when it was too late — they were referring to opioids.

"You can't walk into your house with a six-pack of beer. If you're smoking weed, people can smell it. But you can walk into your house with a lot of [tablets] in your pocket. So, it's cheap, really easy to hide, and is even called 'safe' by the government. I think that attraction is horrific."

"Our youth are dying at a higher rate … and we have a lot more hydromorphone found in [their

bodies] at the time of death."

While safer supply programs claim to make communities safer, Koivu's lived experiences suggest the opposite. She used to reside in London's Old East Village, where the city's first safer supply program opened in 2016, but moved away after watching her neighbourhood deteriorate from widespread crime, overdoses and drug trafficking.

"I moved there to support a supervised injection site," said Koivu. "Then I watched that community drastically change when safer supply was implemented. … I would go for walks and directly see diversion taking place. Homelessness is very complicated, but this has absolutely fueled it in ways that are unconscionable."

Koivu characterizes the evidentiary standards used by advocates of safer supply as "deeply problematic." She says many of the studies supporting safer supply are qualitative — meaning they rely on interviews — and use anecdotal data from patients who have a vested interest in perpetuating the program.

While Koivu has been blowing the whistle on safer supply programs for years, her concerns largely went unnoticed until recently. She has faced years of harassment and denigration for her views.

"When I came to say I'm concerned about what I'm seeing: the infections, the suffering, the encampments … I was literally told that I was lying," she said.

Last month, the London Police Service provided the National Post with data showing that annual hydromorphone seizures **increased by 3,000 per cent** after access to safer supply was significantly expanded in 2020. The newspaper has since raised questions about why this data was not released earlier and whether the police stonewalled attempts to investigate the issue.

Koivu considers herself a lifelong progressive and has historically supported the New Democratic Party. But she is concerned many left-leaning politicians have ignored criticism of safer supply. Many seemingly believe that opposition to it is inherently conservative.

"I went to a hearing in Ottawa of a standing committee to talk about addiction," she said. "We

had five minutes to give a talk, and then two hours to answer questions, [but] I didn't receive any questions from the NDP or the Liberals."

Although Koivu believes safe supply can play a role in the continuum of care for opioid addiction, she says it must be executed in a meticulous manner that prevents diversion and emphasizes pathways to recovery.

"It needs to be part of a comprehensive strategy to help people get their lives back. And right now, it's not."

Above all, it is Koivu's experience as a mother that drives her to criticize safer supply. One of her sons struggled with addiction as a young adult. Although he eventually recovered, the experience could have killed him.

"Had this program been around … my family could have been another statistic from a drug death. That drives me. Because it's very real, and it's very personal."

Editor's Note: This article has been updated to say Dr. Sharon Koivu provides addiction consultation services at a London, Ont., hospital. An earlier version said she managed an addiction clinic at the hospital. We regret the error.

Ex # 4 m/d/y 09/06/2024 Pg 1 of 13

Exam of Dr. Sharon Koivu

Heegsma et al v City of Hamilton

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LILLEY: Addictions specialist calls on Ford to clean house at SRCHC

Safe injection site tied to shooting and arrest of suspect has lost the plot by refusing to offering addiction treatment and recovery.

Brian Lilley

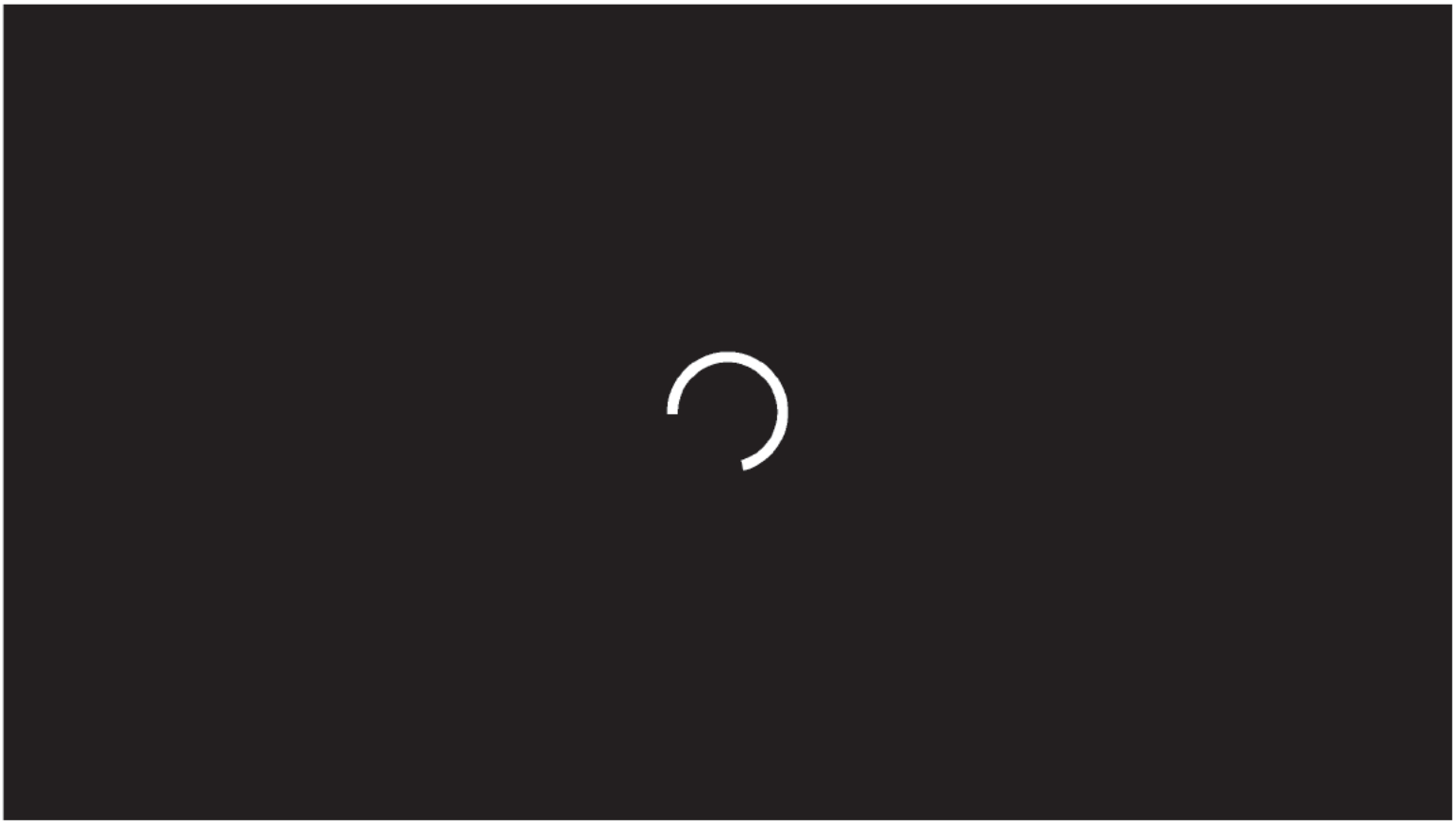
Published Aug 18, 2023 • 3 minute read

105 Comments

The South Riverdale Community Health Centre and safe injection site at 955 Queen St. E. on Friday, July 14, 2023. PHOTO BY JACK BOLAND /Toronto Sun

A doctor specializing in addictions says the ideology on display by the South Riverdale Community Health Centre shows it's time to replace the leadership of the organization. The

SRCHC has been in the news for all the wrong reasons lately, starting with a shooting that took the life of an innocent woman on July 7 and the arrest of one of their safe injection workers on charges related to that shooting earlier this week.



They are currently under review by both the Ontario Ministry of Health, and as has been confirmed to the *Toronto Sun*, by Health Canada which grants them an exemption to dispense opioids as part of a "safe supply" program. It's the centre's stated philosophy though that has one addictions specialist concerned and calling for changes.

Dr. Sharon Koivu, a physician who helped open a safe injection site in London, Ont., and has shepherded many clients to treatment and recovery, says the people at the top of SRCHC have lost sight of the real goal.

> Specifically, Dr. Koivu takes issue with the centre's philosophy published on the SRCHC website.

"It is a philosophy about being simply respectful of and to people who use drugs. No judgement, no expectations and no desire for people to stop using drugs," the SRCHC states.

"That is like a cancer doctor refusing to offer a patient chemotherapy because it might be uncomfortable," Dr. Koivu said.

She added that while treatment for addictions can be uncomfortable and painful at times, they save lives and that should be the focus of organizations dealing with addicts, not just

keeping them addicted. Dr. Koivu said the entire reason for bringing safe injection sites into being was to help guide people towards treatment, something the SRCHC policy would appear to abandon.

"With this policy, South Riverdale Community Health Centre is not working to improve lives," Dr. Koivu said. "They are promoting a dependency on a service that should be meant to help them."

The philosophy, which has been posted to the organizations social media accounts and printed on official materials, is also contrary to provincial regulations for what the government calls "Consumption and Treatment" sites. According to provincial rules, such sites are required to offer "onsite or defined pathways to addictions treatment services."

The latest annual report issued by the centre boasts about the 868 visits per month for "safe drug consumption" with 129 overdoses reversed, just two calls to EMS and no calls to police. What the centre doesn't boast about is how many clients were directed to an addiction treatment or recovery program.

This philosophical break from provincial regulations and best practices for such sites should be enough to shut this facility down. If the Ford government isn't ready to go that far, they need to force out CEO Jason Altenberg, the entirety of the senior leadership in the harm reduction programs and demand the resignations of board members starting with chair Mike Wilson.

"There has to be a complete change in leadership," Dr. Koivu said, adding that some community level workers may need to be replaced as well.

"Unfortunately, once people have drunk the Kool-Aid and think this is a good thing, it's hard to have the same workers recognizing the importance and value of facilitating a journey to recovery."

RECOMMENDED FROM EDITORIAL

LILLEY: Doug Ford needs to shut down or take over safe injection site

Ontario Premier Doug Ford has long been skeptical of safe injection sites and capped the number in the province at 21. He's spoken out in favour of more treatment, something that clearly goes against the philosophy of the SRCHC, and many other activists on this file.

Seems some of those activists are deeply embedded in Ontario's Ministry of Health where multiple sources claim the health bureaucracy is pushing back against requests for options and action from Health Minister Sylvia Jones.

The Ford government, including the premier and minister Jones, need to find the strength

to do the right thing and either shut this facility down or fire everyone at the top. Anything short of that sends the message to the other facilities that following the rules and helping people get into treatment is no longer a priority.

The people of Ontario deserve better.

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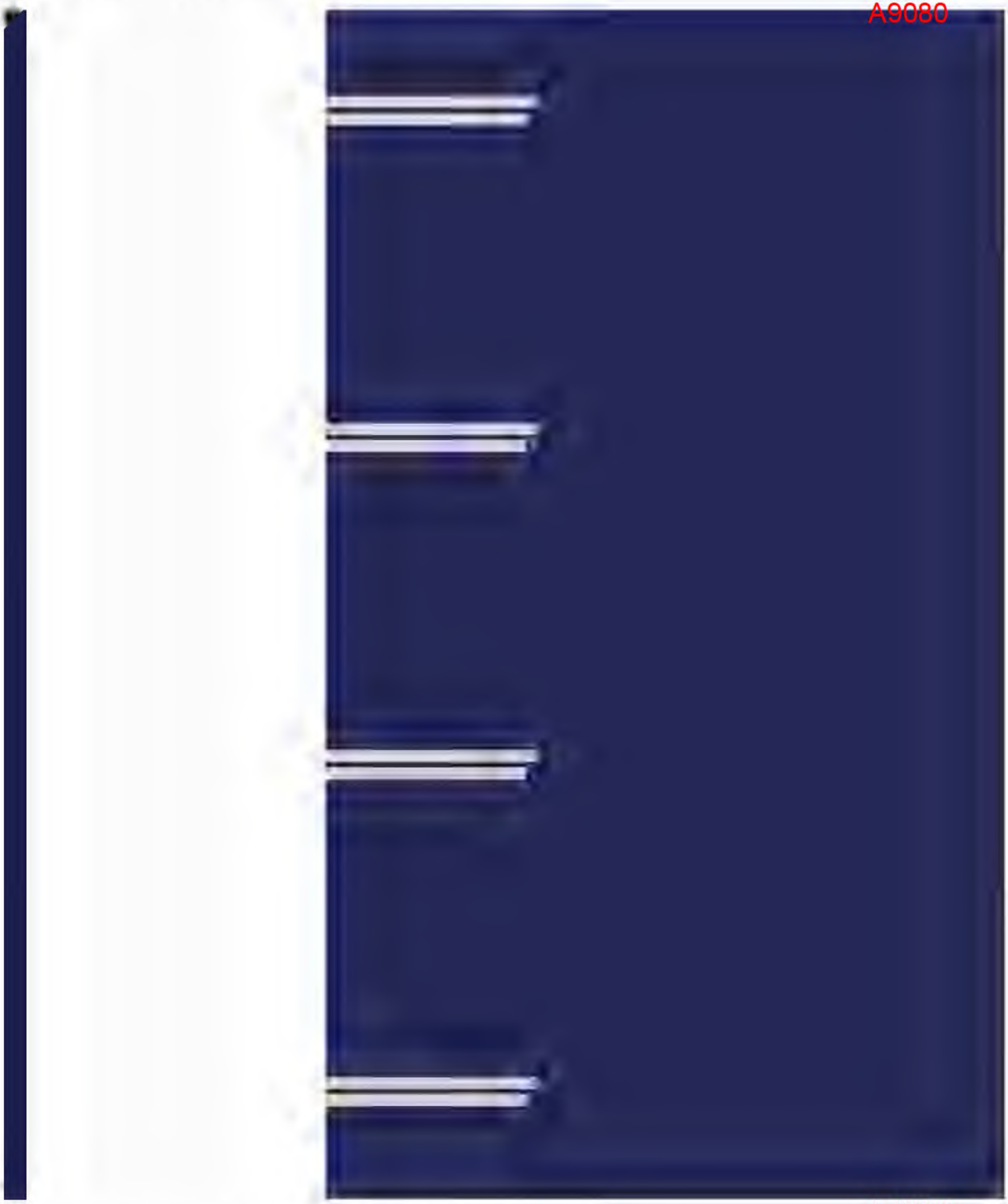
A4795



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Exam of Dr. Sharon Koivu

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News / Local News

Harms of safe drug supply program outweigh benefits: Addictions specialist

A London doctor at the centre of a national political debate over opioid programs says she had no intention of becoming a talking point for the federal Conservative party.

Randy Richmond

Pub shed May 20, 2023 • Last updated May 20, 2023 • 4 m nute read

Jo n the conversat on

(F e photo/Postmed a Network)

A4798

A London doctor at the centre of a national political debate over opioid programs says she had no intention of becoming a talking point for the federal Conservative party.

But remaining silent isn't an option in the face of evidence the program is harming people, says Sharon Koivu, an addictions specialist and researcher at London Health Sciences Centre.

"I've done a lot of work in social justice, advocacy work, for essentially all my life. So, I've never been associated with anything right wing. I don't consider my position to be a political one, just a voice of concerns for the suffering that I've seen," Koivu told The London Free Press.

Koivu's views on London's safer supply program recently were published in a National Post story and reiterated in recent attacks from Conservative Leader Pierre Poilievre on the federal Liberal addictions policies.

Poilievre introduced a motion in the House of Commons Thursday calling for an end to safe supply programs in Canada, saying funding should go to treatment instead.

"Crime and chaos, drugs and disorder rage in our streets. Nowhere is this worse than in the opioid overdose crisis that has expanded so dramatically in the last several years," Poilievre said.

The opioid crisis claimed 34,455 lives in Canada from 2016 to September 2022, according to the latest Health Canada figures, with most of the deaths attributed to toxic street supplies of fentanyl that often include crystal meth and cocaine, Health Canada says.

About 473 people have died from opioid-related problems in London and surrounding Middlesex County from 2016 to the middle of 2022, with annual deaths increasing from 30 in 2016 to 130 in 2021, according to Public Health Ontario.

The safer opioid supply (SOS) program at the London InterCommunity Health Centre began in 2016 with a small group of street level sex workers and has increased to about 300 patients. The program provides patients with pharmaceutical grade hydromorphone, in the form of Dilaudid pills, so they can avoid dangerous street drugs.

Research has shown safer supply programs can keep patients healthier as they work to their individual goals around addiction. A study released last fall concluded London SOS patients had fewer infections than people injecting drugs who were not in the program.

But Koivu said since London's safer opioid supply program began in 2016, the rates of infections in her patients and deaths among injection drug users have gone up. Dilaudid also has fuelled an increase in the use of fentanyl, including among younger people, and homelessness in London, Koivu contends.

"I believe the harms of the program outweigh the benefits. I believe the harms of putting all this money into the program at the expense of other programs outweighs the benefits. I want people to discuss it and decide as a society what's best," she said.

Safe supply supporters say they have research that shows the programs save lives and help people to stop injecting drugs, and in some cases, stop using at all.

Opponents have no statistics to back up their claims, supporters say.

RECOMMENDED FROM EDITORIAL

Poilievre slams 'so-called experts' pushing for government-funded supply of drugs to stop opioid crisis

Koivu questioned the research methods backing safe supply and said some statistics show at least a possible link between Dilaudid use and infections.

A9085

The rate and number of invasive infections among people with opioid use disorders in London has jumped since 2016, while rates in Toronto and Ottawa have increased at a much smaller rate, she said, citing records from the Office of the Chief Coroner of Ontario.

Koivu said she was an early supporter of the safe supply program when it first started.

"But I began seeing a significant increase in infections that were related to injection drug use, and specifically infections of the spine, some of them leading to some very significant consequences: paraplegia and quadriplegia. Eighty to 90 per cent of the patients with these infections were injecting Dilaudid," she said.

"The majority of the patients I saw were telling me they were buying diverted Dilaudid and that they were thinking it was safe."

She counted more than 100 patients with the infections in 2017, the first year after the safe supply program began, Koivu said.

She suspects Dilaudid crushed and injected contains particles in the suspension that cause damage to blood vessels, but doesn't have the research to back that up, or the research dollars to find out, Koivu said.

Dilaudid also leads to people seeking a greater high, and that has led to the spread of the more powerful fentanyl in London, she said.

"A lot of places where fentanyl is a problem also have safe supply programs. Trying to fix the problem of fentanyl by throwing more drugs at it is not working. It's not working for the people in the program, and it's not working for the community."

STORY CONTINUES BELOW

A leading drug researcher and a London streetfront doctor are firing back at a recent surge of criticism – echoed by a city councillor and the leader of the Conservative party – about safer opioid supply programs: https://t.co/gwJzgViu3z#LdnOnt #cdnpoli

— London Free Press (@LFPress) May 18, 2023

The impact of Dilaudid and fentanyl has led to more people becoming homeless, with many people choosing to live in encampments close to the safe supply program at LIHC where they can buy diverted supplies, she said.

A4801

Supporters of safe supply refute pretty much all of what Koivu says.

London's problem with homelessness has much do with an acute lack of shelter and supportive housing – both targets of a new community strategy developed over the winter – safe supply supporters say.

There's no empirical evidence of diversion being a large problem or Dilaudid causing infections, they say.

Meanwhile, Koivu is calling for a moratorium on funding until there's more public discussion of the programs.

Koivus said she approached local NDP and Liberal MPs, who considered her opinions, but can't get her message beyond them to party leaders.

Without the support from other parties, Poilievre's motion is bound to fail in a vote in the Commons.

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Mortality Among Unsheltered Homeless Adults in Boston, Massachusetts, 2000-2009

Jill S. Roncarati, ScD, MPH, PA-C; Travis P. Baggett, MD, MPH; James J. O'Connell, MD; Stephen W. Hwang, MD, MPH; E. Francis Cook, ScD; Nancy Krieger, PhD; Glorian Sorensen, PhD, MPH

Invited Commentary page 1248

Supplemental content

IMPORTANCE Previous studies have shown high mortality rates among homeless people in general, but little is known about the patterns of mortality among "rough sleepers," the subgroup of unsheltered urban homeless people who avoid emergency shelters and primarily sleep outside.

OBJECTIVES To assess the mortality rates and causes of death for a cohort of unsheltered homeless adults from Boston, Massachusetts.

DESIGN, SETTING, AND PARTICIPANTS A 10-year prospective cohort study (2000-2009) of 445 unsheltered homeless adults in Boston, Massachusetts, who were seen during daytime street and overnight van clinical visits performed by the Boston Health Care for the Homeless Program's Street Team during 2000. Data used to describe the unsheltered homeless cohort and to document causes of death were gathered from clinical encounters, medical records, the National Death Index, and the Massachusetts Department of Public Health death occurrence files. The study data set was linked to the death occurrence files by using a probabilistic record linkage program to confirm the deaths. Data analysis was performed from May 1, 2015, to September 6, 2016.

EXPOSURE Being unsheltered in an urban setting.

MAIN OUTCOMES AND MEASURES Age-standardized all-cause and cause-specific mortality rates and age-stratified incident rate ratios that were calculated for the unsheltered adult cohort using 2 comparison groups: the nonhomeless Massachusetts adult population and an adult homeless cohort from Boston who slept primarily in shelters.

RESULTS Of 445 unsheltered adults in the study cohort, the mean (SD) age at enrollment was 44 (11.4) years, 299 participants (67.2%) were non-Hispanic white, and 72.4% were men. Among the 134 individuals who died, the mean (SD) age at death was 53 (11.4) years. The all-cause mortality rate for the unsheltered cohort was almost 10 times higher than that of the Massachusetts population (standardized mortality rate, 9.8; 95% CI, 8.2-11.5) and nearly 3 times higher than that of the adult homeless cohort (standardized mortality rate, 2.7; 95% CI, 2.3-3.2). Non-Hispanic black individuals had more than half the rate of death compared with non-Hispanic white individuals, with a rate ratio of 0.4 (95% CI, 0.2-0.7; $P < .001$). The most common causes of death were noncommunicable diseases (eg, cancer and heart disease), alcohol use disorder, and chronic liver disease.

CONCLUSIONS AND RELEVANCE Mortality rates for unsheltered homeless adults in this study were higher than those for the Massachusetts adult population and a sheltered adult homeless cohort with equivalent services. This study suggests that this distinct subpopulation of homeless people merits special attention to meet their unique clinical and psychosocial needs.

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Published online July 30, 2018.

A paucity of literature exists regarding the health status of unsheltered, urban homeless adults, also known as "rough sleepers." These elusive, yet highly visible unsheltered individuals eschew organized shelters and choose to sleep on park benches, in back alleyways, in doorways, under bridges, near train stations, and in abandoned cars.

In the United States, the unsheltered population constitutes more than a third of the overall homeless population, with an estimated 192 875 people sleeping unsheltered on a single night in January 2017.[1] Most of these individuals were men 24 years or older of white or non-Hispanic race/ethnicity.[1] Despite their visibility, this population wanders across our urban landscapes, and data on these individuals are difficult to gather. Previous studies of mortality have focused on the homeless population who primarily sleep in shelters, and these studies have found higher rates of death in homeless populations compared with nonhomeless populations.[2-9] Studies from the 1980s showed common causes of death to be from substance use disorders and unintentional injuries.[3-5] Studies from the 1990s revealed HIV/AIDS, when combined, to be a leading cause of death.[6,7] More recently, unintentional overdose was shown to have replaced HIV/AIDS as a leading cause of death in the homeless population.[10] Literature on the unsheltered population has shown that they have more risk factors for death, more behavioral health issues, more trauma, and poorer health than their sheltered counterparts.[11-13] However, these studies have not looked specifically at mortality outcomes for unsheltered individuals, whose unique blend of comorbidities and environmental exposures may place them at higher risk for death.

A better understanding of the demographics, mortality patterns, and causes of death among unsheltered individuals could inform social policy and clinical practice initiatives to improve outcomes in this vulnerable population. To address the current gap in the literature about this unique subpopulation, we conducted a 10-year, prospective cohort study using an unsheltered cohort from Boston, Massachusetts, that was established in 2000 and followed up through the end of 2009. We described the unsheltered cohort, examined causes of death, and calculated age-specific rate ratios and age-standardized all-cause and cause-specific mortality rates and compared this cohort with both the nonhomeless adult population living in Massachusetts and a cohort of homeless adults living in Boston who primarily slept in emergency shelters. We hypothesized that the unsheltered cohort would have higher all-cause and cause-specific mortality rates than the nonhomeless and sheltered homeless populations, and that those unsheltered homeless individuals would die prematurely from common but preventable and treatable causes, such as cancer, heart disease, and substance use disorders.

Key Points

Question What are the mortality patterns for unsheltered homeless adults who primarily sleep outdoors?

Findings In this 10-year cohort study of 445 unsheltered homeless adults, the age-standardized all-cause mortality rate was almost 3-fold larger than that for a cohort of homeless adults primarily sleeping in shelters and nearly 10-fold larger than that for the adult population of Massachusetts; both represented significant differences. Common causes of death were cancer and heart disease.

Meaning Interventions and models of care need to address the unique needs of the unsheltered homeless adult population to improve outcomes.

Methods

Study Population

The study population consisted of adults living outside who were primary care patients of the Boston Health Care for the Homeless Program's (BHCHP's) Street Team. Eligibility criteria for the study included the following: (1) sleeping outside for 1 or more nights during 2000; (2) 18 years or older by January 1, 2000; (3) at least 1 face-to-face encounter with the BHCHP's Street Team staff during 2000; and (4) a first and last name and either a date of birth or a Social Security number in the study database. Participants were excluded if there was a lack of identifying information in the study database. Of 568 records in the BHCHP's Street Team database, 445 unsheltered adults (78.3%) met the eligibility criteria. The study was approved by the institutional review board of Boston University Medical Center, Boston, Massachusetts. Participant informed consent was waived by BHCHP. The study posed minimal risk to privacy.

Study Design and Data Collection

We conducted a 10-year prospective study from January 1, 2000, through December 31, 2009. Data analysis was performed from May 1, 2015, to September 6, 2016. Data from face-to-face encounters with the BHCHP's Street Team were used for the study and stored prospectively. Face-to-face encounters for primary care consisted of a BHCHP's Street Team clinician meeting an unsheltered individual on the street or at an outside location during a daytime or nighttime clinical session. The clinicians of the BHCHP's Street Team documented these encounters on paper at the time of the visit and the notes were later transcribed by a research assistant into a database (Microsoft Office Access; Microsoft Corporation). Data collected at the initial and subsequent visits included the following information: first and last names, date and location of the encounter, date of birth, Social Security number, sex, race/ethnicity, medical and behavioral health diagnoses, and the name of the clinician performing the visit. Any new data, such as a date of death, was added to the database. The cohort had no known duplicates, and no individual was added to the cohort after December 31, 2000. Everyone in the cohort was alive at the time of enrollment.

After the study concluded, the database was matched to BHCHP's electronic medical record to confirm data such as the correct spelling of the first and last name, sex, race/ethnicity, date of birth, and Social Security number. The records were then matched with the Massachusetts Department of Public Health death occurrence files from 2000 to 2009 (received on CD from Massachusetts Department of Public Health; November 3, 2014) in the manner described below to confirm deaths, add the dates of deaths if they were previously unknown, and

add the underlying and multiple causes of death. Over the course of the study, reports were requested from the National Death Index[14] in 2006 and in 2011 to investigate the possibility of a death occurring outside the state for a proportion of the cohort whose whereabouts were unknown. Data extracted from the National Death Index[14] reports included the date of death, the state in which death occurred, and the underlying and multiple causes of death.

All data describing the causes of death were in the format of the *International Statistical Classification of Diseases and Related Health Problems, Tenth Edition* (*ICD-10*) diagnosis codes. The data identifying the underlying and multiple causes of death taken from the Massachusetts Department of Public Health and the National Death Index[14] were previously processed by the National Center for Health Statistics using well-established computer algorithms to select the underlying cause of death from conditions reported on death certificates. Underlying causes of death codes were used for this study and grouped based on previous literature.[7,10,15,16] Definitions of codes from the Centers for Disease Control and Prevention (CDC) Wide-Ranging Online Data for Epidemiologic Research (WONDER) were also used for interpretation of the *ICD-10* codes.[17] The *ICD-10* groupings, terminology, and definitions used to combine the *ICD-10* categories can be found in the eTable in the Supplement.

Race/ethnicity categories created by BHCHP were as follows: non-Hispanic white, non-Hispanic black, and persons of color/unknown identified as Asian, Hispanic, American Indian, or unknown race/ethnicity. Age categories included 18 to 44 years, 45 to 64 years, and 65 to 84 years. Sex was dichotomous without unknowns. There were 2 variables with missing data: Social Security number was missing in 15 of 445 records (3.4%) and race/ethnicity, 7 of 445 records (1.6%).

Comparison Groups

Two comparison groups (the Massachusetts population and a sheltered homeless cohort from Boston) were used to calculate the standardized mortality ratios (SMRs). Data for the Massachusetts population were taken from the CDC's WONDER for ages 18 to 84 years from 2000-2009. The Massachusetts population was chosen as a comparison group because our study methods were analogous to methods used in a 2013 study by Baggett et al,[10] who also used the Massachusetts population as a comparison group.

Data for the adult homeless cohort were obtained from the 2013 study by Baggett et al.[10] They retrospectively assembled a homeless cohort of 28 033 adults 18 years or older who had 1 or more encounters with a BHCHP clinician between January 1, 2003, and December 31, 2008.[10] The comparison cohort included homeless adults who were seen by BHCHP from 2003 to 2008.[10]

Matching Data

Link Plus 2.0, a probabilistic record linkage program developed at the CDC Division of Cancer Prevention and Control in support of the CDC's National Program of Cancer Registries, was used to match BHCHP's data to the Massachusetts Department of Public Health data. Each match was manually reviewed. A death record was accepted as a match if it had the same data on 1 or more of the following: Social Security number; first and last name and month and year of birth within a range of 1 year; or first and last name and month and day of birth.[7,10,14] The algorithm was similar to that used by the National Death Index[14] to match records and has been reliably used by previous researchers who studied mortality among homeless populations.[7,10,14]

Statistical Analysis

We described the demographic characteristics of the unsheltered cohort overall and by subgroups, including sex and vital status (whether the cohort member was alive or dead and information about the decedent). Among those in the cohort who died, we noted the place of death and whether an autopsy was performed.

Crude mortality rates for all-cause and cause-specific mortality were calculated using the number of deaths in each category divided by person-years of observation for that category to create incident rates, expressed as events per 100 000 person-years. Strata-specific incident rate ratios were calculated by taking one crude mortality rate within a stratum and dividing it by another crude mortality rate within the same stratum. For rate ratios, women, non-Hispanic white, and the young age category (18-44 years) were used as reference groups.

Age-standardized all-cause and cause-specific mortality rates were calculated using indirect standardization, with the unsheltered cohort as the standard population. The SMRs were calculated as follows: by creating age-specific mortality rates per person-year for young (18-44 years), middle (45-64 years), and old age (65-84 years) categories for both the Massachusetts population and the adult homeless cohort; by multiplying the age-specific mortality rates by the age-specific person-years from the unsheltered cohort; by summing the 3 age-specific results to determine the expected number of deaths; and then by dividing the number of observed deaths by the number of expected deaths. The SMRs were calculated when the number of deaths in a category was 5 or more.[15]

Statistical analyses were performed using Stata, version 14 (StataCorp) and Microsoft Excel 2013 (Microsoft Corporation) and consisted of calculating incidence rates, rate ratios, and SMRs. Corresponding 95% CIs for rates and ratios were calculated using OpenEpi (Open Source Epidemiologic Statistics for Public Health), version 3.01.[18] A 2-sided significance level of <.05 was used for testing.

Results

Cohort Characteristics

The study cohort comprised 445 unique unsheltered adults who were followed for a total of 3608.7 person-years (mean, 8.2 years; range 0.1-9.9 years). The mean (SD) age at enrollment was 44 (11.4) years with a range of 18 to 81 years. Of 445 participants in the cohort, 299 (67.2%) were non-Hispanic white and 322 (72.4%) were men (**Table 1**).

Decedent Characteristics

Of the 445 unsheltered adults, 134 died during the study period. A total of 122 deaths were confirmed through linkage with the Massachusetts Department of Public Health data, and an additional 12 records were manually matched to the National Death

Table 1. Characteristics of the Unsheltered Cohort, 2000-2009

Characteristic	No. (%)					
	Unsheltered Adult Homeless Cohort				Sheltered Adult Homeless Cohort ≥18 y (n = 28 033)[a]	MA 2000 Census Population ≥18 y (n = 4 849 033)[b]
	Full Cohort (N = 445)	Men (n = 322)	Women (n = 123)	Decedents (n = 134)		
Age, y						
18-44	248 (55.7)	165 (51.2)	83 (67.5)	56 (41.8)	17 298 (61.8)	2 569 111 (53.0)
45-64	176 (39.6)	140 (43.5)	36 (29.3)	65 (48.5)	9924 (35.4)	1 419 760 (29.3)
≥65	21 (4.7)	17 (5.3)	4 (3.3)	13 (9.7)	811 (2.8)	860 162 (17.7)
Race/ethnicity						
Non-Hispanic white	299 (67.2)	223 (69.3)	76 (61.8)	108 (80.6)	11 912 (42.5)	4 180 644 (86.1)
Non-Hispanic black	94 (21.1)	62 (19.3)	32 (26.0)	15 (11.2)	8066 (28.8)	236 027 (4.9)
Persons of color or unknown[c]	52 (11.7)	37 (11.5)	15 (12.2)	11 (8.2)	8055 (28.7)	432 362 (8.9)
Sex						
Men	322 (72.4)	NA	NA	116 (86.6)	18 612 (66.4)	2 289 671 (47.2)
Women	123 (27.6)	NA	NA	18 (13.4)	9421 (33.6)	2 559 362 (52.8)

Abbreviations: MA, Massachusetts; NA, not applicable.

[a] Adult homeless cohort from the study by Baggett et al.[10]

[b] Based on US Census Bureau data.[19]

[c] Individuals who identified as Asian, Hispanic, American Indian, or whose race/ethnicity was unknown.

Table 2. Stratum-Specific Mortality Rates and Rate Ratios of Unsheltered Cohort, 2000-2009

Characteristic	Deaths, No. (%)	Person-Years, No.	Mortality Rate, Deaths per 100 000 Person-Years (95% CI)	Rate Ratio (95% CI)	*P* Value
Overall	134 (100)	3608.7	3713.2 (3110.9-4397.5)	NA	NA
Age, y					
18-44	56 (41.8)	2124.6	2635.8 (1990.7-3422.2)	1 [Reference]	NA
45-64	65 (48.5)	1350.3	4813.8 (3716.0-6136.9)	1.8 (1.3-2.7)	<.001
65-84	13 (9.7)	133.8	9715.9 (5165.6-16589.9)	3.7 (1.8-6.8)	<.001
Race/ethnicity					
Non-Hispanic white	108 (80.6)	2325.2	4644.7 (3810.5-5608.3)	1 [Reference]	NA
Non-Hispanic black	15 (11.2)	835.4	1795.5 (1005.4-2962.9)	0.4 (0.2-0.7)	<.001
Persons of color or unknown[a]	11 (8.2)	448.1	2455.1 (1225.7-4393.3)	0.5 (0.3-1.0)	.03
Sex					
Women	18 (13.4)	1130.6	1592.1 (943.2-2515.3)	1 [Reference]	NA
Men	116 (86.6)	2478.1	4681.0 (3868.2-5614.7)	2.9 (1.8-5.1)	<.001

Abbreviation: NA, not applicable.

[a] Individuals who identified as Asian, Hispanic, American Indian, or whose race/ethnicity was unknown.

Index[14] reports. The mean (SD) age at death was 53 (11.4) years. Of the 134 decedents, 116 (86.6%) were men and 108 (80.6%) were non-Hispanic white. A mean (SD) of 13 (3.4) deaths per year occurred throughout the study. Most deaths (87 of 134 [64.9%]) occurred inside a health care facility (ie, inpatient wards, outpatient clinics, emergency departments, and nursing homes), and 48 (35.8%) resulted in an autopsy.

Mortality Rates

The crude mortality rate overall was 3713.2 (95% CI, 3110.9-4397.5) deaths per 100 000 person-years (**Table 2**). The race/ethnicity specific mortality rate ratio for non-Hispanic blacks was 0.4 times the rate ratio of death for non-Hispanic whites (95% CI, 0.2-0.7; $P < .001$) (Table 2). The SMR for the unsheltered cohort was 9.8 (95% CI, 8.2-11.5) relative to the Massachusetts population and 2.7 (95%CI, 2.3-3.2) relative to the sheltered adult homeless cohort (**Table 3**).

Causes of Death

Thirty-nine deaths (29.1%) were directly attributable to substance use disorders and unintentional overdose (Table 3). Nonpoisoning injuries represented 19 of the 134 deaths (14.2%). Mortality rates in the unsheltered cohort for HIV/AIDS (10 of 134 deaths [7.5%]) were considerably higher than rates in the Massachusetts population and in the sheltered adult homeless cohort, and SMRs were significantly elevated among the unsheltered cohort when compared with both the Massachusetts population (SMR, 63.8; 95% CI, 32.4-113.8) and the sheltered adult homeless cohort (SMR, 3.4; 95% CI, 1.7-6.0). The one exception was drug overdose, which did not differ between the unsheltered cohort and adult homeless cohort (SMR, 0.9; 95% CI, 0.4-1.7). No deaths occurred from diabetes or tuberculosis. External causes, such as suicide, homicide, and hypothermia, which were included in the nonpoisoning injury category, accounted for fewer than 5 deaths each.

Discussion

All-cause mortality rates in the unsheltered cohort were nearly 3 times greater than those in an adult homeless cohort and almost 10 times greater than in the Massachusetts population. Our cause-specific mortality findings underscore a high burden of substance

Table 3. Age-Standardized All-Cause and Cause-Specific Mortality Ratios for the Unsheltered Cohort (2000-2009) Compared With the Massachusetts Population (2000-2009) and With a Sheltered Adult Homeless Cohort (2003-2008)[a]

Underlying Cause of Death[b]	Overall Deaths, No. (%) (n = 134)	SMR (95% CI)[c]	
		Unsheltered Homeless Adults vs MA Population	Unsheltered vs Sheltered Homeless Adults
All causes for entire cohort	134 (100)	9.8 (8.2-11.5)	2.7 (2.3-3.2)
Natural causes			
Cancer	21 (15.7)	4.8 (3.1-7.3)	2.8 (1.8-4.2)
Heart diseases	18 (13.4)	6.4 (3.9-9.9)	2.4 (1.4-3.7)
Chronic substance use	16 (11.9)	88.9 (52.7-141.5)	4.2 (2.5-6.7)
Chronic liver disease	15 (11.2)	32.2 (18.7-51.9)	4.5 (2.6-7.3)
HIV/AIDS	10 (7.5)	63.8 (32.4-113.8)	3.4 (1.7-6.0)
Ill-defined conditions	5 (3.7)	26.8 (9.8-59.3)	NC
External causes			
Nonpoisoning injuries[d]	19 (14.2)	33.3 (20.7-51.1)	7.1 (4.4-11.0)
Drug overdose	8 (6.0)	14.1 (6.5-26.7)	0.9 (0.4-1.7)[e]
Substance use disorder causes	39 (29.1)	43.6 (31.4-58.9)	2.5 (1.8-3.3)
Alcohol use disorder	30 (22.4)	110.2 (75.7-155.3)	NC
Opioid use disorder	9 (6.7)	15.7 (7.6-28.8)	NC

Abbreviations: *ICD 10, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision*; MA, Massachusetts; NC, not calculated; SMR, standardized mortality ratio.

[a] Adult sheltered homeless cohort from the study by Baggett et al.[10]

[b] There were no unknown causes of death, and fewer than 5 deaths in each category were suppressed.

[c] The SMR was calculated when there were 5 or more deaths in each category.

[d] Nonpoisoning injuries (*ICD 10* diagnosis codes): transportation accidents (codes V01-V99), other external causes of accidental injuries (codes W00-X59, except X40-X49), and events of undetermined intent (codes Y20-Y34, except Y10-Y19). Methodology in combining the *ICD-10* categories were based on the Health of Boston 2014-2015 report.[15]

[e] The SMR was not significant.

use in this population. In addition to the deaths directly attributable to substance use, many of the deaths due to nonpoisoning injuries, which primarily included motor vehicle crashes, falls, and drownings, have been shown by previous researchers to be related to alcohol or other drug use.[20-22] The SMR for nonpoisoning injuries was high for the unsheltered cohort compared with the adult homeless cohort; these results may indicate a possibly greater risk of death for rough sleepers, but more research is warranted. Other common causes of death, such as cancer and heart disease, have a strong link to cigarette smoking, which is highly prevalent among homeless people.[20] To effectively decrease morbidity and mortality in the unsheltered population, it is necessary to have fully integrated clinical outreach teams to meet rough sleepers where they live on the streets in order to establish and maintain continuity of care.[13,23,24] Addiction treatment and recovery programs should be readily available, with treatment on demand to support motivation for action and prevent further morbidity and mortality. Future research should include harm reduction policies, such as managed alcohol programs or supervised injection sites within shelters and homeless programs, which might make shelters more tolerable for those who currently fear substance abuse withdrawal.[25,26]

Higher rates of death among non-Hispanic white individuals compared with non-Hispanic black individuals and persons of color have been consistently observed in previous studies of homeless persons, and the causes for this phenomenon are likely multifactorial.[2,4,5,7,8,10] Similarly, studies have shown that homeless men have higher rates of death than homeless women. Non-Hispanic white individuals and men, on average, have more economic resources than non-Hispanic black individuals and women and are less likely to have experienced adverse social and economic effects due to bias or discrimination.[27] Thus, non-Hispanic white individuals and men may, on average, have reached a higher threshold of comorbidities at the time that they become homeless compared with non-Hispanic black individuals and persons of color. Men, whether or not they are homeless, are at a higher risk of death at an earlier age than women because of risk-taking behaviors related to the male sex. However, more research with empirical data needs to be conducted to fully understand these disparities among the unsheltered homeless.

Limitations

Although the study was subject to some biases that we could not control, we believe the influences were minor. Some unsheltered adults living on the streets of Boston may not have been seen by BHCHP's Street Team during enrollment and were not included in the cohort, which created a potential selection bias toward those homeless adults who sought health services. Since Boston is a moderately sized city with an extensive network of outreach services provided by the BHCHP's Street Team and their community partners, the number of individuals not served by BHCHP during enrollment was likely to have been small. Additional bias could have occurred if someone entered the cohort and then traveled to another state and died while living in another state. Obtaining National Death Index[14] records improved our ability to detect deaths that occurred outside the state. The BHCHP's Street Team database contained 123 records with insufficient identifying information to be included in the study. These excluded individuals could be systematically different from individuals included in the study in important ways, such as their level of illness or the length of time that they were homeless. Based on our clinical experience, an alternative explanation was that most of these rec-

ords with insufficient identifying information were duplicate records of identified cohort members because a new record was opened, rather than an existing one updated, when identifiers were learned.

Additional limitations included a lack of information about individual comorbidities or the chronicity of being homeless before or during the observation period; both could have contributed to a more nuanced understanding of mortality risk in this population. Some causes of death were too rare to ascertain mortality rates. A larger cohort would be required to address this limitation in future studies. Some overlap of the 2 homeless cohorts may have occurred, but the overlap was believed to have been small because BHCHP's data on sleeping location from 2008 showed that the proportion of patients sleeping outside was small (1%-3%) and the time frames of the 2 cohorts were not exact. If there was overlap, estimates of mortality using the sheltered adult homeless cohort as a comparison would be conservative.

Choosing Massachusetts as a comparison population instead of Boston could be considered a limitation of the study; however, some of our methods were based on those used by Baggett et al[10] in their 2013 study, in which the Massachusetts population was the comparison group. In addition, during the time frame of the study, the age-adjusted, all-cause mortality rate in Boston (687 per 100 000 population) was only slightly higher than the age-adjusted, all-cause mortality rate for Massachusetts (669 per 100 000 population).[15,28] We anticipated that confounding by race/ethnicity would be minimal given that the study cohort was disproportionately of non-Hispanic white race/ethnicity as was the Massachusetts population.

Generalizability to cities outside Boston could be affected by difference in access to homeless shelters, health insurance, and health care. Boston guarantees each homeless person access to emergency homeless shelters each night.[29] Not every city across the United States makes this guarantee, and the homeless people accessing shelters in Boston may differ from the homeless accessing, or not accessing, shelters in another city. Most of Boston's shelters have few limits on the length of stay and have little to no requirements regarding sobriety. These shelters accept individuals struggling with alcohol and other drugs, an important factor in minimizing the number of unsheltered individuals in Boston. Shelters in many cities have limits on the length of stay or requirements for sobriety and do not allow individuals with active substance use disorders, which increases the number of homeless people living outside. Access to health care and health insurance were available to our cohort, but it was not uniform across the United States, particularly during the time of the study. These factors could influence mortality for those individuals sleeping outside in different locations and thereby influence the generalizability of our results. Our study provides important insights about mortality patterns in this previously overlooked group of highly vulnerable individuals.

Conclusions

Our study results showed that unsheltered adults had a higher all-cause mortality rate than a mostly sheltered homeless adult population in Boston, a finding that to our knowledge is not previously reported in the literature. The unsheltered cohort died at a relatively young age of both noncommunicable and substance-attributable causes of death. Access to a patient-centered, outreach service model with integrated medical and behavioral health care delivered directly to the unsheltered population is necessary to begin to address these disparities. A better understanding of the social and supportive services is necessary to augment an integrated outreach team. Services such as harm-reduction models; greater availability and access to substance use disorder treatment, including smoking cessation; and a continuum of housing models with flexible social services to meet individual needs for successful tenancies and improved health are also needed to ultimately improve health disparities borne by those sleeping outside.[30]

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Concept and design: Roncarati, O'Connell, Hwang, Cook, Krieger, Sorensen.
Acquisition, analysis, or interpretation of data: Roncarati, Baggett, Hwang, Krieger.
Drafting of the manuscript: Roncarati.
Critical revision of the manuscript for important intellectual content: All authors.
Statistical analysis: Roncarati, Cook.
Administrative, technical, or material support: Baggett, O'Connell.
Supervision: O'Connell, Hwang, Krieger, Sorensen.

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Invited Commentary

Death Among the Unsheltered Homeless
Hidden in Plain Sight

Michael Incze, MD, MSEd; Mitchell H. Katz, MD

In early 2018, a United Nations special rapporteur on adequate housing made headlines during an unofficial visit to San Francisco and Oakland, California, by comparing the living conditions for those people residing on the streets of these cities with what she had observed in Mumbai, India, and by calling this state of affairs a violation of international human rights law.[1] Indeed, it is hard to explain how, in one of the wealthiest regions of the world at a time of human history when the overall standard of living has never been higher, we have encampments of people living without toilets, sinks, showers, refrigerators, or cooking facilities.

Related article page 1242

There are an estimated 190 000 homeless persons in the United States living outside rather than in shelters, exposed to the elements, and removed from health care and case management resources.[2] In this issue of *JAMA Internal Medicine*, Roncarati et al[3] report the results of a 10-year prospective study of a cohort of unsheltered individuals in Boston, Massachusetts, that found a 3-fold increase in mortality for unshel-

City Council endorses Community Encampment Response Plan – Part of Health & Homelessness Whole of Community System Response

TUESDAY, JUNE 25, 2024

London City Council has endo sed the **Community Encampment Response Plan**, which is the emaining st ategy component of the Health and Homelessness Whole of Community System Response, following the p eviously endo sed **plan for highly supportive housing** and **plan for hubs offering transitional housing and health supports.**

The **Community Encampment Response Plan** is g ounded in a human ights based app oach that suppo ts individuals in encampments, and outlines t ansactional out each and t ansfo mational case management to suppo t an individual's pathway out of homelessness and into housing and indoo spaces. The Community Encampment Response Plan includes safety p otocols fo individuals living in encampments to suppo t wellness within encampments as well as the su ounding community.

The community led plan was developed in consultation and collabo ation with f ontline secto expe ts and leade ship, fi st esponde s, City of London staff, and with suppo t f om membe s of the community with lived and living expe ience. Du ing community engagement oppo tunities hosted in May, ove 200 Londone s joined in pe son community engagement sessions to lea n mo e about the plan and give feedback on its p oposed safety p otocols and guidelines.

"Cities ac oss Canada, as well as smalle communities, a e all dealing with the ealities of unshelte ed homelessness and encampments, and London's Community Encampment Response Plan does not simply acknowledge this ha sh eality, but p ovides a st ategy fo how we can manage the impacts and suppo t individuals to move indoo s th ough a balance of compassion, community safety, basic needs p ovisions, and inc easing ou housing supply." Mayo Josh Mo gan, City of London

"As we make p og ess towa d c eating and opening highly suppo tive housing p og ams and hubs within London, it's impo tant that the elationship building and suppo t wo k sta ts befo e opening those p og am doo s. The Community Encampment Response Plan outlines how this t ansfo mational out each wo ks, and how each intentional engagement with an individual living unshelte ed is to eventually suppo t a t ansition into housing." Chantelle McDonald, Di ecto of Se vice, London Ca es, Co Chai of Encampments St ategy Table

"The Community Encampment Response Plan is ooted in the p inciple that housing is a fundamental human ight and a c itical dete minant of health, and this is a fundamental shift in how we add ess homelessness in London. Anothe key element of the plan is out each wo ke s who can do the t ansfo mative

wo k of connecting individuals within encampments with tailo ed se vice pathways to help them move to safe and stable indoo spaces, whethe it is a shelte , a hub, o highly suppo tive housing.“ G eg Nash, Di ecto , Complex U ban Health, London Inte Community Health Cent e, Co Chai of Encampments St ategy Table

“The Community Encampment Response Plan is a key pa t the ove all Whole of Community Response st ategy in that it p ovides a balanced esponse to the encampment situation in London, ecognizing the need to focus on housing solutions while p oviding inte im safe and app op iate measu es that suppo t basic human needs until people can exit homelessness.” Kevin Dickins, Deputy City Manage , Social and Health Development, City of London

“The suppo ts p oposed in the Community Plan fo Encampments st engthen the Hubs Implementation Plan by helping unshelte ed individuals achieve a g eate state of health, wellbeing, and dignity than what is available today, so they can bette t ansition into Hubs, which a e spaces designed to enable the next steps towa d housing. This means individuals can be mo e eady than eve to continue thei jou neys towa d housing, whethe that be in p ivate ma ket, ent gea ed to income, suppo tive, highly suppo tive o othe wise.” Chuck Lazenby, Executive Di ecto , Unity P oject, and Co Chai of Hubs Implementation Table

About the Health and Homelessness Whole of Community System Response

London, like many cities in Canada, is facing a health and homelessness c isis. In 2023 Londone s came togethe f om o ganizations and secto s ac oss the city and developed the Health & Homelessness Whole of Community System Response a new way to suppo t the most ma ginalized Londone s expe iencing homelessness and educe st ain on ou health ca e and judicial systems. The app oach being implemented by the Whole of Community System Response is to help Londone s with the highest needs move safely inside; help them get stabilized, w ap a ound them with suppo ts, connect them to the ight type of housing, and help them stay housed.

City Council endo sed the Whole of Community System Response app oach in Ma ch of 2023. Since then, two hubs have been established, as well as 93 highly suppo tive housing units, with 50 mo e units in development, towa d a goal of 600 highly suppo tive housing units within th ee yea s. The City’s plans fo hubs and housing we e shaped by p evious community engagement sessions held in summe and fall of 2023.

Fo mo e info mation on the Whole of Community System Response, visit: **london.ca**

Last modified: Thu sday, July 04, 2024

NEWSROOM MENU

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Public notices

EXHIBIT “B”

As It Happens · Hometown Edition

This Ontario town is on a mission to end homelessness by 2027. Here's how it's going

Finding supportive housing made a world of difference for Sara Pepper. But she still sees gaps in the system

Sheena Goodyear · CBC Radio · Posted: Nov 05, 2025 5:14 PM EST | Last Updated: November 6

Listen to this article
Estimated 8 minutes

Sara Pepper is a formerly unhoused person in St. Thomas, Ont., who now runs a peer-support group focused on harm reduction. (Submitted by Sara Pepper)

This story is part of The Hometown Edition, a special series airing on CBC Radio's* As It Happens *Nov. 3-7, showcasing the struggles and triumphs of Canada's small towns. Listen here to learn more about what's happening in St. Thomas, Ont.

When Sara Pepper was living on the streets of St. Thomas, Ont., a few years back, she says there wasn't much in the way of support.

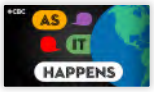
"It wasn't the place to be homeless, that's for sure," Pepper told *As It Happens* host Nil Köksal.

“There weren't a lot of open doors, not many services were offered and, socially, people just didn't understand it.”

Now, thanks to the town’s aggressive plan to end chronic homelessness, Pepper has a roof over her head and a warm bed to sleep in every night as she puts the pieces of her life back together.

And if things go according to plan, within two years, nobody will be living long-term on the streets of St. Thomas.

LISTEN | Full interview with Sara Pepper:



As It Happens **8:19**

A look inside an Ontario town's ambitious plan to end homelessness

St. Thomas is a city of about 46,000 in southwestern Ontario. For 44 years, the local Ford plant was the city’s main economic driver, until it closed in 2011.

Like many towns and cities across Canada, St. Thomas has found itself facing three overlapping crises: a housing shortage, an opioid epidemic, and surge of homelessness.

It used to keep Mayor Joe Preston up at night. But these days, with a Volkswagen electric battery plant on the way and an anti-homelessness plan showing tangible results, he tells Köksal, he’s feeling optimistic.

“We're on the cusp. We're moving forward,” Preston said. “We're solving a problem ahead of many other cities across Canada.”

- **Anonymously donated Spike Lee Air Jordans net $68K for Portland homeless shelter**
- **This woman was arrested for feeding homeless people. But she says she won't stop**

For roughly five years now, the city has been working on a strategy to get people off the streets and into housing, based on the Canadian Alliance to End Homelessness’ national Built For Zero program.

St. Thomas has partnered with the province, the feds, community organizations and non-profits to ramp up shelter spaces, but also quickly transition people out of shelters and into supportive housing with access services like counselling, health-care and more.

St. Thomas Mayor Joe Preston says the city is on track to meet its target of endling chronic homelessness within two years. (City of St. Thomas website)

Danielle Neilson, manager of housing stability services for the St. Thomas-Elgin region, says it's important to understand that while emergency shelters are important, they are not the solution to the homelessness crisis.

"That's somewhere that, in my humble opinion, we've gone wrong for decades," Neilson said. "The solution to homelessness has always been housing."

So far, it seems to be working.

Last year, St. Thomas announced it had reduced chronic homelessness — meaning people who are unhoused repeatedly or for an extended period of time — by 30 per cent.

The city says it will have enough shelter spaces this winter to accommodate the roughly 130 people who are still living in the streets.

What's more, it says it's on track to meet its goal of ending chronic homelessness in St. Thomas by 2027.

"We call it a 'functional' end to homelessness, because you can never stop it from happening," Neilson said. "But what you need to do is create a system where ... you've essentially cleared the bottleneck."

That means that, while people continue to fall into homelessness, they don't stay that way for long. It also also means the city can't rest on its laurels once it achieves its goal.

"We also know we can't stop there," she said. "[Or] you'll end up right back in the same bottleneck again."

Pepper's journey

Pepper has lived in a supportive housing unit for the last two years. Before that, she spent four years on the streets in St. Thomas.

It's not a life she ever would have expected for herself.

"I met cocaine, and that definitely sent me sideways," she said. "My marriage dissolved and that kind of thing, and I was on the street before I knew it."

Back then, the city's only overnight shelter, Inn Out Of The Cold, operated out of a church basement in winters only.

"We would go there, pull out our cot, we had to set up everything, and then have our sleep," Pepper said. "We had to be out of there by six o'clock, I believe it was, in the morning. It was pretty busy. Very exhausting."

The Station at 16 Queen Street in St. Thomas is a 45-unit highly supportive housing building constructed by charity developers Indwell. The city's mayor says two more similar projects will be completed by early next year to house more individuals (Indwell)

Today, things are looking brighter.

The Inn is now a year-round, 24-hour municipal emergency shelter, with its own dedicated space, that offers three meals a day and access to health care and mental health support.

Pepper, meanwhile, lives at The Station, a subsidized supportive housing complex built in 2023 and operated by Indwell, a charity developer the city has partnered with.

Having stable housing, she says, has made an “astronomical” difference in her life.

“Here, I can breathe a little bit. I'm guaranteed that I have meals. I have the space that I can plan my future, you know?” she said. "Spending every day trying to keep yourself even fed or warm or comfortable in places that you're not getting kicked out of, it's exhausting."

Indwell also opened The Railway City Lofts in 2021, which helps people who are coming directly out of homelessness by offering addiction support, behavioural therapy, health care and help with medication and meals.

The city is also working on building affordable homes, says Neilson, for people who are ready to transition out of supportive housing into something more independent, including tiny homes built by the local YMCA.

WATCH | Tiny homes a part of St. Thomas housing strategy:

Take a look inside affordable tiny homes in St. Thomas

▶ October 1 | 0:57

Project Tiny Hope is borne of a partnership between the YWCA St. Thomas-Elgin, Sanctuary Homes, and Doug Terry Homes. The homes offer an alternative to traditional affordable and supportive housing approaches. CBC News got a look inside the homes and spoke with Doug Terry and Shellie Chowns from Doug Terry Ltd. at the grand opening.

But one of the biggest differences Pepper has noticed over the last five years is a change in attitudes.

“People are more willing to help, people are more willing to ask if you're OK,” she said. “They seem to be coming back around to realizing that we're human beings.”

Still more to do

Despite all the progress she’s seen, Pepper says she still encounters barriers that make it hard for people to get a leg up.

“The biggest thing that I see is some kind of [missing] link between the people that are experiencing the homelessness and the people who are running the systems and programs. There's not a lot of people that have lived experience, not a lot of people that really can empathize because they've never been there, you know?” she said.

She’s calling on the city and Indwell and other services to offer more peer-led programs, and employ people who have experienced homelessness first-hand.

- **St. Thomas police dismantle homeless camp, frustrating some outreach workers**
- **St. Thomas needs a supervised drug consumption site, advocates say**

Natasha Thuemler, Indwell's regional director, says charity's staff come from "varying backgrounds of both lived and educational experiences."

"Organizationally, we aspire to maintain healthy therapeutic relationships with our residents so the disclosure of those personal experiences by staff are not always made public," Thuemler told CBC in an email.

"Our model of supportive housing also doesn't meet the needs of everyone.... Unfortunately, there are still system gaps so we work with sector partners and individuals to help advocate and ensure all people's health and housing needs get met."

This ramshackle shelter was built in the trees about a dozen feet away from the Thames River in London, Ont., a city near St. Thomas, in 2023. (Colin Butler/CBC)

Pepper knows first-hand the difference lived experience makes. She now volunteers with The Nameless, an anti-poverty mutual aid group in St Thomas, where she runs a peer-support group focused on harm reduction.

"They know that I get it. They don't feel judged," she said. "When they can speak freely and openly, then you have the opportunity to actually help them from every angle, because you know the whole story."

She is skeptical about whether St. Thomas will achieve its goal of ending chronic homelessness within the next two years.

But Indwell's newest housing project, she says, gives her hope.

The charity is currently in the process of transforming the empty Balaclava Public School into 78 supportive housing units.

"If it can be successful in getting the people into the apartments, and then helping the people to keep their apartments, then it could be perfect," Pepper said. "It really could happen."

Interviews with Sara Pepper and Joe Preseton produced by Sarah Jackson

students and teacher from Walkerton, Ont.

News - Canada - London

fugitive's appearance

News - World

U.S., is stepping down

Catharine Tunney

News - Politics

told Thorold cemetery won't accommodate Muslim burial

Desmond Brown

News - Canada - Hamilton

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News

EXHIBIT “C”

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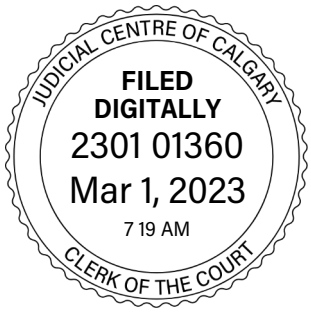

COURT FILE NUMBER: 2301 01360

COURT: COURT OF KING'S BENCH OF ALBERTA

JUDICIAL CENTRE: CALGARY

PLAINTIFF: OPHELIA BLACK

DEFENDANT: HIS MAJESTY THE KING IN RIGHT OF ALBERTA

QUESTIONING ON AFFIDAVIT SWORN FEBRUARY 21, 2023

OF

SHARON KOIVU

(VIA VIDEOCONFERENCE)
February 27, 2023

APPEARANCES

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Also Present:

Certified Stenographer:

Amanda Hebb, CSR(A)

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of
SHARON KOIVU
February 27, 2023

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Undertakings listed in this transcript are provided for your assistance only. Counsel's records may differ. Please check transcript to ensure that all undertakings have been listed according to your records.

(Videoconferencing Disclaimer: Due to the variations in internet connection, audio drops may occur for all parties, including the stenographer. Words or phrases may be missed, and therefore may not be transcribed.)

SHARON KOIVU, affirmed, questioned by Counsel A. Nanda commencing at 9:03 a.m.:

Q COUNSEL A. NANDA: What is your name?

A It's Sharon Koivu, Sharon Louise Koivu.

Q Are you the same Sharon Koivu that has provided an affidavit in Court of King's Bench of Alberta action number 2301 01360?

A Yes, I am.

Q And you provided this affidavit on February 21st, 2023; correct?

A Yes, that is correct.

Q Did you swear or affirm the affidavit?

A I swore the affidavit.

Q Okay. And you are being presented today as an expert in this proceeding; is that correct?

A Yes, it is.

Q What is the scope of your expertise?

A I think I have a very large scope. I've been in family medicine -- or in medicine for 37 years. Have worked as an acting medical officer of health, and I'm very familiar with harm reduction and health promotion and health

protection. I have worked as a palliative care physician and have seen many people who have died from infectious complications, injection drug use.

I've worked in chronic pain, and certainly lived through the opioid crisis. And I've worked in addiction since 2012. I have been the -- a consultant in addiction medicine at London Health Sciences Centre since 2012. I'm also a consultant in addiction medicine at St. Thomas Elgin General Hospital.

I've seen many people who are brought into hospital related to their problems with addiction, and I have been involved at Lawson Research doing a lot of research, particularly around the use of pills, tablets, and infectious complications and injection drug use.

Q Dr. Koivu, I meant for the purposes of your evidence in this proceeding, what is the scope of your expertise -- what -- what are you providing expert evidence on?

A I'm providing expert evidence on risks associated with injecting pills. I'm providing expert evidence on the risk of the safer supply program or the program of prescribing unwitnessed opioids. I am also an expert in

opioid agonist therapy and its benefits.
Q Okay. So are those the three things that you are here to present evidence on?
A I'm certainly here prepared to present evidence on those areas, yes.
Q Okay. And just to be clear, just because in your affidavit -- in paragraph 8 of your affidavit if you want to turn to that.
A Yes.
Q It says -- I think the first thing you mention in your previous answer that you're providing expert opinion on -- the first thing mentioned which is the risks and harm associated with -- well, you say the misuse of oral pills by injecting them, but injecting oral pills?
A Yes.
COUNSEL A. NANDA: Associated with -- sorry. Let's go off the record for a second.
(DISCUSSION OFF THE RECORD)
Q COUNSEL A. NANDA: So, Dr. Koivu, the first matter before -- within your expertise that you are opining upon in your evidence for this proceeding is the risks and harms associated with the plaintiff's use of oral pills; is that correct?
A Yes.
Q What is the second thing? I raise that because

you say as well -- you say: (As read)

> As well as several other matters contained in the plaintiff's affidavits.

So I just want to get clarity on what exactly you're here to provide expertise on.

COUNSEL N. GARTKE: I just want to make sure we're asking appropriate questions. If you're asking her what she was retained to provide an expert opinion on, she can answer that, but I think the answer to that you can get just by reading her report. If you're asking what we're going to seek to qualify her as an expert on, that's a matter of legal argument, and that's not for her to address. So I just want to make sure we're asking Dr. Koivu the question that she can actually answer.

Q COUNSEL A. NANDA: Yes. What is the scope of your expertise that you provided --

A I'm certainly -- I have expertise in the risks of injecting oral medication. I have expertise in harm reduction techniques. I have expertise in the use of opioid agonist therapy.

Q Sorry. Let's just -- I'm going to be very clear. It's the initial thing that your counsel just mentioned. Your expert report that you've provided attached as Exhibit B to

your affidavit --
A Yes.
Q -- what scope of expertise does that specifically address? So we've discussed the risks and harms associated with the use of oral pills or injecting oral pills?
A Yes.
Q What else?
A I guess I'm thinking I'm answering the question, and I'm not answering it to your satisfaction. I have expertise in how to -- I have expertise in harm reduction techniques. I have expertise in the use of opioid agonist therapy as it applies to this case.
Q Okay. And, again, I think we're talking the same, but in your answer you're indicating that you have this expertise in harm reduction techniques and opioid agonist treatment, and to be clear, those are the things that you opine about in your expert report?
A Yes.
Q Okay. So harm reduction techniques.
A Yes.
Q Opioid agonist treatment techniques?
A Yes.
Q Anything else?
A May I look at my affidavit?

Q Yes.
A And --
Q Absolutely. Yes. Absolutely.
A I have expertise in risks of toxicity and overdose. I have expertise in how opioids are used and how tolerance is developed. I have expertise in risks associated with diversion, risks associated with the use of oral pills including its bioavailability and overdose.
Q Okay. So can you list each thing that you're providing testimony on -- or expert testimony on again. So I have the risks and harms associated with injecting oral pills, harm reduction techniques, opioid agonist therapies. What else?

I raise this, Dr. Koivu, it's because your -- the body of your affidavit but also the title of your expert report talks about addressing harms and unintended side effects of injecting oral pills which --

A Yes.
Q I appreciate that that is your expertise. But then there's additional things mentioned, but they're not -- it's not clearly articulated that this is what you're addressing as an expert in your report. So for the Court and myself, we just want to know what exactly was

within your scope of expert opinion in the report.

COUNSEL N. GARTKE: Do you want her to run through, like, the titles and headings in her report? Would that be helpful?

COUNSEL A. NANDA: Whatever it is. Whatever it is. This is not, like -- this is not a trick question. I just want to understand this.

A Okay. I think I -- my expertise is both as being a physician and as an addiction physician. I also have specific experience from my lived experience of living in the area where the safe -- or supply in London was developed and was able to see firsthand what the effects of that were.

So I'm going to say my expertise includes the risk of injecting opioids in general including toxicity and overdose, risk of -- or I'm an expert in -- I'm very familiar with harm reduction techniques. I'm an expert in the risk of opioid tolerance, risk associated with diversion, risk associated with violence related to the program, risk of opioid misuse, including risk when injected in the bioavailability of oral pills compared to something intended to be injected. Risk of harm reduction techniques.

Q Okay. I have six things that you've mentioned, and I'm just going to run through them, and let me know if I'm missing anything. So the first thing is the risk and harms associated with injecting oral pills?
A Right.
Q Is that a scope -- with your scope of expertise?
A Yes.
Q Harm reduction techniques?
A Yes.
Q Opioid agonist therapies?
A Yes.
Q Risk of injecting opioids?
A Yes.
Q Risk of safe supply programs on neighbouring communities?
A Yes.
Q I think you mentioned something -- okay.
A And a risk of safer supply programs on other individuals in the community, so specifically on people purchasing diverted -- or having access to diverted opioids.
Q Okay. We'll kind of put that under the risk associated programs on neighbouring communities.
A Okay. That's fine.

Q And then risk associated around violence? What was that one. Sorry.
A Violence related to people in the program. So some of the risks of being in the program are about the risks of the drug and how the drug works itself. There are other risks that are associated with the vulnerability of having a prescription of highly sought after opioids when you're leaving a drug store or having them delivered, and the risk of violence associated with having a prescription.
Q So can I phrase that as the violence associated with opioid use and treatment?
A Yes, I think that would be fine to word it that way, yes.
Q And the last one -- I've got seven, actually. Risk of opioid misuse.
A Yes.
Q Okay. So I'll run those -- I just want to make sure we're on the same page. So the -- your scope of expertise that is provided in your expert report is the risks and harms associated with injecting oral pills, harm reduction techniques, opioid agonist therapies, risks of injecting opioids, risk of safe supply programs in neighbouring communities, the violence associated with opioid use and treatment, and

the risk of opioid misuse?
A Yes.
Q Yes. Those are the matters that you're here to provide expert evidence on?
A Yes.
Q Okay. And in preparation for today's questioning, what did you do?
A I -- in preparation for today's questioning, I read the affidavit from the plaintiff, I read the affidavit from her physician, as well as the affidavit from another physician whose name has escaped me right now who was an emergency physician and an addiction physician.

I also read notes regarding her medications that she had taken as well as there was some notes provided with me a summary of interactions that she had had between 2020 and 2022 with health care.

Q How many affidavits of --
A Of the plaintiff?
Q Yes. How many affidavits of the plaintiff did you read?
A There were a main affidavit and then two others; so a total of three affidavits that she provided.
Q How many affidavits of Dr. Bouman did you read?
A One.

Q How many affidavits of Dr. Gupta did you read?
A One.
Q Did you review the plaintiff's medical records prior to providing this expert report?
A I reviewed a summary of records that were provided to me.
Q In preparation -- sorry. In advance of --
A So in advance of?
Q In advance of --
A Yeah.
Q -- preparing your expert report?
A Yes.
COUNSEL A. NANDA: Okay. By way of undertaking, I would like a copy of that summary.
COUNSEL N. GARTKE: I'm going to take that under advisement. I think it might be privileged.
COUNSEL A. NANDA: Okay.

UNDERTAKING NO. 1:
PROVIDE THE SUMMARY OF RECORDS DR. KOIVU REVIEWED IN PREPARING HER EXPERT REPORT.
*** UNDER ADVISEMENT ***

Q COUNSEL A. NANDA: You didn't read the notes directly?
A No.
Q Any reason why you didn't?
A I was not provided with the notes. I was

provided with a summary.
Q You didn't ask for the notes in order to give an objective expert opinion on the treatment -- the plaintiff's treatment?
A The plaintiff's treatment? No, I wasn't. I did not ask for anything. I was provided with a summary. I believed that to be sufficient to address the area of expertise that I have.
Q You didn't think it was necessary to look at her complete charts?
A No.
Q Okay. And then have you read the -- any of the transcripts from the examinations?
A No, not at all.
Q Okay. So presently you are a consultant -- addictions medicine consultant; correct?
A Yes, that is correct.
Q What does that mean?
A It means that when people come into the hospitals that I work in with a substance use disorder and addiction, that I will be consulted to see them, to help deal with keeping them safe, keeping them out of withdrawal, working with them to where they are, working with them from a harm reduction perspective, and also working with them to get them on opioid agonist therapy if that is

indicated, and connecting them with community resources.

Q And you work primarily with inpatient populations?

A Yes, that is correct.

Q Do you work with outpatient populations?

A I have worked at a rapid access addiction medical clinic with outpatient populations, but only on an ad hoc basis. That is not my primary role.

Q What was the length of time you worked with that outpatient service?

A I've worked with it for a several-month period of time, but, again, only filling in for someone who is away.

Q How many shift -- sorry. Go ahead.

A I have not worked -- my number of shifts has been fairly minimal. I just cover -- I've covered the main physician when he's been out of the country.

Q Okay. So are we talking about ten shifts?

A About ten shifts, yes.

Q Okay. And that's the extent of your dealing or experience in working with outpatient populations receiving addictions treatment?

A That is the -- well, yes, my role is inpatient, absolutely.

Q Okay. Would you agree with me that in terms of treating inpatient and outpatient populations that it's a different approach to addictions medicine?
A Sorry. I missed -- I'm sorry. Can you clarify the question. I'm just not sure.
Q Sure. Would you agree that in addictions medicine that different strategies are taken to treat inpatient populations versus outpatient populations?
A There are both differences and similarities in the treatment of approaches.
Q And just for clarity's sake for the transcript, what is -- when we've heard of inpatient treatment or services, what does that mean?
A It means -- in-patients -- people who are actual admitted to the hospital -- hospital. They can be admitted with conditions that are related to their substance use such as an infection related to their substance use disorder, or they could be admitted for any other reason and have a substance use disorder. And to help take care of those patients, I would be consulted to see those patients to help them both in hospital and to have seamless care into the community.
Q And what is referred by outpatients or

outpatient medical --
A Outpatient medicine generally refers to people who are not admitted to hospital that are in the community and are not within a hospital setting.
Q Okay. Are you able to go to your expert report which is Exhibit B to your affidavit. I'll ask you some questions in relation to it.
Just the first paragraph talks about that the opinion below is based on your experience, research, education, and reviewing of pertinent literature.
A M-hm.
Q What specific literature did you review in preparation of this expert report?
A I reviewed literature related to risks of injection drug use -- or injecting pills including a study that was in both Finland and Australia. I also reviewed reports -- a report on safer supply programs both in London and in British Columbia. And certainly literature that's related to infectious complication of injection drug use, including my own, and other research that has been done related to infectious complications of infection drug use.
Q I noticed that you haven't attached any of this literature to your expert report. Is there any

reason?
A I'm sorry. I missed the -- I didn't.
Q Sorry. You did not attach any of these --
A The ones that are attached would be just the ones that I was involved in. I would be able to provide that information if that would be helpful.
Q Well, you know, for these expert reports, you tend to have to require to attach kind of the basis for your opinion including any academic literature. I just want to get a sense of, you know, what exactly you looked at, and -- well, how about this. Those sources that you just mentioned to me, did you review all those in preparation for this expert report?
A Yes.
COUNSEL A. NANDA: Okay. So I think by way of undertaking I want you to provide me those sources that you relied upon.
A Okay.
COUNSEL N. GARTKE: Yes, we can provide that undertaking.
COUNSEL A. NANDA: Okay.

UNDERTAKING NO. 2:
PROVIDE THE SOURCES AND LITERATURE DR. KOIVU RELIED ON IN HER EXPERT REPORT.

Q COUNSEL A. NANDA: I'll turn to the second page of your report which refers to the risk of opioid tolerance. You talk about the plaintiff and how she's at high risk of developing tolerance and requiring a higher dose or more frequent use for the same effect. Do you see that?

A Yes.

Q In your experience for someone in the plaintiff's circumstances, how long do they maintain a specific stable dose of hydromorphone before they elevate the amount that they need?

A I guess I'm looking at the specific circumstances of the plaintiff. I guess first I'd say people are very different. But when I'm looking at the plaintiff herself, she said that she first had exposure to hydromorphone, to opioids, when she was in hospital after an assault. That was in June of 2020.

At that time she received 0.5 milligrams of hydromorphone intravenously. She refers to that as being the first time she felt calm, and had a calming effect from opioids. It's a very, very low dose. She received a prescription for hydromorphone 1 milligram, and she received ten tablets. That is well below

what is considered an amount that should lead to cravings, tolerance, or addiction, and yet she describes herself as wanting -- to developing cravings and seeking out more of this medication.

So I would say her -- and then she went on within a fairly short period of time to use IV morphine, IV heroin, and fentanyl. And then was seen at the addiction -- the facility in Calgary in May of 2021 giving her only a very short time of developing tolerance.

So when I'm specifically looking at someone who's developed tolerance, she seems to have developed tolerance quite quickly. Also looking at how fast she went up in the clinic, she seems to have developed tolerance quite quickly. Tolerance development is a very individual thing and how fast people develop tolerance can also be based on what they're using it for, how they're using it, whether they're using it for euphoria. So there can be a lots of factors that can influence tolerance.

To say a specific rate at which people develop tolerance, I can say that people lose tolerance fairly quickly, and people can develop tolerance within a week to two weeks of a specific drug, but it's very individual.

It's very much based on what they're taking, how they're taking it, amounts that they're taking, that sort of thing.

Q So the plaintiff has indicated that she's been on the same dosage of hydromorphone since being on this -- in this treatment program for the past two years. 48 milligrams.

A Yes. She's been on 48 milligrams. I have from -- she didn't -- she has not been in the program for a total of two years. She started in May of 2021; so she hasn't been in the program for two years. She has had an -- her dose was increased to 48 milligrams and does seem to have been fairly stable at 48 milligrams, but I did not get any access to more recent data regarding her. Mine ends in February of 2022, I believe.

And with that, it's not possible to say how much she was taking outside of the amount prescribed, but it does appear that she has been on a fairly stable dose for -- from the clinic for that period of time.

Q And are you aware that as part of this -- the treatment program she's on, she has to do urine tests to determine if she's taking opioids outside of the program?

A I'm not aware of that.

Q Okay. And she's never shown to be using fentanyl or any other street-source opioids?
A I have no information about her -- what she's taking. The only thing I can allude to with that is that she has referred to decreasing her dose when she went from oral to injection. And since she's continued to increase her dose at the clinic and didn't have a decreased dose, I don't know if she's referring to other medication she was taking.

I can also refer to Dr. Bouman's report where she says that she has decreased her fentanyl usage and that she believes her. Dr. Bouman does not state that she has eliminated her fentanyl use and that she is not taking fentanyl. Dr. Bouman would have access to her urine records. I have not seen urine records. I also know that many clinics don't necessarily take them; so I can't comment on whether she is taking fentanyl or not taking fentanyl.

But I would accept that the assumption would be that Dr. Bouman's report would be indicative that she may still be taking fentanyl based on the wording of Dr. Bouman's affidavit.

Q Well, in questioning, Dr. Bouman says that the

urine samples are all clear, that she's not taking fentanyl.

COUNSEL N. GARTKE: Is there a question?

COUNSEL A. NANDA: Yes.

Q COUNSEL A. NANDA: How can you -- like, the insinuation is that Dr. Bouman's evidence is that she may be taking street opioids.

A Dr. Bouman's affidavit specifically says that she has -- she has been told that she decreased her fentanyl and that she believes her -- Dr. Bouman did not say that she had eliminated her fentanyl use.

In addition, urine drug screens are not done all the time. So people can come and not test positive for a drug that they are using. So testing negative for a substance can indicate that they did not take it prior to the drug screen.

Again, I'm only going by what Dr. Bouman said in her report. She did not specifically indicate that the plaintiff Ophelia/Sasha was not taking fentanyl, just that she had reduced her fentanyl. If, in fact, she said something differently in the testimony I -- that she has provided, I don't have access to that. But I can say that people's urines are an indicator of what they've taken prior to their urine

being taken, and not prior -- not necessarily a complete picture of what they are doing in the community between visits.

Q Sure. But it's fair to say you don't have a complete -- the complete evidentiary picture in order to opine on the fact whether the plaintiff is still accessing street source opioids?

A No. No. Just the comment from Dr. Bouman. That is the only source of questioning. And her own testimony of just going up in doses in a very quick period of time.

So my concern for her is that this is -- that she can develop tolerance and increase her dose based on that -- based on how she's described both herself, her euphoric effect, and a possibility that she was using other medications.

Q Are you aware that [indiscernible] has declined dose increases offered by various service providers in the last two years?

A I'm sorry.

Q That the plaintiff has declined increase to her doses of -- like, increase in the amount of hydromorphone given to her each day during the past two years?

A Each -- I'm -- there are certainly -- I mean --

now, what I can say -- I think that she has accepted increases in her dose up to 48 milligrams.

COUNSEL N. GARTKE: Mr. Nanda, if you want to put specific evidence to her, you're free to do that, and she can comment on it.

COUNSEL A. NANDA: Yes, I am.

Q COUNSEL A. NANDA: The evidence of the plaintiff is that she was offered dose increases from 48 milligrams up over the past two years, and she declined to accept them.

Is that consistent with what you're saying that the plaintiff's at risk of increasing her doses?

A It's certainly not over the past two years. She hasn't been on 48 milligrams for the entire time she's been in the program, which is less than two years. Once she got to 48 milligrams, I'd have to check my notes as to when that was, I have -- my notes would say that they were also offering her other things, and she declined, such as taking Kadian, other ways of taking it.

I don't -- if, in fact, she has been declining an increase in opioids, that is beyond what I have information on, and that's very -- yeah. So I'll just say that's -- but

it certainly isn't just -- two years. She hasn't been in the program for two years. She's worked up to the 48 milligrams. And what you're saying is that at 48 milligrams she's been offered a higher dose, and she has declined?

Q Yes.

A I also believe that I read that there were times when she was asking for an increase in dosage.

Q Okay.

A So I -- but I can say that she -- from what I can tell from her evidence or from -- sorry. What I can tell from the information provided to me, she has stayed stable at 48 milligrams for a length of time.

Q Okay. But you have no information or knowledge of her developing increased tolerance requiring a higher dose than she currently receives?

A Her pattern of use in the one year prior to -- she's been in the program for less than two years. Her pattern of use in the year prior to her starting the program is concerning for someone who could develop tolerance. She has been on 48 milligrams for a length of time, but I would say that based on her previous pattern, she's at risk of tolerance. And she has not

decreased her dose at this time.
Q Does the fact that she's been stable on a specific dose since being on the treatment show the effectiveness of the treatment?
A I'm -- the word effectiveness I'm having difficulty with. It appears that she has not increased her dose of her opioid that they are prescribing to her for a length of time.
Q Okay. And does that not show that stability?
A It shows a stability in dosing, yes.
Q Okay. But you would not -- would that show that the treatment is successful in your opinion of stabilizing her?
A I think that there are many factors about her that I'm not aware of to be able to say that this has stabilized her. I can say that she has a stable dose, and that is something I can say.
Q The evidence is also that she has not had an overdose -- well, the only time she's had an overdose since being on the program is when she didn't have access to her medication. But aside from that while in treatment and accessing the medication, she's never had an overdose.
A I'm sorry. Could you get closer? I can't hear your question.

COUNSEL A. NANDA: Sorry. Maybe go off the record for a second.

(DISCUSSION OFF THE RECORD)

Q COUNSEL A. NANDA: Her evidence is that the only time she's had an overdose since she's been in treatment is when she was out of the city and didn't have access to her medication. But through the entire period of time that she'd been in treatment or on this treatment, she's never had an overdose. Does that indicate the effectiveness of the program?

A I would say that her self reporting is that she has not had an overdose. I would also say that the program as it is shows that people are very dependent on their drug. And anything that leads to a disruption in it can cause significant problems for that person.

She was well aware she was going to Edmonton. She planned it. She asked for her medication to be sent to a pharmacy in Edmonton and knew what she needed to do to be able to get the medication. Went without the proper documentation. I believe it's an insurance form so she could get it. If it was her health card, anyone can pick up opioids.

And she wasn't able to problem solve in a way that she could get her opioids. Other

people can pick them up. I don't know the difference in price between what she was -- had to pay compared to the price of the drug she got.

But what I can say is that that's one of the problems with something that's so limiting. And so she is locked into a program where when she leaves her community or has any disruption in the program, it causes a complete disruption. So I think that your -- I would say I have a different view of whether that's a success of the program. I think that shows that the program is very much something that she is controlling her, controlling her ability move, and controlling her lifestyle. She's now owned -- she's very dependent on the opioids and not being in any way having a disruption of that.

Q Okay. As someone -- well, are you a -- what does safe supply mean to you?

A I'm sorry?

Q What's your definition of safe supply?

A I don't think that -- so I believe that you're -- when someone refers to "safe supply" that they are referring to the -- to what the prescribing of opioids in high doses that are not witnessed to people who have a documented

opioid-use disorder.

Q That is your definition?

A I don't like the term "safe supply". I think that the term "safe supply" is misleading. Originally it wasn't referred to as safe supply. It was referred to as prescriptions allotted. Prescribing it was referred to as pandemic prescribing. It was referred to as safer supply.

Now many people have dropped the R and refer to it as safe supply. But in referring to safer supply, they're generally referring to prescribing to individuals high -- doses of unwitnessed opioids, usually pills, that are taken -- or that are prescribed that are picked up from pharmacies usually on a daily, sometimes one to two even as much as four days at a time, to be taken by that person in an unwitnessed fashion.

Q Okay. And that's -- you refer to that as safer supply?

A I don't refer to it as safer supply. I believe that when people are using the terms safe or safer supply, that is what they are referring to.

Q Okay. And in your affidavit -- in your expert report you refer to safer supply. That's what

you're referring to?
A Yes.
Q Okay. What --
A I felt that it was important not to change the name from what tends to be used. It is not what I -- I do not like the name safer supply for the program.
Q Okay. You don't believe in this form of treatment?
A Oh, I am -- I think that there is a place for people to be having opioids prescribed to them. I think that an unwitnessed program has problems for the person involved as well as the community, but I also do feel, I guess -- it's not a belief. That's like a -- this isn't a religion.

Scientifically, injecting a pill that was designed to be swallowed is inherently dangerous, and, therefore, I do not support prescribing pills to people with the knowledge or encouragement that they should be taking it at a route that is inherently dangerous.

Q Okay. But as part of -- safer supply programs exist across the country; correct?
A There are safer supply programs in Ontario and Alberta -- sorry -- and British Columbia. I don't know of them being across the country.

Those are different places in the country. But I also would say if -- they're certainly limited to this is a Canadian experiment, and there are sites that they are doing this type of prescribing in Canada.

Q Okay. But safer supply programs exist in Quebec?

A That's -- the programs that you are describing could exist in Quebec. I'm very familiar with the Ontario experience and somewhat more familiar with the Vancouver experience.

Q Okay. So various jurisdictions in this country provide safer supply programs to treat people with severe opioid-use disorder; is that correct?

A Start with the first part of that. I'm not sure what you mean.

Q Various jurisdictions in Canada --

A What is a jurisdiction? I mean, there's no jurisdiction in Ontario that has specifically said London can be a site for a safer supply program. There are people within that community who have developed what has now been -- was started completely differently as a way to help street-level workers who were selling their bodies for -- to get opioids, and it has now been expanded into a program

specifically for opioid-use disorder.

I don't know that I'd say those are jurisdictions. There are various places within Ontario where people have started this type of prescribing.

Q But it's authorized by whatever governmental authority; right? This is not just drug dealers --

A Oh, no. I mean, there --

Q These aren't illegal; right?

A It's not illegal, no. Prescribing opioids -- physicians prescribing of opioids is not illegal.

Q Yes, that's what I'm getting at. That there are various jurisdictions where it's authorized for physicians to prescribe what you just described as safer supply to --

A Physicians aren't specifically authorized. We are allowed to prescribe opioids. It's within our -- certainly within being a physician, physicians are allowed to prescribe opioids. And this has been supported at times by grants from Health Canada, for example. It is not illegal for a physician to prescribe opioids.

Q Okay. But this --

A I wouldn't say that a jurisdiction such as -- so I -- yes, I'm just not sure if I understand

what you mean by "jurisdiction".
Q I really don't know why we're debating this to be frank with you.
A I don't -- okay. But --
Q My question is simple is that various places in this country, physicians, medical teams, medical clinics treat people with severe opioid-use disorder through safer supply?
A Through the program that is being identified and called safer supply, yes.
Q Okay. And as part of those treatment programs, they consist of what you just described to me or they can consist of what you've described to me which is providing Dilaudid or other opioid medication in pill form for pickup and unwitnessed use; correct?
A Yes.
Q Okay. And in those contexts, the Dilaudid pills can be consumed orally, intravenously, or for lack of a better --
A Snorted.
Q Snorted; is that correct?
A Yes. They can be. They are oral pills, and in general the instructions are to take them orally. But they are at times taken orally, they are at times injected, and they are at times snorted.

Q And it's well understood within the academic literature that this is -- these methods of consuming safer supply medication is occurring in Canada?
A Yes.
Q And it is well understood by many of the programs -- or all of the programs that provide a Dilaudid -- an oral hydromorphone in this form as part of safer supply that the pills will be used in many cases intravenously?
A I believe that physicians who are prescribing are aware that there are clients in their program that will be using them intravenously.
Q Okay. So it's not an anomaly that the plaintiff consumes her oral hydromorphone unwitnessed and intravenously?
A No, it is not an anomaly.
Q Do you know what -- well, what is iOAT? Your affidavit mentioned --
A iOAT is -- yes. IOAT generally refers to injectable oral agonist therapy or using hydromorphone in an injectable form, an ampule of hydromorphone that was designed and intended to be injected.

So that is -- generally speaking, in iOAT programs people will come into a clinic, they will inject a specific amount of -- and

usually it's hydromorphone in a witnessed setting intravenously. They are given the amount to inject. It is witnessed. They usually stay for a length of time to make sure there is no difficulty related to taking their injectable hydromorphone. It is tailored to the individual, and it is specifically designed for people who are at very high risk, likely using for a long period of time, and have been unable to be successful with methadone and/or Suboxone. Usually both.

Q In your affidavit at paragraph 7 you indicate that if the plaintiff has a -- well, if a patient like the plaintiff has a psychological need to inject, it can be provided safely in a supervised iOAT program. I don't know --

A It can -- it can definitely be provided in a safe environment in a supervised iOAT program. There are still risks associated with iOAT, but it is a safer program.

Q Are you aware that -- at the time that the plaintiff entered -- or, sorry -- receiving this treatment that although she was eligible for that program, could not be admitted into it because there was a prohibition on new patients being allowed into that program?

A That was included in an affidavit, I believe.

Yes.
Q Okay. And in that circumstance what alternatives are there for a patient in that scenario?
A Well, I think that if you look at what she's saying, she's only -- at the time that she entered the program had been using for one year. Actually, less than a year. She specifically says that she has started in June of 2020, and she goes to the clinic in May of 2021. She is a young woman who is looking for the euphoric effect of drugs.

She has not ever tried methadone. Prior to her going to the clinic, she has what I can see is a prescription of Suboxone that was not given -- unfortunately, it was possibly related to it being during the pandemic, but certainly not -- there's nothing to indicate she had a program of Suboxone that I would think was a safe or witnessed program. She still had Suboxone left two months after she finished the program and took it at a different time.

So I can say that she didn't have a trial of either methadone or Suboxone. And she didn't have -- generally speaking, when we're looking at people going into an iOAT program, we think of them being as very resistant to all

other treatments. That they've tried other treatments, but they've been using for a long period of time. Other things have failed. Sometimes people will even refer to them as palliative. I don't think that that's necessarily an appropriate word, but they're very far along. Often very, very advanced in their disease process.

I cannot say that somebody who has been using opioids for one year would necessarily qualify for an iOAT program. And if she did, it would be, generally speaking, after other attempts to ensure there isn't something safer for her to use.

Q But that's something -- like, her treatment options are something that she develops with her physician; correct?

A She stated to her physician that she had tried methadone. She said that on multiple occasions. And her physician, I believe, believed her in spite of the fact that there is no evidence that she actually tried methadone.

She also said that she had tried Suboxone, and there is no indication that she had an accurate trial of Suboxone. In the setting her physicians made a decision to start her on a treatment that I would -- but they

also made attempts to have her start it orally. The initial medications were all written as oral medications. Her first medication was M-Eslon. Even when they switched her to Dilaudid, it was intended to be oral.

The decision to go with intravenous appears to have been the plaintiff's herself and then was supported by her physician. I don't have any indication that they suggested that she start taking the oral medications intravenously. Once she was taking them, they were aware of it, but I would also argue they did indicate -- Dr. Bouman's note did indicate that she did discuss risks of infections including stroke and endocarditis.

But I think that the risks associated with injecting pills are not well understood, and that's a part of my concern about the program is that initially when it was started in London, there was some evidence that people were benefitting. But the problem is the collection of data has not included those that are suffering, the people that are getting -- that I see. The voiceless. The people that are lost to follow up and have had severe infections. Spine infections.

The disabling horrific infections that I

have seen from people injecting Dilaudid have been very -- gone without a lot of attention. The media attention is to overdose. Overdose is an accidental death, and coroners only report accidental death. We actually studied it in London and found out that as many and maybe as many as twice as many people die from infectious complications of injection drug use as overdose.

So I think when people are addressing the risks, I think physicians are not adequately aware of the risks of injecting a pill. I also believe that patients themselves are not adequately aware of the risks of injecting a pill.

Q Okay. You said a lot of things in there like -- a couple things. First of all, her program, her treatment of picking up oral hydromorphone medication and then consuming it as she liked including intravenously, that is what you describe to be safer supply, no?

A I believe that people involved in safer supply programs are aware that their clients are taking the oral -- pills that are meant to be oral and are using them intravenously.

Q Okay.

A I don't know of any safer supply program that

actually says that we are only recommending this to be taken intravenously. I believe that they support people who are taking them intravenously and by snorting.

Q And that, again, is a recognized treatment option for a severe opioid-use disorder in Canada?

A It is recognized. Is it an improved treatment option? I'm not -- there are definitely places that are using this form of treatment, which I think has risks. There are certainly many physicians that do not support this type of treatment and feel that the risks far outweigh the benefits.

So I'm not sure how to identify "recognized", but there are definitely people and places that support this type of treatment option for patients. I think that those who are supporting it are very unaware of the significant risks that are associated with it.

Q Okay. It's part of the spectrum of care for opioid-use disorder in many places in Canada; is that fair?

A And I would say few places in Canada. I'd say it's actually very few places in Canada that have this as a treatment option.

And I would not necessarily say that it

is a recognized treatment option that is part of teaching about treatment options for people who have opioid-use disorder. Even for programs in which it exists, it is generally thought of as a very last resort.

Q For the most vulnerable?

A For the most vulnerable people, absolutely.

Q Okay. And, again, like, you know, do you have a sense of what locations in Canada offer a safer supply program?

A I am aware -- I'm aware of this form of prescribing being available in London, Toronto, Hamilton, Ottawa, and in Vancouver. Obviously it has been available in Calgary. I am not aware of everywhere -- other places where it's being prescribed this way. I'm much more familiar with what's happening locally and how it's affecting people locally.

Q Okay. And to be clear, you did not do any research or read any studies about safer supply and its availability in preparation of your expert report?

A And it's availability? I did research about safer supply. I did not do research about all the sites that it's available probably because I don't know that there is research that could support that and that a lot of places are doing

this quite ad hoc and individually. So to be able to know where community health centres, for example, are providing this would not be something that would be an easy thing to find.

But my research and my involvement is absolutely about seeing the effects within a local community and what that has meant for the people in the program, people in the community, and what -- how it has affected the community. And I did not research where all of the places that could be available that physicians can be prescribing this way. I'm not aware that that research exists.

Q Okay. And your expertise on efficacy of this treatment option, safer supply or what the plaintiff is being treated with, is based on kind of that local experience in London?

A It's based on not just the local experience. We did -- we actually studied the effects of injecting drugs. We specifically were looking at the effects of injecting Hydromorph Contin and it leading to endocarditis. So I've been involved specifically in research projects that look at the effects of injecting pharmaceutical pills, and I am very familiar with the experience in London and the consequences of the program locally.

I am also aware in talking to other physicians that I work with about some of the consequences in other more -- areas that are closer -- that are connected in Ontario. I also have read about some of the experience in Edmonton. I haven't seen publishings other than the London -- the London has published in the Canadian Journal -- or, sorry. The Canadian Medical Association Journal. I'm not aware of other people who have actually published literature that's peer reviewed in Ontario or in Canada to answer that question. I've certainly looked, and I have not seen it. If it's there, I have not seen it in any screening I've had to try to find out information about this.

So as far as published peer-reviewed data that would say the answer to your question, I'm not aware that that exists.

Q Okay. Are you a prescriber of safer supply?

A No.

Q Okay. You've never been a prescriber of safer supply?

A Not in the format that it is used, no.

Q Okay.

A I have prescribed opioids.

Q Yes. I imagine as a physician, you have.

A I have prescribed opioids to patients leaving the hospital in tapering doses in forms that would be unwitnessed. And --
Q But you're not a prescriber; is that correct?
A Pardon me?
Q You're not a prescriber of safe supply?
A I'm not a prescriber of safe supply in the current format that it's in, no.
Q Okay. What is controlled-released hydromorphone relative to instant-release or fast-acting hydromorphone?
A Okay. Controlled-release hydromorphone often referred to as Hydromorph Contin is hydromorphone that comes in a capsule form that is designed -- it's got a capsule. It has beads inside it. And it was designed to give a sustained release when taken orally.

An immediate-release hydromorphone is in a pill form. So a tablet form. It is designed to be ingested in the gastrointestinal tract. Both are them are designed to be ingested in the gastrointestinal tract, absorbed through and metabolized through the liver and then enter the bloodstream after they have been metabolized in the liver.

Q And you have studied the controlled release -- the impact of controlled-release hydromorphone

pills being used intravenously?
A Pardon me? We studied hydromorphone. We studied other pills as well including immediate-release Dilaudid. We studied Hydromorph Contin being -- and its effect if it was -- we didn't study it -- so we studied the effects of bacteria within Hydromorph Contin, and we also essentially did a study of looking at the community for the increase in endocarditis that is related to injecting Hydromorph Contin.
Q Okay. So what version of hydromorphone is provided in safer supply programs?
A The vast majority of safer supply programs that I'm aware of tend to use Dilaudid in the pill form. They also often will use M-Eslon which is a capsule with beads. They also -- I'm now aware that the -- they sometimes will use Hydromorph Contin which is the long-acting Hydromorph Contin, and Kadian is often used.

So although it tends to be associated with immediate-release Dilaudid or hydromorphone, there are often other types of pills that are used in this type of prescribing of opioids.
Q Okay. What is a tablet-based injectable opioid agonist treatment?
A I think that's an oxymoron, but a tablet -- I

mean, that's -- essentially when they're referring to a tablet, it's not injectable which is why I'd say it's not an accurate way of describing something.

But injecting a tablet has been referred to as tablet injectable opioid agonist therapy. I would actually say it's neither injectable, and it is arguably not a therapy in the way that other opioid agonist therapies are therapies.

So I could describe what I mean by that, or -- so it's -- when we're talking about something that's injectable, tablets aren't. When you're injecting a tablet, not only do you get the hydromorphone or whatever the medication you're hoping for, you also get the fillers. You get the substances in that capsule or pill that make it a capsule or pill.

Those things are not designed and are not safe to be injected directly into the vein. They can cause damage locally to the vein, and even more important, they can cause damage remotely in small blood vessels where they clog small blood vessels such as the blood vessels of the spine and the heart valves.

So I saw a significant increase in spine infections that led to horrific pain and

horrific paralysis and an increase in left-sided heart valve infections. We were able to prove that Hydromorph Contin causes right-sided heart valve infections, and overall in London, I saw a significant increase in serious infections related to injection drug use related to injecting Dilaudid.

I was able to take that information that I had to the chief coroner of Ontario who could substantiate that in London we had a significant increase in infections related to injection drug use with the introduction of Dilaudid injecting compared to the rest of Ontario.

So in talking to patients and -- which is how I found out that Hydromorph Contin increased your risk of endocarditis -- in taking to patients, I was able to determine that when they were injecting pills, they were at risk of other forms of infection. So I don't consider a tablet injectable.

When we're also talking about therapy, I think it's really important to also recognize the difference between an opioid and opioid agonist therapy. Opioids, when used regularly, have a neurobiochemical effect on the brain, and that biochemical effect on the brain changes the biochemistry of the brain. It

inhibits the natural endorphins. You lose your ability to fight pain. It becomes the new normal. To get the same effect, often people have to increase the dose. It puts them at risk of what the brain feels it needs to cause other symptoms including a respiratory depression. And when that drug is removed as the brain feels this is normal, you release other chemicals that can cause agitation and lead to withdrawal and cravings.

Opioid agonist therapy, when we're looking at it in its traditional form, includes medications like methadone and Suboxone, and more recently Sublocade which actually have been shown to offset and even reverse those biochemical effects. Those biochemical effects, they are improved. You don't get the euphoria.

You can actually -- over time the goal with opioid agonist therapy is to actually lead to recovery of the brain. It's not just a -- recovery isn't just a loose term. It's specifically about recovery of the neurobiochemical changes in the brain that can actually have people no longer -- ideally no longer dependent on a opioid. And if we're looking at something like Suboxone, you don't

have the respiratory depression risk that you get with other opioids. So it truly is a safer way of taking things and a safer form of -- it's not a therapy -- so I think that although those terms are used loosely, I would say that opioid agonist therapy is methadone and Suboxone in Canada.

We refer to iOAT and TiOAT, but as I say, I would not say that -- I think those are acronyms that are -- like safe supply, they're sort of describing what we're doing, but safe supply or safer supply would imply something safe that isn't. TiOAT implies that it's okay to inject a tablet, and I think that there are significant risks associate with injecting a tablet. It also implies that it's a therapy, and it's not a therapy equivalent to other opioid agonist therapies.

Q Okay. So you're aware that there are TiOAT programs in Canada?

A I am aware that the term TiOAT is also used. It's specifically used in Vancouver. It's -- but I don't -- other than Vancouver, I'm not aware that there is a safe -- any safe supplies specifically calling itself a TiOAT program.

Q Okay. Have you reviewed any academic literature or treatment guidelines with tablet-based

injectable opioid agonist treatment programs?
A Yes.
Q In preparation for your expert report?
A Yes.
Q I notice that you don't mention any of the program reviews for these treatments.
A I think that what you're saying is exactly -- it's reviews. It's not -- what we have when we're looking at the TiOAT program in Vancouver, for example, is a self-reporting program. And we have a program in which it's not -- it's not randomized controlled trial. It's not peer reviewed. The participants in the trial are well aware of the trial -- or if that's even when it is. I would say it's not a trial, per se.

But the program -- they're aware of the program. It's very publicized. And those who are interviewing the clients in the program are aware that they're in the program. So we don't have the advantage of something like a peer-reviewed controlled evidence-based medicine. So I would say there are some surveys of clients that would indicate an amount of -- I don't know what the right word is, but I would suggest a positive result from being in the program.

I also would say that the programs are -- that's exactly what happened in London was that initially I supported this program. I don't know if I supported the concept. I was aware that Hydromorph Contin was causing endocarditis, and I thought it would be an improvement until I started seeing the horrific side effects and infections and collaboration seeing, you know, why people are lost to follow up. Why people aren't being --

You know, I know of people who have died that have been in the program in London of overdose. I don't know how to explain that they're not being counted, but when you're dealing with something that is a self-reported survey, people with severe infections can be missed. People with overdoses can be missed. So the data involved in that is really about a survey that would indicate something that people are hoping is helpful. It is showing the effects that they're hoping for.

Q Okay. Just on that point. Is there any reason why you do not mention this in your expert report that there are different views on efficacy of these safer supply programs or TiOAT programs?

A There -- certainly there are significant views

among addiction experts that would say that these programs are harmful and are causing the harms that I am seeing as well. My expertise is seeing -- I have been able to see harms that haven't been documented by the program.

And giving you other people's opinion, there are lots of physicians -- I'm well aware of many more physicians who are very concerned about those programs and the risks that they cause than physicians that support those programs. I didn't include that either. I am not including other people's opinions in my report. I'm giving you my experience, not the experience of other people.

Q Okay. So you're saying that your report is limited to your views on the matter but not an overview of, you know, other perspectives on the same medical treatments?

A Mine is not an overview of all perspectives on the treatment. Having said that, as I mentioned, if I were going to give an overview on other perspectives, that would include that I am well aware of other people that are very concerned about the program. This is not a documentary -- or not meant to encompass all of the views on opioid use and how it can be used. This is based very much on my observations, my

research, and not intended to reflect all views.

There is no consensus on all views, and to have a -- you know, if what you're -- and there is no consensus on whether what is referred to as safer supply should continue. What I have seen is the downside of it. I have seen what it has done to the patients in it, that it is negative to patients in the -- people in the community that it is negative and to the community itself.

And I'm aware that, for example, overdose deaths in Ontario went down. In London they increased. Homelessness has increased six-fold. There are many things about this program that I've been able to see that are not captured in data, but that is not meant to be a review of all of the viewpoints around opioid use.

Q This report just conveys your concerns with this type of treatment approach?

A This report conveys my concerns and experience with this treatment approach.

Q Okay. It does not highlight varied views?

A I'm sorry?

Q It does not highlight the variety of different perspectives or views on this treatment

program?
A No.
Q It does not highlight or include any of the positives or efficacies of treatment options like this?
A I am not aware of any evidence-based peer-reviewed treatment options that are positive. I am aware of surveys and what used to be referred to as observational science that has come to conclusions. Those conclusions are not included in my report nor are other people's conclusions that those treatment forms are not efficacious.

So no, I did not include non-evidence-based observational reports in my affidavit.

Q And did you that deliberately? You excluded those perspectives deliberately?
COUNSEL N. GARTKE: I'm going to object to the question. It's augmentative, and she's answered it already.
COUNSEL A. NANDA: It's not argumentative.
Q COUNSEL A. NANDA: You made the conscious decision, Dr. Koivu, to not include those perspectives or those studies in your expert report?
COUNSEL N. GARTKE: I'm going object to the question

again. It's argumentative. Dr. Koivu, please don't answer it.

Q COUNSEL A. NANDA: Okay. Did you prepare this expert report yourself?

A Yes.

Q Okay. And you determined what would be included and what would not be included?

A Yes.

Q And you determined that you would only include in this report your concerns with the safer supply program or the treatment option that the plaintiff receives?

A I'm sorry. The last part of that -- that's a two-part question, and I'm not sure I understand the second part of that question. Can you divide them into parts, please.

Q You determined that you would only include the critiques you have of safer supply as a treatment for opioid-use disorder in your report?

A Sorry. That's a -- I'm still not hearing that as a question.

Q Please read the question out, Amanda. If you have it.

THE STENOGRAPHER:

"Question: You determined that you would only include the critiques you

have of safer supply as a treatment option for opioid-use disorder in your report?"

A I don't know what "critiques" means. But because I'm not critiquing safer supply, my report is not meant to be a critique of safer supply. My report is meant to highlight my experience that it is not being equally captured and concerns that I have with the program itself.

It is not a critique of safer supply. This is based on my experience -- my experience with patients. My experience with research -- and is not intended to be a critique.

Q Okay. It only highlights the concerns you have with the safer supply program; is that correct?

A I'm sorry. You're sort of mumbling at the beginning of that question. Can you --

Q Yes. It only highlights the concerns you have with the safer supply program?

A Oh, there's many other things in my report that aren't about the safer supply program.

Q Okay. But in terms --

A Well, it doesn't only highlight --

Q Just --

A -- the concerns about the safer supply program.

Q Say that again.

A There are other parts in my report that are not about the safer supply program.
Q Okay. I'm asking you about the safer supply aspect of your report. And in your report you've only included criticisms --
A I have --
Q -- that you have -- please let me finish my question.
A Okay. M-hm.
Q You've only highlighted or included the concerns and criticisms you have with safer supply as a treatment option for severe opioid-use disorder?
A I have indicated that when it was initially introduced, I, as well, was optimistic. So I have indicated that when it first came to London, I was optimistic. And then I have genuinely and truthfully presented my observations that have led to concerns I have with the program. I have not seen -- everything that I have -- sorry. Everything that I have seen, I have included. I have not included things that I have not seen.
Q Okay. So you have included --
A The benefits that I have not seen, I have not included.
Q So you have not outlined any of the positives

with the safer supply program for severe opioid-use disorder. Is that because you have not seen or read any positives?

A I am giving you a report of what I have seen, and I have not seen positives related to this program.

Q Okay. And then with respect to the plaintiff's treatment option, you've only included concerns and criticisms of the treatment option that she's been provided; is that correct?

A I have concerns about the treatment option that she has been provided. I have provided some suggestions of other treatment options. I have not listed positives of the treatment options that she is receiving if that is your question.

Q Are there any?

A Temporarily this patient, like many that were in London, appears to have some stability and appears to have some improvement as she is reporting. However, injecting a tablet is never safe. The harms for injecting are somewhat invisible until the infection actually occurs.

So we have a very young person who is in a program where she is injecting something into her body that is not intended to be injected that over time can lead to an infection without

any form of exit strategy to that program. I am very worried that this program in its form for this woman will lead to a severe infection and to -- ultimately that type can lead to her death.

So I am very concerned about anyone including the plaintiff being in a program where we are giving something that can cause a severe, horrible, disabling infection and can cause death as part of a program.

Q And what is that based on, the fear of death?

A Fear of death? I think as I mentioned, when we actually looked -- well, we looked at those who died from injection drug use. We found that at two times -- at least as many if not twice as many people died of infections as died of overdose.

And when I've looked at infections related to injecting drugs, it tends -- it tends to be accumulative over time. The damage is accumulative over time and can lead to a severe debilitating infection as I've seen with many people who present with severe debilitating infections.

Other studies, and I mentioned a study in Finland and Australia that I can give you, that show injecting drugs is dangerous and --

sorry. Injecting pills, specifically pharmaceutical pills, is dangerous.

Q So --

A So I'm -- yeah?

Q Sorry. I cut you off. That's not fair. Go ahead.

A I'm very concerned that this woman is in a program that ultimately could be very destructive for her with no exit strategy.

Q You're saying that twice as many people die of -- I guess the complications of injecting pills, opioid pills in Canada, than overdose deaths?

A When we looked at is in a local area and we looked at it through Canada, we found that as many -- at least as many or even possibly up to twice as many people die from infectious complications of injection drug use.

That's significantly challenging to know the data for sure because it is not -- it's not recorded by coroner's reports because it's not considered an accidental death. So this is particularly a study that the infectious disease specialist at London Health Sciences Centre looked at and was able to determine that death from infection could be equal or as high as twice as many. I didn't say it was --

Q Why aren't public health experts, like, raising alarm for this issue as they are with overdose deaths?

COUNSEL N. GARTKE: I'm going to object to the question. It's calling for her to speculate on things not within in her purview.

COUNSEL A. NANDA: Okay. Whatever, man.

A I think that's a really good question. I can say -- but we were able to have the public health unit in London say that there was an epidemic of endocarditis. It was very difficult to do, and that was based on Hydromorph Contin.

I think that it's -- the data is -- I think that the message of overdose is overshadowing the other risks, and I think that that is a problem. As a medical -- as having been a medical officer of health, I do think that this is a very important problem that needs to be addressed and identified.

Q COUNSEL A. NANDA: What do you mean "overshadowing"? Why is overdoses overshadowing endocarditis?

A There is a lot more media attention to overdose. When we hear the literature -- even when we heard the literature about -- during the opioid crisis in chronic pain, our focuses

tended to be on toxicity and not on -- because that's something that we -- coroners report it. It is considered an accident. Other forms of death aren't reported by the coroner and the office of the coroner and, therefore, are not highlighted in the same way that the coroner's report is.

Q Okay. And is that, like, a deliberate thing?

A The coroners only address accidental death. That's how coroners have always been. So what a coroner will report is an accidental death. An infection is not considered an accidental death; so, therefore, they are not reported in the same way by the coroner. So even a death by endocarditis or sepsis that's related to injecting drugs is not recorded as an accidental death by the coroners.

Q Okay.

A But that's -- I mean, that's how they've always been. I don't take it as any kind of slight that they're trying to hide data. They have -- their mandate is to report accidental deaths.

Q Okay. But this concern that you have is one of the basis why you are opposed to treatment options that allow for the injection of hydromorphone tablets in unwitnessed settings?

A Yes.

Q Okay. In TiOAT programs isn't is true that they use instant-release hydromorphone tablets?
A The TiOAT program that I am aware of -- the only program that I'm aware of that calls itself TiOAT is in Vancouver, and my understanding is that they are using immediate release hydromorphone in that program.
Q And in safer supply programs, don't they by and large use instant release hydromorphone tablets?
A You know, that's what I thought until I -- you know, yes, many start with that. But as mentioned, many other drugs are also prescribed. They are not limited to what they can prescribe. And as I've already mentioned, people I see are often prescribed Kadian. They're often -- unwitnessed Kadian. Often prescribed unwitnessed other drugs.

So there can be other drugs that are unwitnessed in the programs. They're not specifically regulated. Immediate-release hydromorphone is the drug that tends to be used, I believe, in most programs largely related to research that I was involved in that connected Hydromorph Contin to endocarditis. And the extrapolation of that data was that it was unsafe to use Hydromorph Contin because of the connection with endocarditis, and,

therefore, hydromorphone would be an improvement. It does decrease the risk of endocarditis. Of tricuspid valve endocarditis. But in my experience, it increases the risk of significant other severe infections.

Q Okay. And do you know what form of hydromorphone that the plaintiff accesses?

A Yes. My understanding from what she's presented is that it is immediate-release hydromorphone. The Dilaudid immediate-release hydromorphone tablets.

Q It's not Hydromorph Contin?

A No.

Q Okay. And so the findings that you have made on the adverse impacts of injecting slow-release hydromorphone are not applicable to the plaintiff because that's not the form of medication that she consumes?

A No.

Q Okay. Can you turn to page 2 of your expert report. Just in the middle you talk about "the massive amount of diverted Dilaudid from safer supply" and then you continue on. That paragraph and the second paragraph, can you please review that and let me know when you're ready to answer some questions.

A Okay.

Q How do you know the price of Dilaudid? Like, illegal Dilaudid or diverted Dilaudid?
A That is specifically told to me by patients. I don't buy it, but I've had patients tell me that. So that information was provided by patients that I see in the hospital.
Q Okay. You have no personal knowledge of this?
A No.
Q Okay. And how do you know that, like, Dilaudid is readily available at or diverted opioids are readily available at elementary schools?
A That is in talking to young people who told me that.
Q Okay. And --
A So most of that is from patients, but I've also talked to people in schools.
Q Okay. And you don't have a study or some sort of --
A No.
Q -- academic report to support this?
A No. I can say that since this program, the age of the people I'm seeing is much younger. I used to see people who had been -- when I started getting involved in addiction work in 2012, most of the people I saw had received prescriptions of opioids from physicians or had experienced severe trauma or both.

Now I see a significant number of people whose first -- the majority of people I see, their first involvement with opioids was diverted opioids. Most will tell me that their first diverted opioids that they received or that they started with were immediate-release Dilaudid and have informed me that they're very readily available throughout the city.

Q Okay. That is based on anecdotal evidence; right?

A Yes.

Q There's no --

A No. I mean, not really -- not completely. I mean, my experience with -- the cost of the drugs is anecdotal. My experience with seeing younger patients, patients who never were prescribed opioids, is --

Q I understand. Yes. I understand that.

A It's based on my experience of what I'm seeing. So yes, it's my experience of what I'm seeing.

Q Aside from the younger people using opioids, the rest of what you just described to me is anecdotal; right?

A Yes.

Q Okay. And is it fair to say a lot of portions of this, your expert report, are based on anecdotal evidence rather than kind of

evidence -- published academic studies?
A A lot of this, my report, is based on my experience including what my patients have told me.
Q Okay.
A This particular part about the cost of drugs is based on information that patients have told me. My experience in the next paragraph of people who've been on opioid agonist therapy and then wanting to go off of it or people not going on opioid agonist therapy is not based on things people have told me. That's directly based on the experience that I have. So --
Q Okay.
A -- of things that are based on things that people have told me, yes, the cost of drugs. I don't buy off the street. And the availability has been told to me. The vast majority of my report is based on what I'm seeing and my experience with patients.
Q And what about this -- you had a paragraph how many patients want to get on safer supply as a means to increase their income through diverting their medication and selling it illegally?
A I've had many patients who were stabilized on methadone and Suboxone or patients that we have

talked to about opioid agonist therapy who have told me they did not want to be on opioid agonist therapy because they wanted to be on safer supply, the prescribing program in the community, and I have had many patients tell me that part of the reason they want to be on that program is because of the income that they receive, that they will receive from diverted drugs.

I have also had people in the program tell me what their income can be from diverted drugs. So this is specifically based on what people have told me. Not inferring.

Q Okay. And if you go to page 5 of your expert report, the second paragraph and third paragraph where you talk about the experience in London with the use of hydromorphone controlled release. Do you see that?

A Yes.

Q Again, the plaintiff here is not being prescribed hydromorphone controlled-release pills; right?

A Yes.

Q This is a much different context; right?

A I think the context that I was pointing out with this was that we often refer to safer supply programs as being regarding addressing

toxic fentanyl in our community. Once more people were using opioids, we actually started having problems with toxic fentanyl. But the next -- you know, yes, she's not on Hydromorph Contin. That is specifically what this community started their safer supply for.

But the next part which is what I started seeing when they switched to immediate-release Dilaudid is relevant because it really is -- I wasn't expecting that. I was hoping that switching to immediate-release Dilaudid was going to have the benefits that would decrease the harms from Hydromorph Contin.

But then I started seeing infections, and talking to people the way I had when I found out endocarditis was -- tricuspid valve endocarditis was caused by Hydromorph Contin, I was specifically talking to patients and asking them what they were using. When I started seeing these horrific infections of the spine, I started doing the same thing and asking people what they were using. And the vast majority of patients were using immediate-release Dilaudid when they got their infections. I believe that's --

Q So that's anecdotal evidence; right?

A That is evidence based on my experience. So

it's my experience and what patients are prescribed -- have told me. But yes.

Q You haven't --

A I am not -- I'm working on a study right now, but I do not have published data. I have taken that -- my concerns to the chief coroner who was able to substantiate that when Dilaudid was introduced in London, we have had an increase in overall infections that are severe in this community. And we have had a -- even at the same time as we have had an decrease in tricuspid valve endocarditis, we have had an increase in overall infections.

COUNSEL N. GARTKE: Sorry, Mr. Nanda. I just want to be mindful of the time knowing that I have court hearing at 11:00. I'd really like to take a health break before then. Do you have an idea of how much longer you're wanting to question Dr. Koivu?

COUNSEL A. NANDA: Oh, I can -- I was thinking -- let me just see. I appreciate that.

COUNSEL N. GARTKE: And I believe -- and, Dr. Koivu, if you'd confirm this, but would you have availability in the afternoon to come back and answer more questions if my friend has them?

A I could do that.

COUNSEL A. NANDA: Can you give me -- like, I think I

can pretty much finish in ten minutes, but I appreciate if you have to go to the washroom or whatever, man, just go ahead, and then we can figure it out.

Do you want to take a five-minute, and then we can go until we have to log in?

COUNSEL N. GARTKE: Yes, that would be fine.

COUNSEL A. NANDA: Okay. Sounds good. Thank you.

(PROCEEDINGS RECESSED AT 10:46 A.M.)

(PROCEEDINGS RECONVENED AT 10:51 A.M.)

Q COUNSEL A. NANDA: So, Dr. Koivu, just going to be a bit quick on this. So if you go to the end of paragraph -- or page 6 of your expert report. It's the second-last paragraph. You give some percentages of a person injecting a tablet three times a day and their risk of severe infection.

A Yes.

Q Do you want to review that, and then I'm going to ask you a question.

A Okay.

Q Where are these percentages based from?

A These are based on the experience of what I've seen including experiences of reports on injecting pills. It's -- each time you inject a pill, you are at risk of an infection. And if you're injecting it three times a day,

you're at risk of an infection three times a day. If you're injecting that every day for 365 days, that is increasing your risk of an infection. And since these are particles that are accumulating in your body, that you're increasing your risk of infection with each use.

My experience of seeing people with infection is that this is something that accumulates over time. I can also provide you with the sources I had regarding injecting pharmaceuticals as a risk of infection.

Q But to be fair, these percentages, the source that you're relying upon is your experience or a specific study?

A It's not a specific study. It's really my experience and extrapolating my information about the risks accumulating over time.

Q Okay. So this is based on your personal experience and extrapolation of that experience?

A Yes.

Q Great. You stated that your work and your research on endocarditis and other harms associated from consuming tablet opioids intravenously was to give a voice to the voiceless. What does that mean?

A I think that I -- what that means is that when I'm -- I'm seeing people who are suffering. I am seeing horrific suffering. And that suffering has not been -- people haven't recognized the severe horrors of the types of suffering I'm seeing. They have not had the same type of supports as other communities.

If you have a patient -- I've had people who've had children in their 20s who are dying of infections related to injection drug use. And there is very limited amount of understanding, of knowledge of support for people who are dying from this other unintended consequence of what we're doing with pills.

As I mentioned, I don't want to see anyone die of an overdose. But our focus has been very narrow on the effects of opioids, and even in most studies they talk -- the attention has made these people voiceless. That having an infectious complication of injection drug use has not had the same voice that I think it deserves to have that other serious illnesses have had. It's been ignored.

I consider my patients to be the marginalized of the marginalized because they're not getting recognized. They are suffering in silence and not really having the

understanding and recognition of what their experience has been.

Q And it sounds like through your research, you want to provide that balance, ensuring that perspective is heard in these conversations?

A Through my research, I've wanted to understand what was going on. Through my advocacy, I want to make sure that that is -- that people are aware of what I'm also seeing.

My research really -- there was no agenda in the research in the sense of I didn't know what we would find. I mean, I saw that -- I observed that Hydromorph Contin was increasing the risk of endocarditis, and through research, we were able to actually prove that link.

I saw -- I'm seeing a connection -- the same type of connection that I saw then with other infections and Dilaudid and hope that I can have research that demonstrates that link. In the meantime, I don't think -- I am concerned that it's a very marginal -- no other group would be subjected to non-evidence-based research.

I think we've marginalized people to the point where it's okay to be a research -- you know, a subject of research just because you

are marginalized and that you have an addiction. But my research didn't have an agenda. I didn't know what I was going to find until we did it in the sense of my thought was that I was going to find that Hydromorph Contin was causing endocarditis. But I wasn't doing that to -- with an agenda. I was doing that to understand what we were seeing.

Q And your report here, your expert report you provided, is that intended to provide that balance to ensure that that perspective is heard and any discussion about the efficacy of safer supply programs?

A I'm not -- I believe that what I am seeing is horrific and is not part of the discussion and needs to be identified and highlighted. I'm seeing suffering that as a palliative care physician, as a human being, it's hard to watch. And it's hard to see people with the types of suffering I'm seeing.

I don't know that I'm trying to provide a balance. What I'm trying to provide is information about the unintended consequences, harm, side effects of a program that I believe people who started the program have good intentions. What I want -- it's not about -- I don't know about the word "balance". What I'm

trying to do is say there are unintended side effects. There are harms with this program that I am seeing that I think it's really important that people are aware of.

COUNSEL N. GARTKE: Mr. Nanda, I'm wondering if we just want to pause here.

(PROCEEDINGS RECESSED AT 10:58 A.M.)

(PROCEEDINGS RECONVENED AT 1:34 P.M.)

SHARON KOIVU, affirmed, questioned by Counsel A. Nanda commencing at 1:34 p.m.:

Q COUNSEL A. NANDA: One of the things that -- and, Dr. Koivu, you've read Dr. Gupta's February 26th, 2023, affidavit now; correct?

A I now have read it, yes.

Q Okay. I'll ask you some questions in relation to that a bit later. I just want to finish off some of the questions I had for you.

First and foremost, you've indicated to me that you've also seen the effects of a safer supply treatment method and a treatment method that is in line with what the plaintiff receives, which is being prescribed oral hydromorphone for her own use or unmonitored use. You've said that you witnessed the impacts of this treatment method on your own community --

A Yes.

Q -- and that's also informed your expert report. Can you please elaborate on that.

A Okay. In 2015 I moved to an area that is within 1 kilometre of London InterCommunity Health. I specifically moved to that area because I wanted to be that urban doctor that promoted harm reduction. I wanted to live in the community. I didn't want to be NIMBY. Out of my porch, I could see the boarding houses that a number of my patients lived in. I liked to be able to walk among the people as part of my home and my community.

In addition, this neighbourhood was one of the neighbourhoods that was being considered for a supervised consumption site. I am a strong advocate for evidence-based harm reduction. I wanted to be in the community when -- I went to numerous meetings in the community to promote a supervised injection -- injection consumption site, and I think that being there was extremely valuable for people within the community to recognize that I was a member of the community. I wasn't living on a farm in another community or away from the community. I wanted to be there and be part of it.

What I saw -- and as I say, I loved this

community. I think it's really important to stress that. But, however, what I saw over the time period when the InterCommunity Health began there, safer supply program as it is called, a significant change in the community.

There is a pharmacy across the street from London InterCommunity Health. A large amount of diversion is taking place from that pharmacy. People moved into tents and encampments in the parking lot behind this pharmacy so that they could be closer to the diverted drugs. People moved into the storefronts along the same area. This was not an area where there were tent encampments previously, but these increased.

I was advised by patients that some of them had actually -- had had housing and had moved to tents behind this pharmacy so that they could have quicker access to diverted drugs. A number of the people that came to this area weren't from the area. Were from often a long distance away so that they could be closer to the -- accessing diverted drugs. And at times even when things like shelters were offered to them farther away, they did not want to go because they wanted to stay accessing their -- the drugs that were being diverted.

Also, there certainly was an increase in crime. Businesses had -- there was an increase in sort of businesses having their windows broken. The neighbourhood I lived in, there was an increase in sort of things like bicycle theft, theft of -- breaking into homes and taking copper piping. So there were certainly impacts of -- the neighbourhood was changing significantly in those sorts of crimes.

Cars were being broken into, and previously -- cars were checked all the time, but this escalated to windows being smashed, that sort of thing. So a real significant change. Businesses being worried about being in the area and a real change in sort of the feeling of the community.

Q And did you yourself or your home suffer any of these acts of robberies or vandalism, anything like that?

A We had -- I had some porch furniture robbed. But beyond that, we were very cautious. So I did not -- I didn't experience anything personally. I have a lot of friends that did, but other than -- I did have porch furniture robbed, yes, but I did not have a break in to my home.

I had the doorbell ring at 3 o'clock in

the morning, and, you know, the concern of if you didn't answer the door, you'd be at risk of having some type of problem. So I did have experience with that sort of thing. We were very cautious and didn't leave a lot. We were actually sort of -- I never worried going for a walk in the neighbourhood. I never worried about being mugged or anything like that. We were more worried about leaving things unattended.

Q Dr. Koivu, what is the META:PHI listserv?

A What is -- okay. It's the mentoring education -- can I look --

Q Is it the Mentoring, Education, and Clinical Tools For Addiction and Partners in Health and Integration listserv?

A Yes.

Q What is that listserv?

A It's a listserv organized by a group of addiction -- I think that the listserv originated from a program through Women's College Hospital that is also involved in education programs around developing standards around opioid use. And they have a listserv that is -- originally was only available to physicians but is now available to people who are interested in opioid-use disorder who are

mostly healthcare professionals.

Q And you're a member of that listserv; correct?

A I'm on the listserv, yes.

Q And do you frequently post messages with respect to your views on safer supply?

A No. I did originally. At the very beginning when I was seeing concerns that I had regarding safer supply, I experienced what I would say was -- I'm trying to think of the best word, and the word that comes to mind is bullying. I was told that I didn't see things that I did, that was fearmongering, that I was not contributing. You know, I was making things up.

So I did make some attempts, some very significant attempts to share on this listserv what I was seeing. However, after the bullying that I received, I don't turn to that listserv. Now, many people on the listserv who I consider experts in addiction, I still communicate with on a very, very regular basis.

And the people I communicate with who are absolutely considered experts in their field, whether this is in Toronto, Ottawa, Hamilton, all over share my views. And even to a large part share not going on the listserv. The listserv had to be reprimanded. There was

a posting about bullying on the listserv. But as far as a place to share my views, it was -- it's not a place I'd feel safe.

Q When did you post on that listserv, your views on safe supply? What periods of time?

A I'm going to say quite a while ago now. Probably more than a couple years ago. I would not be able to know for sure.

Q Did you post on the listserv, let's say, between 2019 and 2021?

A Between 2019 -- yeah, I would think that might be within the time frame that I posted on the listserv. I certainly did not keep track of when I posted on the listserv.

Q And the bullying that you're saying that you experienced, was that in relation to views expressed around safer supply?

A That was to the views I expressed around specifically seeing infections related to people injecting drugs and being told that what I was seeing, I wasn't seeing. That I was fearmongering.

So I would say it's -- that related to my trying to bring attention to side effects of safer supply.

Q And was this -- and the people who were -- you know, who expressed the concerns that you're

describing, were they other physicians?
A You mean, like, the people that were -- no. No, not -- one of the main people that was expressing their distaste for what I was posting was a PhD candidate in public health, or -- I think she had her PhD in public health, but not a physician. I would say that she was probably the most vocal of the people that I felt was not allowing the expression of the concerns that I had.

I think there were maybe one or two physicians. It wasn't a lot, but it was enough to make me feel that this wasn't a listserv that I wanted to be on. Absolutely the majority of the people on the listserv were not involved in any form of bullying, and there were definitely posts -- I'd say more posts that were supportive of my position.

Q M-hm. And I'm going to show you something.
A Can you hold on for one second.
Q For sure. You can read this eventually. You don't have to -- you can take a time while you read this, and then we can go from there. You can grab a water too. Whatever you need.
A Okay. Thank you.
COUNSEL A. NANDA: Do you want to take -- we can go off the record.

(DISCUSSION OFF THE RECORD)
(PROCEEDINGS RECESSED AT 1:46 P.M.)
(PROCEEDINGS RECONVENED AT 1:50 P.M.)
Q COUNSEL A. NANDA: Is this an email you sent on December 22nd, 2019, on the META:PHI listserv
A Yes, it looks like it.
Q Okay. Listserv. Okay. And that fourth paragraph where you discuss about --
A Yeah.
Q -- the crime in your neighbourhood, robberies that you experienced, can you maybe elaborate a bit more on that.
A Yeah. I mean, to be honest, it was so commonplace that I actually forgot our car was broken into. So one of the thefts would have been the theft of furniture, but we did have our car broken into. Not broken -- like, nothing was smashed, but we had robbery from our vehicle on more than one occasion.
Q And has that influenced your -- well, has the personal experience of crime and robbery in your neighbourhood influenced your position on the -- on safer supply or treatment methods that allow people to access pharmaceutical-grade opioids in the community for their own use?
A I'm going to say that my experience with diverted drugs and the effects of diversion

including my professional and personal experience from living in the community has been part of influencing my understanding regarding the safety of an unwitnessed opioid program.

Q Okay. So these personal experiences are also the basis of the opinion in your affidavit?

A Living in the neighbourhood and personal experiences about the harms of diversion are part of my concerns regarding a non-witness program in general which are listed in the part of the affidavit around diversion. They are separate from my concerns around injecting and the risks of injection of an opioid.

But they're -- in my concerns that I listed as part of my concerns around diversion, they weren't just hearsay. They were certainly about living and being part of the community and seeing the effect on the community. I think it's important to have a lived experience, but that doesn't affect my opinion on the safety of the injecting of pharmaceuticals, but it does affect my knowledge of the downside of diversion.

Q And were there any public health studies or any other studies that supported the notion that it was the introduction of these safer supply programs that led to the increase in crime in

your neighbourhood?
A I'm not aware of a public health study that was conducted to identify the increase of -- no, I'm not aware of a public health study.
Q Are you aware of any studies that support the notion --
A No. No.
Q Let me just finish my question. Just --
A Oh, sorry.
Q -- for the transcript.
Are you aware of any studies that purport to demonstrate that the availability of a safer supply treatment program in London has led to an increase in crime in your neighbourhood?
A I'm going to say I'm aware of an anecdotal evidence that has been reported, but I do not know of a study that has been reported.
COUNSEL A. NANDA: I'd like to enter this as exhibit -- an exhibit to the questioning of Dr. Koivu.
COUNSEL N. GARTKE: No objections.
EXHIBIT A:
EMAIL SENT BY SHARON KOIVU DATED DECEMBER 22, 2019.
Q COUNSEL A. NANDA: Dr. Koivu, throughout your testimony today, you've indicated that you have determined that the death rates from intravenous use of opioid tablets may be equal or higher in

some cases -- or perhaps double the number of deaths from overdoses. Does that accurately reflect what you have testified to today?

A What I believe I testified was that infections from injection drug use can be equal to or as much as double overdose death rates. I cannot specifically say that all of those are related to tablet use, but I can say that injecting a tablet increases your risk of getting an infection.

Q Okay. And, again, there's no study on that point; correct?

A There are studies on that point.

Q Okay. So, like, are those studies in the Canadian context?

A No.

Q Okay.

A No, I am not aware of a Canadian study that has done -- well, I am aware of the study that we've been involved in that can specifically link Hydromorph Contin to endocarditis, and I can say that there are certainly other studies that have been able to link pill form use to infection rate.

Other than the work we've done, I'm not aware of anything in Canada that specifically looks at the risk of infection from tablets.

Q Okay. But that's still something that you maintain that deaths from these -- deaths from infections resulting from intravenous use of medication in pill forms exceeds overdose deaths?
A No. No. I'm -- in fact, deaths from injection drug use exceeds -- can be equal to or higher than overdose deaths.
Q Okay. So deaths from intravenous drug use can be equal or more than double the deaths from overdoses?
A Yes.
COUNSEL N. GARTKE: Sorry. I think -- I didn't think she said more than double. I think she said up to double.
A No, not more than double. Yes. Sorry. It could be up to twice as many, and that was based on the chief of infectious diseases in London who actually did an analysis of that, and his conclusion was that the deaths from injection drug use can be equal to or as much as twice as many as overdoses.
Q Is there a published study?
A It certainly is in presentations that he made. I'd have to go back to see if it's in -- if it's part of his published work.
COUNSEL A. NANDA: Okay. By way of undertaking, I want

you to provide that -- any source to substantiate that claim.

A Okay.

COUNSEL N. GARTKE: Sorry. We'll take that under advisement. But just -- I think we can produce it, but just for clarification, can I have the description of what exactly the study or presentation is that we're talking about.

A As with much information, this is something that was dealing with experts. This is something that I've learned from an expert. So I'm going to go back to a PowerPoint presentation that I believe he provided for me to see if I can find the data that would substantiate that.

I believe that to be -- I absolutely believe it to be true, but I can't clarify what his analysis was. I do know that he looked -- that he did an analysis of it, and this was his conclusion, and I believe I have the information that I can provide for this undertaking.

COUNSEL N. GARTKE: Sorry. For my sake, can we remind me who was this PowerPoint presentation by.

A I haven't discussed that. This was the --

COUNSEL N. GARTKE: Oh, sorry. If we can go back to what my friend asked. Madam Reporter, I'm wondering if can you maybe read -- it was either the question or two questions before the

undertaking.

THE STENOGRAPHER:

"Answer: It could be up to twice as many, and that was based on the chief of infectious diseases in London who actually did an analysis of that, and his conclusion was that the deaths from injection drug use can be equal to or as much as twice as many as overdoses."

COUNSEL N. GARTKE: Okay. Thank you. I think I can provide that undertaking.

UNDERTAKING NO. 3:
PROVIDE THE SOURCE USED FROM THE CHIEF OF INFECTIOUS DISEASES IN LONDON TO SUBSTANTIATE THAT DEATHS FROM INTRAVENOUS DRUG USE CAN BE EQUAL TO OR AS MUCH AS TWICE AS MANY AS OVERDOSES.
*** UNDER ADVISEMENT ***

Q COUNSEL A. NANDA: Great. And so, Dr. Koivu, just to be clear, this is not something that is based on anecdotal evidence but something backed through some sort of academic research?

A My understanding of this infectious disease specialist is he did an analysis -- this is not anecdotal. That he did an analysis to come to this conclusion. I can't go in -- I don't know

the detail. I don't remember the details of the analysis at this time.

Q Okay. Dr. Koivu, you've read the affidavit of Dr. Gupta that was sworn yesterday, which was February 26, 2023; correct?

A Yes.

Q In that affidavit Dr. Gupta raises concerns that your presentation of the availability and use of tablet-based injectable opioid agonist treatment programs is not comprehensive or reflective of the views within the addictions medical community in Canada.

I want you to perhaps respond to that if you have any --

A Okay. Thank you. Certainly I think that there is a lot of controversy in Canada. I would also say that in working with very prestigious, well-recognized addiction specialists in all communities, the vast majority of people that I work with are very concerned about the safer supply programs, of the public supply of unwitnessed drugs.

So I would say that I work with people in London -- of the addiction physicians in London, I am aware of one person that I would say is somewhat neutral. The rest of the physicians that I work with, whether it's at

the rapid access addiction medical clinic or the methadone clinic, do not support the program.

Physicians I know from Toronto, Ottawa, Hamilton, Vancouver, Calgary, do not support the program. These are people who are considered leading experts in their field. I would not say that my view is by any way limited. My view is actually in somewhat -- part of my education is from the view of these very respected addiction physicians that do not support the programs as they are. I'm not sure if that answers --

Q No, for sure. Your opposition to these programs, is that based on the views of these other individuals or any particular studies you've conducted or read?

COUNSEL N. GARTKE: I'm going to object to the question. I don't think she said she's opposed to the program. I believe she said she's raised her concerns. Maybe she can clarify that.

A I have raised my concerns to programs that involve unwitnessed opioids. As far as the concept that there can be multiple layers of how to provide opioid -- or therapy for people who have opioid-use disorder and that this

might -- that prescribing opioids in a tablet form to people could be one of the choices, I'm not opposed to them.

Q Okay. So you believe that in certain instances this form of treatment can be effective?

A I believe in certain instances this form of treatment might be necessary.

Q In what situations?

A I would say in certain scenarios such as where methadone and Suboxone have been trialled and are not effective. If I think that intravenous hydromorphone injectable is certainly an option and receiving oral pills preferably in a witnessed environment may be a necessity if people are not able to have success with other programs.

I think that it is a -- it is something that needs to be in conjunction with other treatment modalities. I also think that if it's used temporarily, it would need to have an exit strategy of a plan of trying to have people leave that program for other programs.

So I see in conjunction with somebody who is a methadone prescriber and a Suboxone prescriber and is well aware of opioid agonist therapies, I can see that as being a tool that could be available for clients in certain

circumstances.

Q So then your opinion is that the use of tablet-based injectable opioid agonist therapy where instant-acting oral hydromorphone is used by patients in intravenous form is a -- or has the potential to be an effective form of treatment for severe opioid-use disorder in Canada?

A What I said was oral.

Q Okay.

A I did not say taking those oral tablets by injection. I think that there is certainly a place for oral therapy because that can be witnessed and that the risks of harm to the patient and to the community can be lessened. There might be other opportunities that include being part of a supervised injection site, but at least at this point those sorts of opportunities don't exist.

But I also think that the risk right now of injecting a tablet -- from what I've seen from people coming into hospital with severe infections, I would say from a cautionary principle, that that would not be something that I would recommend doing. So I don't support injecting pills.

Q Okay. So you do not support the form of

therapy that -- or treatment that Ms. -- the plaintiff receives?

A I believe that the risks outweigh the benefits at this point in time for this -- I think the risks outweigh the benefits, I think, right at this point in time.

Q And -- but you recognize that it is one of the methods of treatment available or offered by addictions doctors in Canada?

A Some addiction doctors. Not all. And absolutely the minority of addiction doctors. This is usually done by people who aren't considered addiction doctors. This is -- the people involved in my area are not considered addiction doctors or have certificates of that competency in addiction or are considered addiction specialists. I can't speak for other communities.

So it is done by people from a different perspective than from an addiction perspective. The vast majority of addiction physicians that I know do not include this as part of their treatment.

Q Well, is that based upon any academic study or academic guideline -- or addictions medical guidelines, or is that something that you just believe anecdotally that addictions physicians

would not offer this form of therapy?
A From the evidence that you've provided for me, there were ten programs that are addiction -- are using this -- maybe there would be more if I added them all up, but it's still a very minority of places where this is available.
And of the places that I know of where it is available, it is a minority of physicians who are involved in the programs.
Q And those physicians are not addictions doctors?
A Sorry. There are a minority of addiction physicians that are involved in the programs. And of the people that I know are involved in the programs, they are not necessarily addiction specialists.
Q Okay. And what is that based on? It's just your kind of anecdotal review, or is that, like, some sort of study you've engaged in, or how do you know that?
A How do I know that? I am very involved in the addiction community. I am very involved with working with people who are addiction specialists. I'm involved in coming up with guide -- you know, I've been involved in the guidelines for macrodosing and microdosing of buprenorphine through Women's College Hospital META:PHI. And I do know that in my area that

the physician that is involved with the safer supply program is not an addiction -- is not an addiction physician or the -- yeah. And the physicians that are involved in the program are not addiction physicians.

I cannot speak for areas outside of my area of London, but I can say that I know an awful lot of addiction physicians through Canada, and the vast majority that I know have concerns about this program as it's -- the program of safer supply as it is being implemented. And it's a lot of numbers. I haven't done a survey, but I have certainly spoken to a number of physicians that share my view.

Q Okay. And that's kind of an anecdotal source to your position. It's not something that there's been a study on or a survey of?

A No. And there certainly hasn't been a survey that would say most -- I mean, unfortunately, because I think if there was a study, I would have a stronger position based on my anecdotal evidence that many more physicians are concerned than are involved in the programs. But I don't know of a study that would say how many physicians support the programs. I don't know the study that says how many physicians

don't support the program.
Q And you mentioned that there are -- the document's provided to you that there are a number of programs in Canada that offer this sort of therapy, this sort of therapy being similar to what the plaintiff receives which is, you know, tablet-based opioid -- injectable opioid agonist therapy where she injects oral hydromorphone in an unsupervised or in an unwitnessed setting?
A Yes. There are other programs that do that as well, yes.
Q Okay. And so it's -- so what the plaintiff -- the therapy that the plaintiff's receiving is not necessarily novel? There are other patients in Canada who are receiving the same form of therapy?
A There are other patients -- there are other patients in Canada that are receiving a similar form of therapy.
Q And there is recognition from at least a portion of the addictions medical community that this is an effective form of treatment?
A I'm not going to -- from the medical community, the addictions community that I am involved with, they do not support that form of treatment. The people that I know that do are

not specifically part of the addictions community; so I'm not able to say that the addictions community supports this. I cannot say that to your question. I cannot answer that question.

Q But you are certain that these programs are operated and staffed by addictions doctors -- sorry. Doctors who are not involved in addictions medicine?

A I don't know who they're staffed by and supported by, and I don't know -- I don't know the numbers; so I would not be able to comment on whether this is something that is provided by addictions physicians or not.

Q Okay. It's just that you said that --

A Sorry.

Q That they were not addictions doctors involved?

A Oh, the ones that I know in my area are not, but I can't speak for the ones in any other area outside of London.

Q Okay. And would you say that in the addictions medical community that there is a -- there is acknowledgement and acceptance of people with severe opioid-use disorder who fit the parameters of this program being treated through intravenous use of oral hydromorphone tablets?

A No.
Q Okay. So that's not something that is recognized as a form of treatment within the addictions medical community?
A I would not say that that is an accepted form -- I mean, it is being used, but what your question was is is this an accepted form within the addictions community, and as I have mentioned, the vast majority of addiction experts that I know do not support the program.

So I cannot say that -- I can say there was controversy. I can say that there are people who absolutely believe in it religiously. I can say that there are people who are very concerned about it. But the majority of the physicians that I know in addiction do not support the program. It is not something that is approved by the addiction community at large. So I --

Q In the London addictions community or the community at large? Because you're saying that you're only --
A No. I cannot -- I mean, I am not aware of anything -- any document that would say that the addiction community supports this. The people that I am aware of I would absolutely -- many more people are concerned about the

program than support the program. I would say it's controversial.

I'd say like your -- there are no evidence-based peer-review studies of the program. That was in what you provided me from Dr. Gupta. I would say that most of the -- most of the documentation is very anecdotal as to benefits and that it is being studied, but I cannot say that it has been proven to be an effective, safe treatment that is accepted by the addiction community.

Q Okay. Have you studied any of these programs?

A Have looked at them? Like, what they do?

Q Have you done research -- primary research with respect to any of these programs?

A No.

Q Have you worked in any of these settings?

A No.

Q Okay. Have you read papers around these --

A Yes, I have.

Q Okay. And, like, is there any reason why -- can information around either the existence or the controversy with respect to these therapies was not included in your expert report?

A My expert report as I had felt that I was doing it was based on my knowledge and my experience and what I could bring from what I knew about

the concerns regarding the program.

I did not try to provided a comprehensive study of the program, and since as was pointed out, there still is no evidence-based study that is peer reviewed supporting the program. There is anecdotal evidence and narratives that I didn't feel were part of what I was trying to -- was part of my study, my documentation. And I have not gone through any literature to find out how much is -- what there is that would be different to what you've provided in Dr. Gupta's.

What I was trying to do in my study or my affidavit was provide experience and -- sort of my experience, my research, and my knowledge of concerns regarding the program. It was not intended to be a review of all programs.

Q Okay. So you didn't do a comprehensive search of this form of therapy for your report?

A I've read many of the things that were included in this -- in Dr. Gupta's report. And, again, as I mentioned, I think most of the studies so far are absolutely saying that there is no peer-reviewed -- it's anecdotal evidence. That there are non-peer-reviewed studies that are under -- that are being done at this time, but I did not feel that any of those studies was

part of my report.
Q And to be clear, your report just highlights the concerns you have based on your experience and opinions with respect to treatment options such as this?
A Yes.
COUNSEL A. NANDA: Okay. Subject to any of the undertakings -- well, those are my questions. Do you have a redirect, Mr. Gartke?
COUNSEL N. GARTKE: Yes, I have a few redirect questions.
Counsel N. Gartke Questions the Witness:
Q COUNSEL N. GARTKE: Dr. Koivu, are you aware of any part of the medical community, scientific research community that would deny the risks of injecting tablets meant for oral use?
A Oh, no. I think even people involved in the program would say that there is absolutely risk to injecting oral pills. Even Dr. Bouman has said in her information that she provided to the plaintiff that injecting pills is a risk. I would not know of anyone who would think that there is no risk to injecting pills.
Q And, similarly, would you be aware of any part of the medical community, scientific community, research community that would support the use of what my friend refers to as TiOAT or tablet

iOAT as a safer or more effective option than treatment involving, for example, an injectable formulation of hydromorphone?

A I would not be aware of someone who would -- to my knowledge, there would not be someone who'd be saying it's safer injecting. It's fairly standard that injecting an injectable form is a safer thing to be doing than injecting something that is not intended for injection drug use.

So I would think that that is fairly standard within the medical community completely to recognize that it is safer to inject an injectable form of medication.

Q Do you recognize that prescribing Dilaudid tablets for injection can result in better outcomes when the only alternative is street-sourced drugs with no wraparound services?

A Yeah. If the only alternative is street-source drugs, then injecting Dilaudid is a lesser of those evils. But yes, I would say that they are -- you know, I would not ever be recommending that somebody be injecting street-source fentanyl. That is certainly an extremely risky thing to do and not recommended. That is absolutely higher risk

than even the high risk of injecting tablets. It is a higher risk to be injecting street-source.

Q And would it be your understanding as well since you've said that you are familiar and had read some of the studies that are attached in Dr. Gupta's affidavit that that would be the comparison they're looking at that what they refer to as TiOAT is safer if the alternative is street-sourced drugs?

A Yeah. There's not been anything that compares it to another program such as a methadone or Suboxone program. I'm not aware of any including in London. Really essentially it's comparing to not having the wraparound services and to having street-source drugs. Yes.

So, for example, in London they did do a comparison, but it was not -- it was only of people who did not have access to other opioid agonist therapies or wraparound services. So their only source was street-source drugs.

Q Is there a reason you didn't include that comparison between TiOAT or injecting Dilaudid tablets versus street-sourced drugs in your report?

A I guess I would think that that was fairly self evident that injecting street-source drugs is a very risky, dangerous thing that we all

recognize as being the most dangerous and that we would -- I would never want to have anyone injecting street-source drugs.

Q I have one last question for you. Among the items in Dr. Gupta's most recent affidavit, he states that you neglect to mention the differences between the infection risks associated with immediate-release hydromorphone or Dilaudid versus controlled-release hydromorphone.

Could you in as much detail as possible explain the difference in infection risks between the two of those.

A Okay. And from my knowledge, and I will not go through my affidavit, but I do reference that there is a difference in the risk.

He also was incorrect now that it is -- that when people inject Hydromorph Contin, it does not turn into a gel. When people inject OxyNEO it does, but what happens when people inject Hydromorph Contin, it's the capsule. It has a -- beads inside. When they're -- to get the release, people grind those beads. You have very large particles that are associated with what's in the suspension. Those large particles when drawn up have been found to damage the tricuspid valve. That's the first

valve.

So anything that's injected to any vein will go through and damage the -- or reach the first heart valve. So our theory around why it was so common that we saw endocarditis above baseline was that it actually damaged the tricuspid valve injecting the larger particles. And in other things like pills, the particles are much smaller; so they pass in through the -- into the bloodstream, not just bombarding the tricuspid valve.

So with Dilaudid, for example, the particles, you grind up a pill. The pill -- that becomes a suspension. The particles are much smaller. They can go farther into the bloodstream. And my understanding from literature I've read is that that damage -- that those small particles can lodge and cause damage.

So it's -- the problem with the particles isn't just infection itself. It's the damage that they can cause. They can cause -- locally they can cause damage to veins. They can farther down cause damage. Once things are damaged, you're at risk of infection.

With Hydromorph Contin, we were able to

show that it specifically prolonged the life of bacteria. So -- and viruses. So if you were reusing a cooker for example or reusing your filter, there would be more bacteria in it. That is not the case with Dilaudid.

But we also felt that what we were seeing with infections could be related to the damage caused by the particles themselves, and the source of infection could be something different so that if you had an abscessed tooth, for example, and had already damaged your tricuspid valve, you would be at risk of infection.

We also did show that the only way to make sure there was no bacteria in what you're injecting was to actually heat it to -- for ten -- or boiling for ten seconds, and that was the only way to eliminate bacteria in any type of injecting of pills.

COUNSEL N. GARTKE: Okay. That's all my questions. Thank you.

COUNSEL A. NANDA: I'll ask some more questions.

Counsel A. Nanda Questions the Witness:

Q COUNSEL A. NANDA: Dr. Koivu, you're aware of the plaintiff's situation and her transition to this new treatment option under the -- those new regulations; correct?

A Yes.
Q Okay. In the evidence there is a suggestion -- or there's evidence from the plaintiff that she has currently a treatment regime that requires her to dose at three times a day, and consistently she takes a set dose for each time -- each of those three times. Under the new regulation, each time has to be -- each dose has to be witnessed at a set facility near downtown Calgary.

According to her current dosing times, two of the three doses occur when that facility is not open. In that case, she'll be without her medication. I want you to comment on the efficacy of the proposed treatment when for two of her three dosing times, the facility is not open.

A I think that it is really important that Ophelia has a treatment plan that includes working with an addiction physician and working towards having a seamless transition. The injecting of an opioid into -- for her to be injecting opioids, what I have found in hospital is that it is not -- that being able to change the timing of when people receive doses is not something that is physiologically a difficult thing to do. So the timing of when

people get their medication is often organized, for example, in hospital around when a nurse is available to give it.

So finding times that work within the structure of an injection drug use facility, I believe that that would be something that would be able to be worked towards. In addition what's often used in places where they're injecting is something like long-acting Kadian to tide people over until they can get there.

She has stated that she is benefitting from the euphoric effect of injecting. There is a comment that she is -- 60 percent of her addiction is addiction to the needle and 40 percent to the opioid.

Q Where is that? I have not seen that.

A That was a comment from her physician early on. It's in -- I don't have it. I can't show it to you. But it's in --

Q Yes, I'm not aware of that. I am not aware of that at all.

A In the summary that I received, there was a statement that she was 40 percent addicted to the needle and -- sorry. 60 percent addicted to the needle and 40 percent addicted to the opioid, which means when she is -- if she takes her Kadian at home and feels she needs the

euphoric effect, there is argument for using something like injectable saline.

It would not be my first choice, but if, in fact, she feels this need to inject, that is something that has been done in other centres that -- injecting something like saline so that you get that feeling of the need to inject which might be part of what she's experiencing. She has stated that she used to self harm, and sometimes the feeling of the needle is something that people need. It doesn't have to be associated with the drug. It can be associated with something safer.

Kadian, as I say, can be used. It's often used. You know, you take your doses. Your last dose you have a witnessed dose of Kadian, and it will provide you with support to protect you from the cravings and the withdrawal.

So I do think that it's possible to develop a treatment strategy that is so much safer for her than the one that she has now within what is available to her. Again, I would say that that is something that needs to be developed with physicians that are involved in her care, but the option of receiving injectable hydromorphone, which is known to be safe, compared to the option of injecting a

pill which, I think, from a precautionary principle, at the very least has significant risk particularly in someone as young as she is.

Then the other treatments options that are available to her, I think we can find an option that will be able to meet her needs physically and emotionally.

Q You have not worked in an outpatient -- well, you have limited to no experience working in an outpatient addictions clinic; correct?

A I have limited experience, yes.

Q You also said that changing dosing times may not have a physiological effect or a limited physiological effect based on your experience in the hospital setting.

But what about other effects? Psychological effects, other things from changing dosing times?

A You know, I've never seen that. It can happen. I'm not saying that that's not possible, but I've actually -- I've worked with lots of people where we had to accommodate various time change schedules, and the timing of their medication has not been something that was difficult to work around.

Again, you're right. My experience is

within a hospital setting, but I have not experienced anyone that I've worked with when we've have to deal with changing their times, that that has been a -- that has been not one of the main challenges that I've ever faced, and it's not infrequent that people have to change the timing of their opioids for various reasons. Scheduling, nursing, appointments to go to get a CT scan.

Timing is changed on a very regular basis, and an emotional problem or a problem physiologically or emotionally related to it has not been something that has been a significant problem. We can work around timings for cravings and expectation of withdrawal. So in my experience that has not been a problem that I have seen.

Q Your experience is limited to circumstances that the plaintiff is not in and not receiving --

A Yes.

Q Correct?

A Yes. Yes.

Q What else is there I want to say? Okay. In her affidavit the plaintiff is quite adamant that given her circumstances, given the barriers she identifies to access treatment

under the new regulatory regime, her only option is street-sourced opioids.

My question to you is that in circumstances where patients do not accept a form of opioid agonist therapy, would you accept -- or, sorry. That's a bad -- would you agree with me that the likelihood of reverting to street-sourced opioids is high?

A I would accept that when patients don't have options, the likelihood of returning to street-source opioids is high. I actually -- I'm going to say I can't really comment on a case of having something that's safe and available and turning that down to use street-source opioids. That would not be something that I can comment on as I don't see that.

I certainly do see people who don't want to be part of certain treatment plans that can be available to them choosing to go to street-source opioids, but I have not seen someone who has the scenario where they have something that they're taking that has a risk to them and that something's being offered that has less risk and that they would choose to go back to the street.

Q You haven't seen that as you worked primarily

in outpatient -- or inpatient centres?
A Pardon me?
Q You haven't seen that because you work primarily in inpatient centres?
A My experience with working with people and with people -- yes, where I -- it's not something I could say I'm aware that when people don't want their treatment, they can go back to the street, but I cannot comment on, I'm turning down a safer treatment plan when it's available. I'm not sure I could really make a comment on that --
Q That's not within --
A -- based on my experience.
Q That's not within your expertise?
A No.
Q Okay. And what about for treating severe opioid-use disorder? Are forced treatments -- what's a consequence of forcing someone to go along with a particular treatment without their consent or otherwise forcing them into treatment?
A Having treatment without consent is never going to be effective. You know, people have to consent to treatment. It's not even ethical to be giving treatment that they don't consent to.
Q But in this context would you agree with me that if a patient does not accept a new or

modified form of treatment, they're going to disengage?

A I'm sorry. They're going to disengage? I think that there's -- motivational interviewing needs to happen. I believe that this patient believes that this is something that she should be allowed to access and wants to access this. I don't -- I think that a really good understanding of what is available to her and what she can access, I don't -- I really can't comment. I think that --

Q My question is not about, though. I'm asking --

A Okay. Maybe rephrase the question.

COUNSEL A. NANDA: Amanda, could you read the question back.

THE STENOGRAPHER:

"Question: But in this context would you agree with me that if a patient does not accept a new or modified form of treatment, they're going to disengage?"

A I believe that that is a possibility that they could disengage.

Q COUNSEL A. NANDA: And if they disengage, reversion to street-source opioids is almost a certainty if they live with severe opioid-use disorder?

A It is one of the possibilities if someone disengages. I --
Q A high --
A Pardon me?
Q Sorry. You were completing your answer.
A My experience has been very much with working with people who've disengaged in treatment and working through motivational, interviewing, and encouraging people with their own motivational interviewing to become engaged in treatment. My experience personally has been very much about engaging people in treatment.

So my experience is about finding motivational interviewing and working with people to engage them in treatment.

COUNSEL A. NANDA: I think my question was about something else. Amanda, could you read back the previous question.

THE STENOGRAPHER:

"Question: And if they disengage, reversion to street-source opioids is almost a certainty if they live with severe opioid-use disorder?"

A If they disengage, I would be encouraging them to be part of a setting in which they can have motivational interviewing and work towards other treatment within their -- what is

available to them. If anyone disengages completely from treatment, they are at risk to going back to street-sourced opioids.

Q COUNSEL A. NANDA: But by very nature of their medical condition, there's a need to self medicate, and if they're not in treatment, they'll turn to street-source opioids. Is that fair?

A If they're not in treatment, they are at risk of returning to street-source opioids.

Q Okay. And in that scenario, street-source opioids is dangerous -- more dangerous and more likely to cause death than a -- than the program that the plaintiff is on, which I'll term as a tablet-based injectable opioid agonist treatment program?

A Yes. I think the tablet-based injectable opioid agonist treatment program has risks, and -- has risks of death, but I would absolutely say that street-source opioids -- or street-source fentanyl has the greatest risk.

Q So in this case where you have the plaintiff who is rejecting the modified or new treatment regime under the new regulatory frame from Alberta government because she identifies various barriers and she states unequivocally that she will return to street-source opioids

as a result, is the current treatment regime safer than a return to street-source opioids?

A The current treatment regime is safer than street-source opioids.

COUNSEL A. NANDA: Okay. Those are my questions subject to any undertakings.

COUNSEL N. GARTKE: I have no further questions either.

PROCEEDINGS ADJOURNED AT 2:45 P.M.

SUBJECT TO THE ABOVE COMMENTS

CERTIFICATE OF TRANSCRIPT

I, the undersigned, hereby certify that the foregoing pages are a complete and accurate transcript of the proceedings taken down by me in shorthand and transcribed from my shorthand notes to the best of my skill and ability.

Dated at the City of Edmonton, Province of Alberta, this 28th day of February, 2023.

Amanda Hebb, CSR(A)
Certified Shorthand Reporter

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EXHIBIT “D”

Our Waterloo Region Community Health Van

For many years, Sanguen Health Centre has worked with people who are living with or at risk of contracting Hepatitis C. As an organization we were aware that community health outreach is one of the most effective strategies to engage with people who live 'outside' of the system, who are marginalized, chronically poor, homeless or at risk of homelessness and who use substances. Creating the ability to go out and meet people where they are at really decreases barriers faced in accessing services, and builds relationship of trust and respect that translates immediately into better whole health outcomes. The model of a mobile community health van just made sense for Sanguen and the work we wanted to accomplish, and so the long road to acquire community partners and funding began.

The Waterloo Region Community Health Van was launched in 2015, and services have grown through partnerships with the Region of Waterloo and the TELUS HEALTH FOR GOOD Program. The 'Van' services Kitchener and Cambridge and makes different stops throughout these cities. Our interdisciplinary team staffs the Van, and connects community members with harm reduction supplies, such as new drug gear, needle exchange, condoms, etc; naloxone training and distribution; food, clothing, hygiene items, nursing, peer and social supports.

The Community Health Van works in close collaboration and partnership with so many other excellent services, strengthening the services offered to our community members.

Nursing Care Announcement:

THE HEALTH VAN IS STAFFED BY AN INTERDISCIPLINARY AND MULTI-AGENCY TEAM MADE UP OF A HARM REDUCTION COORDINATOR, PEER SUPPORT COORDINATOR, REGISTERED NURSE, SOCIAL SUPPORT COORDINATOR, PEER

SANGUEN

ERS, AND A HARM REDUCTION NURSE. IN ADDITION, ON OUR WATERLOO VAN
PLE CAN RECEIVE NURSING SUPPORT PROVIDING WOUND CARE, VACCINES,
NG FOR HIV, HEP C AND STBBIS, ETC. ON THE VAN, NURSES ARE ALSO ABLE TO

OFFER HIV TAKE HOME TESTING.




Important Update

WE CAN PICK UP DONATIONS, HOWEVER, WE ARE STILL NOT DOING HOME DELIVERIES FOR HARM REDUCTION.

Van Schedule

Monday Kitchener	Tuesday Cambridge	Wednesday Kitchener	Thursday Kitchener	Friday
– The Healing of the Seven Generations (10:30am-10:50am)	– Preston Kiwanis Building 1195 King St East (2:30pm-3:20pm)	-100 Victoria Street Encampment (11:30-12:20pm)	– A Better Tent City (1:00pm-2:00pm) – Weber Inn	No Service

Transitional Housing (11:00am-11:30am)

– Cambridge Foodbank Parking lot (3:30pm-4:30pm)

– 1470 Block Line Rd. Women's Supportive Housing (12:30pm-1:20pm)

– Mayflower Motel (1:30pm-3:00pm)

– Ray of Hope (5:00pm-6:15pm)

– Ray of Hope (6:30pm-8:00pm)

Please Note: **The KW Van is not running Dec 25 & 26 and January 1st but is otherwise the regular schedule.**

We are still not doing home deliveries for harm reduction.

On nights when The Van is out you can call or text 519-591-4826 to get an update on our location.

What Do The Vans Carry?

- ✓ **EMERGENCY CONTRACEPTION**
- ✓ **NURSING SERVICES & VEIN AND WOUND CARE**
- ✓ **HARM REDUCTION SUPPLIES AND**
- ✓ **SNACKS & DRINKS**
- ✓ **CLOTHING**
- ✓ **HYGIENE PRODUCTS**

- LUBRICANTS (INCLUDING LATEX FREE)
- NALOXONE KITS & OVERDOSE PREVENTION TRAINING
- SHARPS CONTAINERS PICKUPS
- SUPPORTIVE COUNSELING
- HEPATITIS, H.I.V. AND STI TESTING
- PREGNANCY TESTING

We Need Your Support.

Community support is crucial to the success of The Van. As a registered charity, Sanguen will provide a tax receipt for your donations.

- You can donate to The Van various ways through our Donations Page
- If you'd like to donate food, clothing, hygiene, or other items, or if you work for an agency or group that offers services or supports, and you'd like to be part of The Van project,please contact our Van Coordinator to find out our current needs.

Visit The Community Health Van – Waterloo Region on Facebook

EXHIBIT “2”

JAMA Intern Med. 2018 Jul 30;178(9):1242–1248. doi: 10.1001/jamainternmed.2018.2924

Mortality Among Unsheltered Homeless Adults in Boston, Massachusetts, 2000-2009

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See "Prevalence of SARS-CoV-2 Infection in Residents of a Large Homeless Shelter in Boston" in *JAMA*, volume 323 on page 2191.
See commentary "Death Among the Unsheltered Homeless: Hidden in Plain Sight." with doi: 10.1001/jamainternmed.2018.2919.

Key Points

Question

What are the mortality patterns for unsheltered homeless adults who primarily sleep outdoors?

Findings

In this 10-year cohort study of 445 unsheltered homeless adults, the age-standardized all-cause mortality rate was almost 3-fold larger than that for a cohort of homeless adults primarily sleeping in shelters and nearly 10-fold larger than that for the adult population of Massachusetts; both represented significant differences. Common causes of death were cancer and heart disease.

Meaning

Interventions and models of care need to address the unique needs of the unsheltered homeless adult population to improve outcomes.

Abstract

Importance

Previous studies have shown high mortality rates among homeless people in general, but little is known about the patterns of mortality among "rough sleepers," the subgroup of unsheltered urban homeless people who avoid emergency shelters and primarily sleep outside.

Objectives

To assess the mortality rates and causes of death for a cohort of unsheltered homeless adults from Boston, Massachusetts.

Design, Setting, and Participants

A 10-year prospective cohort study (2000-2009) of 445 unsheltered homeless adults in Boston, Massachusetts, who were seen during daytime street and overnight van clinical visits performed by the Boston Health Care for the Homeless Program's Street Team during 2000. Data used to describe the unsheltered homeless cohort and to document causes of death were gathered from clinical encounters, medical records, the National Death Index, and the Massachusetts Department of Public Health death occurrence files. The study data set was linked to the death occurrence files by using a probabilistic record linkage program to confirm the deaths. Data analysis was performed from May 1, 2015, to September 6, 2016.

Exposure

Being unsheltered in an urban setting.

Main Outcomes and Measures

Age-standardized all-cause and cause-specific mortality rates and age-stratified incident rate ratios that were calculated for the unsheltered adult cohort using 2 comparison groups: the nonhomeless Massachusetts adult population and an adult homeless cohort from Boston who slept primarily in shelters.

Results

Of 445 unsheltered adults in the study cohort, the mean (SD) age at enrollment was 44 (11.4) years, 299 participants (67.2%) were non-Hispanic white, and 72.4% were men. Among the 134 individuals who died, the mean (SD) age at death was 53 (11.4) years. The all-cause mortality rate for the unsheltered cohort was almost 10 times higher than that of the Massachusetts population (standardized mortality rate, 9.8; 95% CI, 8.2-11.5) and nearly 3 times higher than that of the adult homeless cohort (standardized mortality rate, 2.7; 95% CI, 2.3-3.2). Non-Hispanic black individuals had more than half the rate of death compared with non-Hispanic white individuals, with a rate ratio of 0.4 (95% CI, 0.2-0.7; $P < .001$). The most common causes of death were noncommunicable diseases (eg, cancer and heart disease), alcohol use disorder, and chronic liver disease.

Conclusions and Relevance

Mortality rates for unsheltered homeless adults in this study were higher than those for the Massachusetts adult population and a sheltered adult homeless cohort with equivalent services. This study suggests that this distinct subpopulation of homeless people merits special attention to meet their unique clinical and psychosocial needs.

This cohort study investigates all-cause and cause-specific mortality and age-stratified incident rate ratios among unsheltered homeless adults in Boston, Massachusetts, 2000-2009, compared with the entire Massachusetts population and also with a cohort of sheltered homeless adults in Boston.

Introduction

A paucity of literature exists regarding the health status of unsheltered, urban homeless adults, also known as "rough sleepers." These elusive, yet highly visible unsheltered individuals eschew organized shelters and choose to sleep on park benches, in back alleyways, in doorways, under bridges, near train stations, and in abandoned cars.

In the United States, the unsheltered population constitutes more than a third of the overall homeless population, with an estimated 192 875 people sleeping unsheltered on a single night in January 2017.[1] Most of these individuals were men 24 years or older of white or non-Hispanic race/ethnicity.[1] Despite their visibility, this population wanders across our urban landscapes, and data on these individuals are difficult to gather. Previous studies of mortality have focused on the homeless population who primarily sleep in shelters, and these studies have found higher rates of death in homeless populations compared with nonhomeless populations.[2,3,4,5,6,7,8,9] Studies from the 1980s showed common causes of death to be from substance use disorders and unintentional injuries.[3,4,5] Studies from the 1990s revealed HIV/AIDS, when combined, to be a leading cause of death.[6,7] More recently, unintentional overdose was shown to have replaced HIV/AIDS as a leading cause of death in the homeless population.[10] Literature on the unsheltered population has shown that they have more risk factors for death, more behavioral health issues, more trauma, and poorer health than their sheltered counterparts.[11,12,13] However, these studies have not looked specifically at mortality outcomes for unsheltered individuals, whose unique blend of comorbidities and environmental exposures may place them at higher risk for death.

A better understanding of the demographics, mortality patterns, and causes of death among unsheltered individuals could inform social policy and clinical practice initiatives to improve outcomes in this vulnerable population. To address the current gap in the literature about this unique subpopulation, we conducted a 10-year, prospective cohort study using an unsheltered cohort from Boston, Massachusetts, that was established in 2000 and followed up through the end of 2009. We described the unsheltered cohort, examined causes of death, and calculated age-specific rate ratios and age-standardized all-cause and cause-specific mortality rates and compared this cohort with both the nonhomeless adult population living in Massachusetts and a cohort of homeless adults living in Boston who primarily slept in emergency shelters. We hypothesized that the unsheltered cohort would have higher all-cause and cause-specific mortality rates than the nonhomeless and sheltered homeless populations, and that those unsheltered homeless individuals would die prematurely from common but preventable and treatable causes, such as cancer, heart disease, and substance use disorders.

Methods

Study Population

The study population consisted of adults living outside who were primary care patients of the Boston Health Care for the Homeless Program's (BHCHP's) Street Team. Eligibility criteria for the study included the following: (1) sleeping outside for 1 or more nights during 2000; (2) 18 years or older by January 1, 2000; (3) at least 1 face-to-face encounter with the BHCHP's Street Team staff during 2000; and (4) a first and last name and either a date of birth or a Social Security number in the study database. Participants were excluded if there was a lack of identifying information in the study database. Of 568 records in the BHCHP's Street Team database, 445 unsheltered adults (78.3%) met the eligibility criteria. The study was approved by the institutional review board of Boston University Medical Center, Boston, Massachusetts. Participant informed consent was waived by BHCHP. The study posed minimal risk to privacy.

Study Design and Data Collection

We conducted a 10-year prospective study from January 1, 2000, through December 31, 2009. Data analysis was performed from May 1, 2015, to September 6, 2016. Data from face-to-face encounters with the BHCHP's Street Team were used for the study and stored prospectively. Face-to-face encounters for primary care consisted of a BHCHP's Street Team clinician meeting an unsheltered individual on the street or at an outside location during a daytime or nighttime clinical session. The clinicians of the BHCHP's Street Team documented these encounters on paper at the time of the visit and the notes were later transcribed by a research assistant into a database (Microsoft Office Access; Microsoft Corporation). Data collected at the initial and subsequent visits included the following information: first and last names, date and location of the encounter, date of birth, Social Security number, sex, race/ethnicity, medical and behavioral health diagnoses, and the name of the clinician performing the visit. Any new data, such as a date of death, was added to the database. The cohort had no known duplicates, and no individual was added to the cohort after December 31, 2000. Everyone in the cohort was alive at the time of enrollment.

After the study concluded, the database was matched to BHCHP's electronic medical record to confirm data such as the correct spelling of the first and last name, sex, race/ethnicity, date of birth, and Social Security number. The records were then matched with the Massachusetts Department of Public Health death occurrence files from 2000 to 2009 (received on CD from Massachusetts Department of Public Health; November 3, 2014) in the manner described below to confirm deaths,

add the dates of deaths if they were previously unknown, and add the underlying and multiple causes of death. Over the course of the study, reports were requested from the National Death Index[14] in 2006 and in 2011 to investigate the possibility of a death occurring outside the state for a proportion of the cohort whose whereabouts were unknown. Data extracted from the National Death Index[14] reports included the date of death, the state in which death occurred, and the underlying and multiple causes of death.

All data describing the causes of death were in the format of the *International Statistical Classification of Diseases and Related Health Problems, Tenth Edition* (*ICD-10*) diagnosis codes. The data identifying the underlying and multiple causes of death taken from the Massachusetts Department of Public Health and the National Death Index[14] were previously processed by the National Center for Health Statistics using well-established computer algorithms to select the underlying cause of death from conditions reported on death certificates. Underlying causes of death codes were used for this study and grouped based on previous literature.[7,10,15,16] Definitions of codes from the Centers for Disease Control and Prevention (CDC) Wide-Ranging Online Data for Epidemiologic Research (WONDER) were also used for interpretation of the *ICD-10* codes.[17] The *ICD-10* groupings, terminology, and definitions used to combine the *ICD-10* categories can be found in the eTable in the Supplement.

Race/ethnicity categories created by BHCHP were as follows: non-Hispanic white, non-Hispanic black, and persons of color/unknown identified as Asian, Hispanic, American Indian, or unknown race/ethnicity. Age categories included 18 to 44 years, 45 to 64 years, and 65 to 84 years. Sex was dichotomous without unknowns. There were 2 variables with missing data: Social Security number was missing in 15 of 445 records (3.4%) and race/ethnicity, 7 of 445 records (1.6%).

Comparison Groups

Two comparison groups (the Massachusetts population and a sheltered homeless cohort from Boston) were used to calculate the standardized mortality ratios (SMRs). Data for the Massachusetts population were taken from the CDC's WONDER for ages 18 to 84 years from 2000-2009. The Massachusetts population was chosen as a comparison group because our study methods were analogous to methods used in a 2013 study by Baggett et al,[10] who also used the Massachusetts population as a comparison group.

Data for the adult homeless cohort were obtained from the 2013 study by Baggett et al.[10] They retrospectively assembled a homeless cohort of 28 033 adults 18 years or older who had 1 or more

encounters with a BHCHP clinician between January 1, 2003, and December 31, 2008.[10] The comparison cohort included homeless adults who were seen by BHCHP from 2003 to 2008.[10]

Matching Data

Link Plus 2.0, a probabilistic record linkage program developed at the CDC Division of Cancer Prevention and Control in support of the CDC's National Program of Cancer Registries, was used to match BHCHP's data to the Massachusetts Department of Public Health data. Each match was manually reviewed. A death record was accepted as a match if it had the same data on 1 or more of the following: Social Security number; first and last name and month and year of birth within a range of 1 year; or first and last name and month and day of birth.[7,10,14] The algorithm was similar to that used by the National Death Index[14] to match records and has been reliably used by previous researchers who studied mortality among homeless populations.[7,10,14]

Statistical Analysis

We described the demographic characteristics of the unsheltered cohort overall and by subgroups, including sex and vital status (whether the cohort member was alive or dead and information about the decedent). Among those in the cohort who died, we noted the place of death and whether an autopsy was performed.

Crude mortality rates for all-cause and cause-specific mortality were calculated using the number of deaths in each category divided by person-years of observation for that category to create incident rates, expressed as events per 100 000 person-years. Strata-specific incident rate ratios were calculated by taking one crude mortality rate within a stratum and dividing it by another crude mortality rate within the same stratum. For rate ratios, women, non-Hispanic white, and the young age category (18-44 years) were used as reference groups.

Age-standardized all-cause and cause-specific mortality rates were calculated using indirect standardization, with the unsheltered cohort as the standard population. The SMRs were calculated as follows: by creating age-specific mortality rates per person-year for young (18-44 years), middle (45-64 years), and old age (65-84 years) categories for both the Massachusetts population and the adult homeless cohort; by multiplying the age-specific mortality rates by the age-specific person-years from the unsheltered cohort; by summing the 3 age-specific results to determine the expected number of deaths; and then by dividing the number of observed deaths by the number of expected

deaths. The SMRs were calculated when the number of deaths in a category was 5 or more.[15]

Statistical analyses were performed using Stata, version 14 (StataCorp) and Microsoft Excel 2013 (Microsoft Corporation) and consisted of calculating incidence rates, rate ratios, and SMRs. Corresponding 95% CIs for rates and ratios were calculated using OpenEpi (Open Source Epidemiologic Statistics for Public Health), version 3.01.[18] A 2-sided significance level of <.05 was used for testing.

Results

Cohort Characteristics

The study cohort comprised 445 unique unsheltered adults who were followed for a total of 3608.7 person-years (mean, 8.2 years; range 0.1-9.9 years). The mean (SD) age at enrollment was 44 (11.4) years with a range of 18 to 81 years. Of 445 participants in the cohort, 299 (67.2%) were non-Hispanic white and 322 (72.4%) were men (Table 1).

Table 1. Characteristics of the Unsheltered Cohort, 2000-2009.

Characteristic	No. (%)					
	Unsheltered Adult Homeless Cohort				Sheltered Adult Homeless Cohort ≥18 y (n = 28 033)[a]	MA 2000 Census Population ≥18 y (n = 4 849 033)[b]
	Full Cohort (N = 445)	Men (n = 322)	Women (n = 123)	Decedents (n = 134)		
Age, y						
18-44	248 (55.7)	165 (51.2)	83 (67.5)	56 (41.8)	17 298 (61.8)	2 569 111 (53.0)
45-64	176 (39.6)	140 (43.5)	36 (29.3)	65 (48.5)	9924 (35.4)	1 419 760 (29.3)
≥65	21 (4.7)	17 (5.3)	4 (3.3)	13 (9.7)	811 (2.8)	860 162 (17.7)
Race/ethnicity						
Non-Hispanic white	299 (67.2)	223 (69.3)	76 (61.8)	108 (80.6)	11 912 (42.5)	4 180 644 (86.1)
Non-Hispanic black	94 (21.1)	62 (19.3)	32 (26.0)	15 (11.2)	8066 (28.8)	236 027 (4.9)
Persons of color or unknown[c]	52 (11.7)	37 (11.5)	15 (12.2)	11 (8.2)	8055 (28.7)	432 362 (8.9)
Sex						
Men	322 (72.4)	NA	NA	116 (86.6)	18 612 (66.4)	2 289 671 (47.2)
Women	123 (27.6)	NA	NA	18 (13.4)	9421 (33.6)	2 559 362 (52.8)

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Abbreviations: MA, Massachusetts; NA, not applicable.

[a]Adult homeless cohort from the study by Baggett et al.[10]

[b]Based on US Census Bureau data.[19]

[c]Individuals who identified as Asian, Hispanic, American Indian, or whose race/ethnicity was unknown.

Decedent Characteristics

Of the 445 unsheltered adults, 134 died during the study period. A total of 122 deaths were confirmed through linkage with the Massachusetts Department of Public Health data, and an additional 12 records were manually matched to the National Death Index[14] reports. The mean (SD) age at death was 53 (11.4) years. Of the 134 decedents, 116 (86.6%) were men and 108 (80.6%) were non-Hispanic white. A mean (SD) of 13 (3.4) deaths per year occurred throughout the study. Most deaths (87 of 134 [64.9%]) occurred inside a health care facility (ie, inpatient wards, outpatient clinics, emergency departments, and nursing homes), and 48 (35.8%) resulted in an autopsy.

Mortality Rates

The crude mortality rate overall was 3713.2 (95% CI, 3110.9-4397.5) deaths per 100 000 person-years (Table 2). The race/ethnicity specific mortality rate ratio for non-Hispanic blacks was 0.4 times the rate ratio of death for non-Hispanic whites (95% CI, 0.2-0.7; $P < .001$) (Table 2). The SMR for the unsheltered cohort was 9.8 (95% CI, 8.2-11.5) relative to the Massachusetts population and 2.7 (95% CI, 2.3-3.2) relative to the sheltered adult homeless cohort (Table 3).

Table 2. Stratum-Specific Mortality Rates and Rate Ratios of Unsheltered Cohort, 2000-2009.

Characteristic	Deaths, No. (%)	Person-Years, No.	Mortality Rate, Deaths per 100 000 Person-Years (95% CI)	Rate Ratio (95% CI)	*P* Value
Overall	134 (100)	3608.7	3713.2 (3110.9-4397.5)	NA	NA
Age, y					
18-44	56 (41.8)	2124.6	2635.8 (1990.7-3422.2)	1 [Reference]	NA
45-64	65 (48.5)	1350.3	4813.8 (3716.0-6136.9)	1.8 (1.3-2.7)	<.001
65-84	13 (9.7)	133.8	9715.9 (5165.6-16589.9)	3.7 (1.8-6.8)	<.001
Race/ethnicity					
Non-Hispanic white	108 (80.6)	2325.2	4644.7 (3810.5-5608.3)	1 [Reference]	NA
Non-Hispanic black	15 (11.2)	835.4	1795.5 (1005.4-2962.9)	0.4 (0.2-0.7)	<.001
Persons of color or unknown[a]	11 (8.2)	448.1	2455.1 (1225.7-4393.3)	0.5 (0.3-1.0)	.03
Sex					
Women	18 (13.4)	1130.6	1592.1 (943.2-2515.3)	1 [Reference]	NA
Men	116 (86.6)	2478.1	4681.0 (3868.2-5614.7)	2.9 (1.8-5.1)	<.001

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Abbreviation: NA, not applicable.

[a]Individuals who identified as Asian, Hispanic, American Indian, or whose race/ethnicity was unknown.

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Table 3. Age-Standardized All-Cause and Cause-Specific Mortality Ratios for the Unsheltered Cohort (2000-2009) Compared With the Massachusetts Population (2000-2009) and With a Sheltered Adult Homeless Cohort (2003-2008)[a].

Underlying Cause of Death[b]	Overall Deaths, No. (%) (n = 134)	SMR (95% CI)[c]	
		Unsheltered Homeless Adults vs MA Population	Unsheltered vs Sheltered Homeless Adults
All causes for entire cohort	134 (100)	9.8 (8.2-11.5)	2.7 (2.3-3.2)
Natural causes			
Cancer	21 (15.7)	4.8 (3.1-7.3)	2.8 (1.8-4.2)
Heart diseases	18 (13.4)	6.4 (3.9-9.9)	2.4 (1.4-3.7)
Chronic substance use	16 (11.9)	88.9 (52.7-141.5)	4.2 (2.5-6.7)
Chronic liver disease	15 (11.2)	32.2 (18.7-51.9)	4.5 (2.6-7.3)
HIV/AIDS	10 (7.5)	63.8 (32.4-113.8)	3.4 (1.7-6.0)
Ill-defined conditions	5 (3.7)	26.8 (9.8-59.3)	NC
External causes			
Nonpoisoning injuries[d]	19 (14.2)	33.3 (20.7-51.1)	7.1 (4.4-11.0)
Drug overdose	8 (6.0)	14.1 (6.5-26.7)	0.9 (0.4-1.7)[e]
Substance use disorder causes	39 (29.1)	43.6 (31.4-58.9)	2.5 (1.8-3.3)
Alcohol use disorder	30 (22.4)	110.2 (75.7-155.3)	NC
Opioid use disorder	9 (6.7)	15.7 (7.6-28.8)	NC

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Abbreviations: *ICD-10, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision*; MA, Massachusetts; NC, not calculated; SMR, standardized mortality ratio.

[a]Adult sheltered homeless cohort from the study by Baggett et al.[10]
[b]There were no unknown causes of death, and fewer than 5 deaths in each category were suppressed.
[c]The SMR was calculated when there were 5 or more deaths in each category.
[d]Nonpoisoning injuries (*ICD-10* diagnosis codes): transportation accidents (codes V01-V99), other external causes of accidental injuries (codes W00-X59, except X40-X49), and events of undetermined intent (codes Y20-Y34, except Y10-Y19). Methodology in combining the *ICD-10* categories were based on the Health of Boston 2014-2015 report.[15]
[e]The SMR was not significant.

Causes of Death

Thirty-nine deaths (29.1%) were directly attributable to substance use disorders and unintentional overdose (Table 3). Nonpoisoning injuries represented 19 of the 134 deaths (14.2%). Mortality rates in the unsheltered cohort for HIV/AIDS (10 of 134 deaths [7.5%]) were considerably higher than rates in the Massachusetts population and in the sheltered adult homeless cohort, and SMRs were significantly elevated among the unsheltered cohort when compared with both the Massachusetts population (SMR, 63.8; 95% CI, 32.4-113.8) and the sheltered adult homeless cohort (SMR, 3.4; 95% CI, 1.7-6.0). The one exception was drug overdose, which did not differ between the unsheltered cohort and adult homeless cohort (SMR, 0.9; 95% CI, 0.4-1.7). No deaths occurred from diabetes or tuberculosis. External causes, such as suicide, homicide, and hypothermia, which were included in the nonpoisoning injury category, accounted for fewer than 5 deaths each.

Discussion

All-cause mortality rates in the unsheltered cohort were nearly 3 times greater than those in an adult homeless cohort and almost 10 times greater than in the Massachusetts population. Our cause-specific mortality findings underscore a high burden of substance use in this population. In addition to the deaths directly attributable to substance use, many of the deaths due to nonpoisoning injuries, which primarily included motor vehicle crashes, falls, and drownings, have been shown by previous researchers to be related to alcohol or other drug use.[20,21,22] The SMR for nonpoisoning injuries was high for the unsheltered cohort compared with the adult homeless cohort; these results may indicate a possibly greater risk of death for rough sleepers, but more research is warranted. Other common causes of death, such as cancer and heart disease, have a strong link to cigarette smoking, which is highly prevalent among homeless people.[20] To effectively decrease morbidity and mortality in the

unsheltered population, it is necessary to have fully integrated clinical outreach teams to meet rough sleepers where they live on the streets in order to establish and maintain continuity of care.[13,23,24] Addiction treatment and recovery programs should be readily available, with treatment on demand to support motivation for action and prevent further morbidity and mortality. Future research should include harm reduction policies, such as managed alcohol programs or supervised injection sites within shelters and homeless programs, which might make shelters more tolerable for those who currently fear substance abuse withdrawal.[25,26]

Higher rates of death among non-Hispanic white individuals compared with non-Hispanic black individuals and persons of color have been consistently observed in previous studies of homeless persons, and the causes for this phenomenon are likely multifactorial.[2,4,5,7,8,10] Similarly, studies have shown that homeless men have higher rates of death than homeless women. Non-Hispanic white individuals and men, on average, have more economic resources than non-Hispanic black individuals and women and are less likely to have experienced adverse social and economic effects due to bias or discrimination.[27] Thus, non-Hispanic white individuals and men may, on average, have reached a higher threshold of comorbidities at the time that they become homeless compared with non-Hispanic black individuals and persons of color. Men, whether or not they are homeless, are at a higher risk of death at an earlier age than women because of risk-taking behaviors related to the male sex. However, more research with empirical data needs to be conducted to fully understand these disparities among the unsheltered homeless.

Limitations

Although the study was subject to some biases that we could not control, we believe the influences were minor. Some unsheltered adults living on the streets of Boston may not have been seen by BHCHP's Street Team during enrollment and were not included in the cohort, which created a potential selection bias toward those homeless adults who sought health services. Since Boston is a moderately sized city with an extensive network of outreach services provided by the BHCHP's Street Team and their community partners, the number of individuals not served by BHCHP during enrollment was likely to have been small. Additional bias could have occurred if someone entered the cohort and then traveled to another state and died while living in another state. Obtaining National Death Index[14] records improved our ability to detect deaths that occurred outside the state. The BHCHP's Street Team database contained 123 records with insufficient identifying information to be included in the study. These excluded individuals could be systematically different from individuals included in the study in important ways, such as their level of illness or the length of time that they were homeless. Based on our clinical experience, an alternative explanation was that most of these

records with insufficient identifying information were duplicate records of identified cohort members because a new record was opened, rather than an existing one updated, when identifiers were learned.

Additional limitations included a lack of information about individual comorbidities or the chronicity of being homeless before or during the observation period; both could have contributed to a more nuanced understanding of mortality risk in this population. Some causes of death were too rare to ascertain mortality rates. A larger cohort would be required to address this limitation in future studies. Some overlap of the 2 homeless cohorts may have occurred, but the overlap was believed to have been small because BHCHP's data on sleeping location from 2008 showed that the proportion of patients sleeping outside was small (1%-3%) and the time frames of the 2 cohorts were not exact. If there was overlap, estimates of mortality using the sheltered adult homeless cohort as a comparison would be conservative.

Choosing Massachusetts as a comparison population instead of Boston could be considered a limitation of the study; however, some of our methods were based on those used by Baggett et al[10] in their 2013 study, in which the Massachusetts population was the comparison group. In addition, during the time frame of the study, the age-adjusted, all-cause mortality rate in Boston (687 per 100 000 population) was only slightly higher than the age-adjusted, all-cause mortality rate for Massachusetts (669 per 100 000 population).[15,28] We anticipated that confounding by race/ethnicity would be minimal given that the study cohort was disproportionately of non-Hispanic white race/ethnicity as was the Massachusetts population.

Generalizability to cities outside Boston could be affected by difference in access to homeless shelters, health insurance, and health care. Boston guarantees each homeless person access to emergency homeless shelters each night.[29] Not every city across the United States makes this guarantee, and the homeless people accessing shelters in Boston may differ from the homeless accessing, or not accessing, shelters in another city. Most of Boston's shelters have few limits on the length of stay and have little to no requirements regarding sobriety. These shelters accept individuals struggling with alcohol and other drugs, an important factor in minimizing the number of unsheltered individuals in Boston. Shelters in many cities have limits on the length of stay or requirements for sobriety and do not allow individuals with active substance use disorders, which increases the number of homeless people living outside. Access to health care and health insurance were available to our cohort, but it was not uniform across the United States, particularly during the time of the study. These factors could influence mortality for those individuals sleeping outside in different locations and thereby influence the generalizability of our results. Our study provides

important insights about mortality patterns in this previously overlooked group of highly vulnerable individuals.

Conclusions

Our study results showed that unsheltered adults had a higher all-cause mortality rate than a mostly sheltered homeless adult population in Boston, a finding that to our knowledge is not previously reported in the literature. The unsheltered cohort died at a relatively young age of both noncommunicable and substance-attributable causes of death. Access to a patient-centered, outreach service model with integrated medical and behavioral health care delivered directly to the unsheltered population is necessary to begin to address these disparities. A better understanding of the social and supportive services is necessary to augment an integrated outreach team. Services such as harm-reduction models; greater availability and access to substance use disorder treatment, including smoking cessation; and a continuum of housing models with flexible social services to meet individual needs for successful tenancies and improved health are also needed to ultimately improve health disparities borne by those sleeping outside.[30]

Supplement.

eTable. *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* (*ICD-10*) Codes and Groupings

Click here for additional data file. (15.8KB, pdf)

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Associated Data

This section collects any data citations, data availability statements, or supplementary materials included in this article.

Supplementary Materials

Supplement.

eTable. *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* (*ICD-10*) Codes and Groupings

Click here for additional data file. (15.8KB, pdf)

EXHIBIT “3”

Hepatitis A Virus Outbreaks Associated with Drug Use and Homelessness — California, Kentucky, Michigan, and Utah, 2017

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During 2017, CDC received 1,521 reports of acute hepatitis A virus (HAV) infections from California, Kentucky, Michigan, and Utah; the majority of infections were among persons reporting injection or noninjection drug use or homelessness. Investigations conducted by local and state health departments indicated that direct person-to-person transmission of HAV infections was occurring, differing from other recent, large HAV outbreaks attributed to consumption of contaminated commercial food products. Outbreaks with direct HAV transmission among persons reporting drug use or homelessness signals a shift in HAV infection epidemiology in the United States, and vaccination of these populations at high risk can prevent future outbreaks.

Epidemiologic Investigation

Outbreak cases were defined as those meeting the 2012 CDC-Council of State and Territorial Epidemiologists' (CSTE) definition of acute hepatitis A infection,* having a specimen matching an outbreak strain, or an epidemiologic link to a previously identified case. Local and state health department personnel reviewed clinical charts and interviewed patients using standard questionnaires that evaluated risk factors associated with infection, including recent drug use, sexual history, housing status, recent international travel, and contact with another person with HAV infection.

Among states reporting increases in HAV infections to CDC outside or inside the National Notifiable Disease Surveillance System, only California, Kentucky, Michigan, and Utah reported sustained within-state transmission. This report includes outbreaks that occurred during 2017 in these four states. Additional cases reported from other states were excluded because they were attributed to HAV exposure during travel to one of the four outbreak states, and because prolonged, ongoing transmission did not occur in the other states.

During 2017, a total of 1,521 outbreak-associated HAV cases were reported from California, Kentucky, Michigan, and Utah, with 1,073 (71%) hospitalizations and 41 (3%) deaths (Table 1). Among patients for whom clinical or laboratory records were available for review, 42 (3%) had confirmed or probable hepatitis B virus coinfection, and 341 (22%) had confirmed or probable hepatitis C virus coinfection. Overall, 866 (57%) patients reported drug use, homelessness, or both (Table 2). Among all cases, 818 (54%) had an indication for hepatitis A vaccination before becoming infected (i.e., using drugs or being men who had sex with men [MSM]) as recommended by the Advisory Committee on Immunization Practices (ACIP) (*1*).

* https://wwwn.cdc.gov/nndss/conditions/hepatitis-a-acute/case-definition/2012.

Laboratory Investigation

When available, serum specimens from patients who met the CSTE case definition were sent to CDC's Division of Viral Hepatitis laboratory for HAV RNA isolation, genotyping, and genetic characterization. HAV RNA was extracted from immunoglobulin M antibody-positive serum samples and used to amplify and Sanger-sequence a 315–base-pair fragment of the VP1/P2B region (*2*). During 2017, 1,169 specimens from outbreak-associated cases from the four affected states were sent to CDC for additional testing. A total of 1,054 (90%) specimens had HAV confirmed by polymerase chain reaction, 1,014 (96%) of which tested positive for a genotype 1b viral strain. The strains circulating in California, Kentucky, and Utah were genetically different from those circulating in Michigan.

Public Health Response

CDC worked with affected local and state health departments to apply control measures through health advisories, public education, and vaccination clinics that provided outreach and vaccination to the targeted populations. Vaccine was administered in jails, emergency departments, syringe exchange programs, drug treatment facilities, and homeless shelters. In certain jurisdictions, investigation teams also visited homeless encampments to educate and vaccinate unsheltered homeless groups. Although reporting of new outbreak cases in California has ended, new case investigations continue in Kentucky, Michigan, and Utah. Vaccination campaigns also continue for MSM and persons who use drugs or report homelessness in the affected states.

Discussion

After the introduction of hepatitis A vaccine in 1996, the incidence of reported HAV infection steadily decreased in the United States until 2011 and then stabilized at an annual

TABLE 1. Demographic and clinical characteristics of hepatitis A outbreak–associated cases, by state — four states, 2017

Characteristic	California	Kentucky	Michigan	Utah	Total
Total cases, no.	**682**	**59**	**632**	**148**	**1,521**
Male, no. (%)	471 (69)	39 (66)	412 (65)	97 (66)	**1,019 (67)**
Median age, yrs (range)	42 (5–87)	36 (1–84)	41 (<1–90)	38 (22–83)	—
Earliest onset, date	01/17/2017	08/29/2017	01/05/2017	05/08/2017	—
Outcome					
Hospitalized, no. (%)	442 (65)	45 (76)	508 (80)	78 (53)	**1,073 (70)**
Died, no. (%)	21 (3)	0	20 (3)	0	**41 (3)**
Comorbidities					
Hepatitis B infection, no. (%)	10 (1)	4 (7)	16 (3)	12 (8)	**42 (3)**
Hepatitis C infection, no. (%)	116 (17)	29 (49)	165 (26)	31 (21)	**341 (22)**

TABLE 2. Risk exposures of hepatitis A outbreak–associated patients, by state — four states, 2017

	No. (%)				
Reported risk exposure	California	Kentucky	Michigan	Utah	Total
Homelessness and drug use	247 (36)	27 (46)	64 (10)	75(51)	**395 (26)**
Homelessness only	65 (10)	3 (5)	7 (1)	5 (3)	**78 (5)**
Homelessness, drug use unknown	43 (6)	2 (3)	2 (0.3)	5 (3)	**51 (3)**
Drug use only	67 (10)	11 (19)	165 (26)	28 (19)	**265 (17)**
Drug use, homelessness unknown	11 (2)	1 (2)	58 (9)	7 (5)	**77 (5)**
Neither homelessness nor drug use	190 (28)	13 (22)	286 (45)	15 (10)	**504 (33)**
Men who have sex with men	18 (3)	4 (7)	61 (10)	1 (0.7)	**81 (5)**
Unknown	59 (9)	2 (3)	27 (4)	13 (9)	**114 (8)**

* Percentage totals sum >100 because of men who had sex with men being included independently and as part of "homelessness," "drug use," and "neither homeless nor drug use" categories.

average of approximately 1,600 reported cases, mostly among international travelers returning from countries with endemic HAV or as part of foodborne outbreaks (*1*,*3*). HAV outbreaks among illicit drug users were common in the prevaccine era; during the mid-1980s, drug users accounted for >20% of all HAV cases reported to CDC (*3*,*4*). However, large community outbreaks within this population rarely occurred after 1996, when hepatitis A vaccine was first recommended for persons who use illicit drugs (*3*,*4*).

Person-to-person transmission of HAV between those who report drug use or homelessness can result from unsafe sanitary conditions or specific sexual contact or practices, or it can be parenterally transmitted through contaminated needles or other injection paraphernalia (*4*–*6*). Transient housing, economic instability, limited access to health care, and distrust of government services make outbreaks among affected populations more difficult to control, requiring tailored comprehensive public health interventions that address their specific circumstances and needs (*5*–*7*).

During 2016, U.S. hospitalization and mortality rates associated with HAV infections were 42% and 0.7%, respectively (*3*). Increased hospitalization and mortality rates observed in the 2017 HAV outbreaks might be attributable to preexisting illnesses, including chronic hepatitis B and hepatitis C infections, other comorbidities, age, and risk behaviors common among persons reporting drug use and homelessness (e.g., heavy alcohol use) (*8*).

Increasingly, investigations of HAV infections are using molecular epidemiology to confirm outbreaks (*2*). Laboratory data, when combined with reliable epidemiologic data, can be effective in understanding transmission networks, particularly among populations distrustful of investigators. The majority of surveillance specimens tested by CDC's laboratory before 2017 were genotype 1a, the most common genotype in North and South America, but expansion of genotype 1b attributed to the current outbreaks is leading to increased detection of this previously uncommon genotype (*2*,*9*).

Vaccination rates among existing ACIP-identified risk groups are unknown but are believed to be low (*10*). On October 24, 2018, ACIP voted unanimously to add "homelessness" as an indication for ACIP-recommended HAV vaccination (*1*).[†] Although the outbreak has ended in California, hepatitis A outbreaks among persons reporting drug use or homelessness continue in Kentucky, Michigan, and Utah, and, as of October 12, 2018, >7,000 outbreak associated cases have been reported from 12 states.[§]

Increasing vaccination coverage among all at-risk groups recommended by ACIP to receive hepatitis A vaccine might halt ongoing outbreaks and prevent future large community outbreaks (*1*).

[†] https://www.cdc.gov/vaccines/acip/meetings/downloads/agenda-archive/agenda-2018-10-508.pdf.
[§] https://www.cdc.gov/hepatitis/outbreaks/2017March-HepatitisA.htm.

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CDC has recommended that local health jurisdictions experiencing HAV outbreaks among persons who report drug use or homelessness ensure procedures are in place for identifying these risk factors and that these groups are vaccinated against HAV infection.[¶] State and local health departments and CDC should be notified of any new suspected clusters of acute HAV infections.

[¶] https://emergency.cdc.gov/han/han00412.asp.

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All authors have completed and submitted the ICMJE form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.

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Summary

What is already known about this topic?

Hepatitis A is a vaccine-preventable viral infection of the liver that is commonly transmitted through consumption of microscopic amounts of feces. Outbreaks of hepatitis A infections are infrequent in the United States and are typically associated with contaminated food items.

What is added by this report?

During 2017, California, Kentucky, Michigan, and Utah reported 1,521 hepatitis A infections, mostly among persons who reported drug use or homelessness, signaling a shift in hepatitis A epidemiology from point-source outbreaks associated with contaminated food to large community outbreaks with person-to-person transmission.

What are the implications for public health practice?

Increasing vaccination among groups at risk for hepatitis A infection might halt ongoing outbreaks and prevent future outbreaks.

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EXHIBIT “4”

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HEPATOLOGY

Transmission of hepatitis C virus by needle-stick injury in community settings

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Key words
hepatitis C virus, needle stick, polymerase chain reaction, transmission.

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Abstract

Background: Hepatitis C virus (HCV) is predominantly transmitted by blood-to-blood contact, typically by sharing of needles by injecting drug users. Discarded needles could act as a vector for transmission of this infection.
Methods: Two cases of HCV seroconversion following a needle-stick injury in a community setting were identified. The effects of specimen processing and storage conditions on detection of HCV RNA were assessed to provide information about the likelihood of discarded needles containing infectious HCV.
Results: Consistent with a role for discarded needles in viral transmission, *in vitro* studies demonstrated that viral load declined by less than one log following storage for 24 h.
Conclusion: All needle-stick injuries should be promptly investigated by serology and HCV-PCR.

Introduction

Hepatitis C virus (HCV) is transmitted by blood-to-blood contact. Worldwide, therapeutic injections are thought to be the most common source of infection whereas in the USA and Australia, sharing of needles by injecting drug users appears to be the most common mode of transmission. Needle-stick injuries in healthcare settings are recognized as an uncommon mode of transmission. Needles discarded by HCV-infected injecting drug users have the potential to act as a vector for transmission of this infection to the general community.

Transmission via needle-stick injury in the community requires survival of viable virus. Existing data regarding the effect of temperature, storage conditions and time on the stability of HCV RNA are conflicting. Some authors show no or minimal effect after storage for 3 days with freezing and thawing the samples,[1] and no effect of storage at 25°C for 14 days or 5°C for 3 months.[2] However, other authors indicate significant falls in HCV RNA levels over hours to days.[3,4]

This report describes two cases of HCV transmission by needle-stick injury in a community setting. Consistent with the clinical findings, we documented that the HCV viral load in blood declines relatively slowly with storage at room temperature. It reaffirms the need to carefully implement existing policies to prevent needle-stick injuries and monitor those affected for viral transmission.

Case reports

Case 1

A young man working in a caravan park sustained a needle-stick injury to his right index finger while manually emptying rubbish bins. The puncture wound bled slightly and the finger was not washed until some time after the injury. A park manager was notified immediately, and a 1 mL tuberculin needle and syringe was found and removed from the rubbish bin. The bins were emptied daily so the needle had probably been discarded within the previous 24 h. The man and his manager took the needle and syringe to the local public hospital where they were advised testing for blood-borne viruses could not be performed on them. The man had blood taken for baseline antibody tests. As there was no history of hepatitis B vaccination or exposure, he was given an intramuscular injection of hepatitis B immunoglobulin. He received counseling regarding the injury and risk of blood-borne virus infection and was advised to have follow-up testing performed in 3 months' time. He was quite distressed by the injury, requiring further counseling. He returned to work 3 weeks after the injury.

Sixty-four days after the needle-stick injury, he attended his local medical officer with a 2-day history of nausea, headaches, myalgia, slight dry cough and fever. There was no jaundice. No

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diagnosis was made, and he took 2 days sick leave before recovering fully. These symptoms may or may not have represented a seroconversion illness.

The baseline test for HCV on the day of the needle-stick injury was negative (antibody sample to control [S/C] ratio 0.40). The follow up test taken 93 days following the injury was positive for HCV IgG by enzyme immunoassay (EIA) (Murex 4) and by mEIA (Abbott 3). Subsequently, baseline and follow-up samples were tested in parallel, and seroconversion to HCV was confirmed. HCV RNA test was negative on the baseline sample. Liver tests (alanine aminotransferase [ALT], aspartate aminotransferase [AST], γ-glutamyl transferase [GGT], alkaline phosphatase [ALP]) performed 18 months prior to the injury were all within normal reference ranges. Liver tests were not performed at the same time as the follow-up HCV tests but were performed when reviewed by a hepatologist 4 weeks later. These were elevated, with an ALT level of 573 U/L (reference range 5–40 U/L).

The patient disclosed a history of smoking heroin for about 6 months, ending 4 years prior to this needle-stick injury. He had never injected drugs. He had a series of routine tests for blood-borne virus infections including HCV in late 2001, at the start of a new sexual relationship, and these had been negative.

Case 2

A 64-year-old woman trod on a used syringe and 27-G needle while walking through a public car park in an inner city neighborhood with a high prevalence of injecting drug use. The needle penetrated the canvas sole of her shoe and drew blood. She was concerned about the possibility of blood-borne virus infection and presented to her local doctor the following day. This incident was documented but no blood tests were obtained. The patient was asked to return 3 months later for serological investigations, which revealed HCV antibodies and viraemia (Table 1). One year beforehand, she had tested negative for HCV antibody during an admission to hospital for elective knee replacement surgery; however, the association of the needle-stick injury with HCV transmission is not definite due to the absence of baseline HCV serology at the time of the injury. Liver tests had been normal on two prior occasions but after seroconversion, they became persistently abnormal in a pattern typical of chronic viral hepatitis. The most recent investigations revealed continuing chronic HCV viraemia. HIV and HBV antibody tests remained persistently negative.

The patient lived alone and had not been sexually active for more than 10 years. She stated she had never injected drugs and there were no track marks or any clinical events to suggest a history of injecting drug use. She had received one blood transfusion in 1970 after gynecologic surgery. Contact tracing by the hospital public health unit did not reveal any source of transmission or any other cases of unexplained viral hepatitis associated with the orthopedic admission.

Physical examination revealed no signs of acute or chronic liver disease. The patient was not considered suitable for antiviral therapy involving ribavirin due to postoperative cardiac failure and controlled type 2 diabetes mellitus.

Methods

The effects of specimen processing and storage conditions on detection of HCV RNA have been assessed in our laboratories to provide information about the likelihood of discarded needles containing infectious HCV. Whole blood from two HCV-infected patients was collected into EDTA tubes and divided into 1 mL aliquots. Each aliquot was split into two groups, one stored at room temperature (22°C) and one stored in a monitored refrigerator at +4°C.

At the start (time zero), duplicate aliquots were centrifuged at 2500 g for 10 min, and supernatant plasma collected. Duplicate aliquots for each of the different storage conditions were centrifuged after 6, 12 and 24 h from collection and the supernatant was

Table 1 Test results for patient 2

Timeline	ALT (U/L)	HCV antibody	HCV PCR
15 months prior	22	ND	ND
8 months prior	13	ND	ND
7 months prior	ND	Negative	ND
Needle-stick injury			
3 months after	108	Indeterminate Abbott (1.8; cutoff = 1.0) + ve Murex (0.42; cutoff = 0.71) – ve	ND
3.5 months after	87	Indeterminate Abbott (3.0; cutoff = 1.0) + ve Murex (0.19; cutoff = 0.69) – ve	ND
4 months after	112	Indeterminate Abbott (8.1; cutoff = 1.0) + ve Murex (0.56; cutoff = 0.66) – ve	Positive
5 months after	119	Positive Abbott Confirmatory test positive (VIDRL)	Positive Genotype 1 (VIDRL)
7 months after	111	ND	ND
12 months after	65	Positive	Positive

ALT, alanine aminotransferase; HCV, hepatitis C virus; ND, test not done; – ve, negative; +ve, positive.

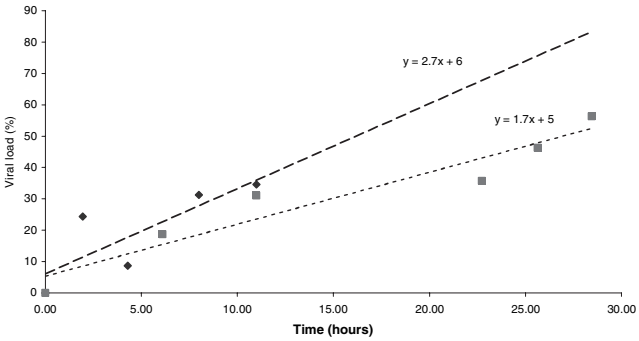

Figure 1 Percentage reduction of viral load when stored at (◆, bold dashes) room temperature and (■, thin dashes) 4°C before separation.

removed, and stored at −80°C before the viral load of the samples was determined using the HCV Roche monitor assay (Roche Diagnostics, Sydney, NSW, Australia). Thus, we attempted to duplicate the situation where blood is present in needles and syringes, and subsequently separate the supernatant from the cellular fraction of blood at certain times after collection.

The reduction of HCV RNA titer was determined as a percentage of loss when compared to the reference viral load determined at time zero. The rate of change was plotted as loss of percentage of viral load (x) at any time (y) and the equations for a linear fit were calculated, allowing determination of a slope for rate of change in viral load with time.

Results

We demonstrated a 70% reduction in viral load when samples were stored at room temperature for 24 h, and a 40% reduction in viral load when samples were stored at 4°C for 24 h (Fig. 1). Based on the assumption of constant viral load loss, a simple linear model would predict loss of percentage of viral load (y) at any time (x, in hours) in samples stored at room temperature defined by $y = 2.7x + 6$.

Discussion

These two cases are amongst the first well-documented evidence that HCV can be transmitted by accidental needle-stick injury in the public setting. In both cases, HCV seroconversion was demonstrated along with an independently documented risk exposure. In light of this report, all needle-stick injuries should be promptly investigated by serology and HCV-PCR as soon as possible after the injury with follow-up testing 1–3 months later. In this way, cases amenable to early antiviral therapy will be detected as soon as possible, leading to the highest possible rates of viral clearance.

Hepatitis C virus transmission following needle-stick injury is a recognized threat to healthcare workers.[5,6] The risk has been documented at 0.3% in a large multicentre study[7] and is related to the presence and concentration of virus, the inoculum volume, the nature of injury to the skin, and ambient environmental factors.[5] All tested source cases were HCV RNA positive. HIV positivity was associated with transmission risk.[7] The level of HCV RNA in blood generally declines hours after removal from the host,[5] suggesting that infectivity of a needle is dependent on the time between the needle being discarded and the subsequent injury. Variability in previously reported rates of RNA decline *ex vivo* may result from variations with respect to moisture, temperature and initial viral load. Our *in vitro* data, in which these factors were controlled, suggest that viral load, as measured by RNA levels, declines relatively slowly, at 1.7–2.7% per hour according to ambient temperature, consistent with continuing infectivity.

Needle-stick injuries from discarded injecting equipment in public places are considered to pose a very low risk. We were only able to find a single documented case of HCV infection following accidental needle-stick injury in the non-healthcare setting.[8] One other case of HCV infection has been reported in a policeman intentionally wounded by a needle used by a long-term injecting drug user.[9] There is much community anxiety regarding blood-borne virus infection following community needle-stick injury.[10] HCV antibodies can be detected in 10–15% of needles returned to needle syringe programs.[11] It is likely many needle-stick injuries remains unreported and of those that do present for medical assessment, many are lost to follow-up.[10] A study of children who sustained community acquired needle-stick injury suggested that loss to follow-up (14 out of 50) may have been associated with over-reassurance of the parents regarding the low risk of seroconversion.[10]

This report raises significant workplace health and safety issues, in particular hazardous handling of wastes. Several staff had previously found used injecting equipment in public areas of the park where patient 1 worked. At the time of the injury there were no facilities in the park for safe disposal of injecting equipment. In an audit of 296 hospitality, accommodation and cleaning service industries, 145 workplaces (49%) reported finding discarded sharps (in particular, used needles and syringes).[12] Implementation of safe work practices where relevant may prevent blood-borne virus transmission.

Early treatment of acute HCV infection with interferon-α is highly effective in prevention of chronic HCV infection.[5,13] Following baseline investigations, further testing for seroconversion enables early referral for consideration of treatment options. However, the effectiveness of early treatment has to be balanced against the chance of spontaneous viral clearance and the reduced effectiveness of delayed treatment. Treatment of those who remain HCV RNA positive after 12 weeks has been successfully adopted.[14]

The National Institute of Health (NIH)[6] has recently revised its recommendations regarding follow-up of needle-stick injuries in the healthcare setting. Given the ability of PCR to detect HCV RNA 2 weeks after transmission,[15] the NIH recommends exposed healthcare workers should be checked at 2 and 8 weeks after injury. A similar approach to needle-stick injuries in the non-healthcare setting may facilitate the earliest possible diagnosis for risk management purposes, but to identify persisting infection that requires antiviral treatment, testing at 12 weeks may be more appropriate.

Although the risk of acquiring blood-borne virus infection from accidental needle-stick injury in the non-healthcare setting would appear to be low, this report confirms the need for baseline assessment and follow-up after such injuries. It is also important to gather data concerning the prevalence of this mode of HCV transmission and maintain strategies to minimize it. Neither patient received optimal management in the initial stages, indicating a

need for education of primary healthcare workers including appropriate referral procedures.

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EXHIBIT “5”

Epidemiology and Infection

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Communicable disease among people experiencing homelessness in California

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Abstract

California has a large population of people experiencing homelessness (PEH) that is characterised by a high proportion of people who are unsheltered and chronically homeless. PEH are at increased risk of communicable diseases due to multiple, intersecting factors, including increased exposures, comorbid conditions including substance use disorder and mental illness and lack of access to hygiene and healthcare facilities. Data available for several communicable diseases show that PEH in California experiences an increased burden of communicable diseases compared to people not experiencing homelessness. Public health agencies face unique challenges in serving this population. Efforts to reduce homelessness, increase access to health care for PEH, enhance data availability and strengthen partnerships among agencies serving PEH can help reduce the disparity in communicable disease burden faced by PEH.

Homelessness in the USA and in California

The definition of a person experiencing homelessness (PEH) differs by government agency. The US Department of Health and Human Services defines a homeless individual as one who 'lacks housing', which includes 'an individual whose primary residence during the night is a supervised public or private facility that provides temporary living accommodations and an individual who is a resident in transitional housing' [1]. The US Department of Housing and Urban Development (HUD) expands the definition to include people living in unstable housing arrangements such as motels, personal vehicles, and tents [2]. Causes of homelessness include lack of affordable housing, unemployment, poverty, and low wages [3].

Measuring the number of PEH is challenging, as housing status can fluctuate over time. One method of measurement is an unduplicated one-night estimate of sheltered and unsheltered individuals who are experiencing homelessness. In the USA, this is conducted yearly during the last week in January by local planning bodies [4]. In 2018, this measurement identified 553 000 PEH in the USA, of which 180 000 (33%) were individuals who are part of families with children. Of the total, 65% were sheltered (living in shelters or motels) and 60% were men. [4] From 2010 to 2018, the number of PEH declined by 13.2% nationally, but increased by 5.3% in California.

California's population of PEH is distinctive due to its size, the proportion of unsheltered individuals and proportion of chronically homeless individuals (defined as a person who is continuously homeless for greater than 1 year, or greater than four episodes of homelessness in 3 years [5]). In 2018, California accounted for 12% of the US population (40 million) [6] and 24% of the total population of PEH (129 972, or 0.3% of California's population) [4] (Fig. 1). Los Angeles County, California's largest county by population, accounts for 25% of California's total population and 32% of California's homeless population (42 079) (Fig. 2). Nearly half (47%) of the US unsheltered homeless population lives in California and more than two-thirds (69%) of California's homeless population is unsheltered (Fig. 3). Finally, 32 668 chronically homeless individuals live in California, representing 25% of all PEH in California and 37% of the US population of chronically homeless individuals [4].

Mortality is increased among PEH compared to the general population, especially among younger people and women [7]. A study of homeless youth (15–24 years) in San Francisco reported an age, race and gender-adjusted standardised mortality ratio of 10.6 (95% CI (5.3–18.9)) compared with California's general youth population [8]. Individuals who are unsheltered or chronically homeless have further increased risk of mortality [9]. Unsheltered PEH has a 2.7-fold increased risk of mortality compared to those who are sheltered [10]. Increased mortality is related to a number of causes including poisoning (medication and illicit substances), suicides, accidents, heart disease, and infections. Increased infection-specific mortality among PEH has been documented, although data are limited because of the difficulties in capturing information on PEH. Studies of human

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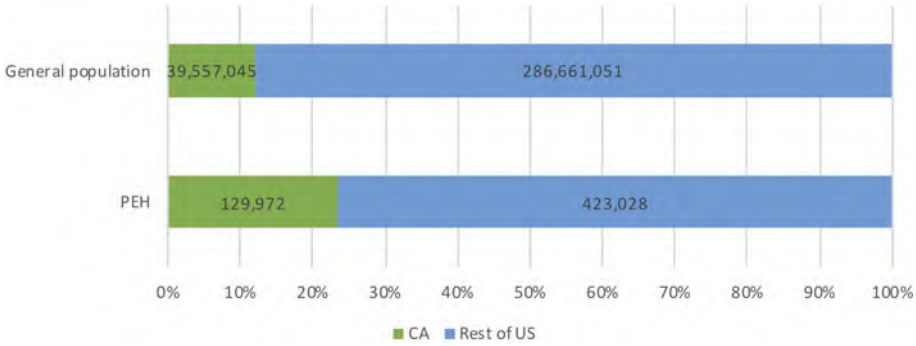

Fig. 1. California population of persons experiencing homelessness (PEH).

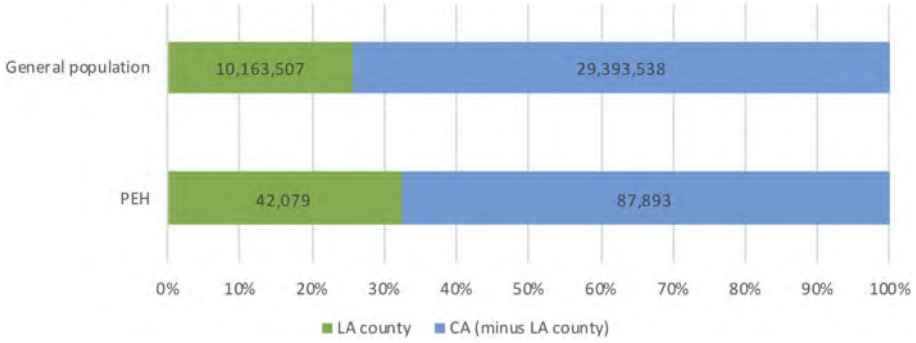

Fig. 2. Los Angeles County population of persons experiencing homelessness (PEH).

immunodeficiency virus (HIV) infection and tuberculosis (TB) among PEH come from one urban centre or from outside the US [7, 11]. HIV was the leading cause of death for PEH living in Boston during 1988–1993; the leading cause of death shifted to drug overdose and substance use disorders during 2003–2008 [11]. Among PEH diagnosed with TB in Toronto, Canada during 1998–2007, 19% died within 12 months of diagnosis compared to 7.4% of all persons diagnosed with TB [12].

The overall physical and emotional health status of PEH is worse compared to the general population and PEH suffer from a disproportionate burden of communicable diseases compared with the general population [7]. A 2012 systematic review reported an increased prevalence of HIV infection, hepatitis C virus (HCV) infection and TB prevalence among PEH across studies in multiple countries. Among US studies, the prevalence of TB among PEH was 46.7–461.2 times higher compared to the general population. Hepatitis C prevalence was 5.2–17.6 times greater than the general population and HIV infection prevalence was similar to the general population in some studies, or up to 42 times greater. There was significant heterogeneity in these studies, most likely related to differences in population sampling. All studies sampled individuals who engaged in social services, such as shelters or soup kitchens; however, these services differ substantially by location. In addition, for TB, differences in the use of diagnostic testing contributed to differences in prevalence estimates [13].

Homelessness and communicable disease risk

PEH are at increased risk of communicable diseases due to increased exposures and greater susceptibility to illness (Table 1).

PEH living in crowded conditions such as shelters have greater exposure to pathogens, which increases the risk of TB [14] and diarrheal illnesses [15]. Lack of access to hygiene facilities also increases exposures to pathogens transmitted via faecal-oral transmission such as hepatitis A [16] and may increase exposure to vectors such as lice, which can transmit *Bartonella quintana* infections [17]. Inadequate hygiene facilities may also worsen minor wounds due to lack of adequate skin care [18, 19]. PEH may also have comorbid substance use disorders or engage in risky sexual behaviour, which can increase the risk of acquisition of infections with pathogens such as HIV, HCV, or HAV [7]. Examples of high-risk sexual behaviour include sex while intoxicated or sex in exchange for goods and services such as money, shelter, or drugs. [20]

Inadequate living situations can cause physical injuries that increase susceptibility to infections. For example, a wheelchair-bound person may develop sacral pressure injuries due to lack of an adequate place to lie down. Treatment for these wounds can be delayed due to lack of access to care, which can result in serious life-threatening infection requiring hospital admission. Increased susceptibility to infection can also be the result of poorly controlled comorbid health conditions, such as diabetes. All these environmental and host-specific risks are interrelated and may have multiplicative effects, leading to a substantial increase in the risk of disease.

Recent examples from California: communicable disease among PEH

Accurate measurement of communicable disease burden among California's population of PEH is challenging. Many communicable diseases linked to homelessness are not reportable conditions (e.g., norovirus illness). Housing status is not collected by routine surveillance systems for all communicable diseases. Nevertheless, data are available from routine surveillance at California Department of Public Health (CDPH) for several communicable diseases that illustrate the disproportionate burden of

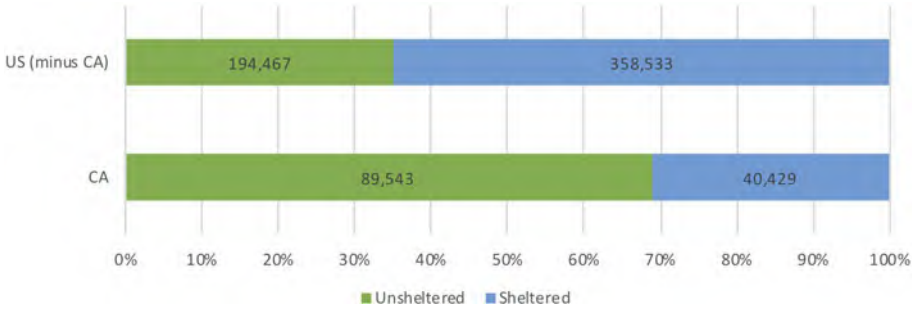

Fig. 3. Unsheltered *vs.* sheltered status among persons experiencing homelessness in California and the USA.

communicable diseases among PEH in California (Table 2). We summarise examples of communicable diseases among PEH in California to describe transmission dynamics, the risks encountered by PEH and the public health response. The selected examples represent common communicable diseases with available surveillance or cross-sectional data. Other diseases that disproportionately affect PEH that are not presented include louse-transmitted *Bartonella quintana* infection, which has been previously described in a case series outside of the USA [21].

Hepatitis A

Hepatitis A, caused by the hepatitis A virus (HAV), usually causes a mild, self-limiting illness for which supportive measures are the standard of care [16]. Community-based transmission is now uncommon in the US and a rapid decrease in hepatitis A incidence after the introduction of hepatitis A vaccination in 1996 suggests that immunisation played an important role [16]. However, since 2017, the Centres for Disease Control (CDC) has reported outbreaks of hepatitis A in 30 states including California among people who use drugs, people who are experiencing unstable housing or homelessness and men who have sex with men [22]. In California, the hepatitis A vaccine is universally recommended for children and adults at increased risk of infection as specified by the Advisory Committee on Immunisation Practices (ACIP). The California Department of Public Health and local health departments also use the hepatitis A vaccine to respond to hepatitis A outbreaks.

During 2016–2018, California experienced a large hepatitis A outbreak among PEH that was concentrated in San Diego County. This outbreak was the largest hepatitis A outbreak in California since the introduction of hepatitis A vaccination. Statewide, a total of 708 outbreak-related hepatitis A cases were reported, with 465 hospitalisations (66%) and 21 deaths (3%). More than half of cases (52.6%, $n = 372$) were in PEH. The outbreak did not involve the general population and predominantly affected PEH and/or who were using drugs. Of the PEH who developed hepatitis A, more than two-thirds (71.6%, $n = 263$) also reported drug use. This outbreak was notable for the high rate of hospitalisation and death [23]. For comparison, a multistate outbreak of hepatitis A tied to consumption of frozen strawberries in 2016 was linked to 143 cases, 56 hospitalisations (39%) and no deaths [24].

Several factors drove the California outbreak of hepatitis A among PEH, including underlying risk factors, environmental sanitation, and vaccine acceptability and access. PEH were at risk for developing hepatitis A due to exposure to unsanitary conditions and concomitant drug use. PEH were at increased risk of severe disease due to underlying alcohol use disorder and chronic HCV infection. Of people with outbreak-associated hepatitis A, 17% were positive for either HCV antibody (anti-HCV) indicating past or current infection, or HCV RNA indicating current infection. Similarly, the prevalence was high in three other states that experienced hepatitis A outbreaks that affected PEH and people who use drugs in 2017: 49% (29/59) in Kentucky, 26% (165/632) in Michigan and 21% (31/148) in Utah [25].

In the general population, the prevalence of anti-HCV and HCV RNA positivity in the USA is 1.7% and 1%, respectively [26]. Hepatitis A outbreaks are difficult to control due to the long incubation interval, long period of infectivity and a significant proportion of asymptomatic infections. Public health agencies in California used three population-level strategies to respond to the outbreak of hepatitis A among PEH: vaccination, sanitation, and education. Vaccination efforts targeted at-risk individuals (PEH or persons using drugs and living in unstable housing). During this outbreak, the CDPH expanded criteria for hepatitis A vaccination beyond ACIP recommendations, which at the time did not include PEH, to include PEH [27]. Reaching at-risk individuals required partnerships with local organisations, since many people lived in less accessible locations and experienced a lack of trust in the healthcare system. For example, San Diego County public health nurses worked with staff from homeless service providers or law enforcement to form 'foot teams' and reach at-risk individuals in riverbeds, canyons, ravines, parks, and urban encampments. In San Diego County alone, 121 921 hepatitis A vaccinations were delivered during this outbreak [28]. To support vaccination efforts, California Governor Jerry Brown declared a state of emergency in October 2017, which enabled the state to ensure adequate vaccine supply for outbreak response [29]. Sanitation interventions included increasing access to bathrooms by extending hours of bathroom facilities and setting up portable toilets and handwashing stations. Education interventions were aimed at high-risk populations, health care providers and the general public. Specific tools included pamphlets explaining the role of hygiene in interrupting disease transmission and hygiene kits. Collaboration with local media outlets was critical for the dissemination of these messages.

The California hepatitis A outbreak ended in 2018, but other outbreaks are ongoing in the USA. In February 2019, ACIP updated its recommendations for hepatitis A vaccination to include PEH [30]. ACIP recommends routine hepatitis A vaccination in children [31] and adults with risk factors, including homelessness, chronic liver disease, clotting factor disorders, men who have sex with men, work with HAV in a research laboratory, travel in countries with high or intermediate endemic hepatitis A, or close personal contact of an international adoptee [32]. Delivering the hepatitis A vaccine to this population remains a challenge, particularly given the existing challenges PEH face

Table 1. Major risk factors and communicable diseases identified among people experiencing homelessness

Risk factor	Modes of disease transmission	Communicable disease (examples)
Inadequate access to personal hygiene		
Handwashing and toilet facilities	• Fecal-oral	• Hepatitis A • Shigella • Norovirus
Bathing and skin care	• Direct inoculation	• Skin and soft tissue infections (SSTIs) • Group A streptococcal infections
Laundry	• Ectoparasite infestations • Vector-borne illnesses	• Lice • Scabies • Bed bugs • *Bartonella quintana* (louse-borne)
Inadequate access to resting places		
Pressure injury from lying on hard surfaces	• Direct contact	• SSTIs
Lower extremity stasis dermatitis from lack of places to lie flat	• Direct contact	• SSTIs
Congregate settings and increased exposures (shelters, tent dwellings)	• Droplet • Airborne • Direct contact • Fomites	• Norovirus • Influenza • Tuberculosis • Hepatitis A
Exposure to disease vectors	• Vector-borne	• Mosquito-borne illnesses, Typhus (flea-borne)
Behavioral risks		
Exchange of sex for money Sex while high Sexual assault	• Sexual contact	• Syphilis • Gonorrhea • Chlamydia • HIV • Hepatitis B
Comorbid medical conditions		
Substance abuse, including alcohol, intravenous drug use	• Blood-borne • Skin disruption	• HIV • Hepatitis A • Hepatitis B • Hepatitis C • Invasive group A streptococcal infections • Methicillin resistant *Staphylococcus aureus*
Mental illness	• Increase risk behavior • Decreased self-care • Delays in care	May exacerbate multiple conditions
Limited access to healthcare		
Limited preventive services	• Decreased vaccinations • Increased vulnerability to infections	• Shingles • Pneumonia • Hepatitis A
Poorly controlled chronic conditions	• Decreased immunity • Increased vulnerability to infections	• SSTIs
Low health literacy	• Delays in care	

(*Continued*)

Table 1. (*Continued.*)

Risk factor	Modes of disease transmission	Communicable disease (examples)
		• Pneumonia requiring hospitalisation due to late presentation
Limited medical care	• Decreased secondary and tertiary prevention • Lack of treatment due to inability to find affected individuals	• Severe sequelae of minor medical issues. For example, septic shock from cellulitis related to infected wounds from venous stasis dermatitis.

when accessing medical care. One potential delivery mechanism is via requirements imposed by California Senate Bill 1152 (SB1152), which requires hospitals to offer appropriate vaccinations to homeless patients on inpatient or emergency room discharge [33].

Syphilis

Syphilis, a sexually transmitted genital ulcerative disease caused by the bacterium *Treponema pallidum*, is associated with significant adverse consequences if left untreated with progression into secondary and tertiary syphilis. The incidence of syphilis has increased nationally and in California despite the usual efforts of public health departments, which includes contact tracing, screening, and treatment with penicillin [34,35]. In 2017, the incidence rate of primary and secondary syphilis was 16.8 cases per 100 000 Californians, up from 1.0 cases per 100 000 in 2000 [36]. Among women, cases increased by 600% during 2012–2017 [37]. Homelessness disproportionately affects people with syphilis: 7% of men and 21% of women in California with a new diagnosis of syphilis during 2017–2018 [38]. In comparison, PEH represent 0.3% of California's total population. The significant burden of homelessness in women is particularly concerning in light of the rise in congenital syphilis (CS) cases in California. Previous work in other states on mothers of infants with CS indicates that unstable housing status is associated with increased risk of CS [39, 40]. Outbreaks of syphilis have also occurred among PEH. In 2018, Sonoma County identified a cluster of syphilis cases among homeless individuals living in encampments [41]. In response, Sonoma County Department of Public Health initiated targeted screening efforts both in the field and through providers serving persons at increased risk in order to identify additional cases and provide treatment.

The association between homelessness and syphilis may be related to multiple intersecting factors. For example, substance use disorders, which are common among PEH [7] and sex while high has been associated with increased risk of syphilis in women [42]. Lack of access to care and inadequate screening and treatment, which are also common among PEH [7], may result in continued spread within sexual networks. PEH may exchange sex for services or goods [43] and these activities increase the risk for sexually transmitted infections, such as syphilis, due to a large number of partners and inability to negotiate consistent condom use [44]. Current efforts to address the rising rates of syphilis in the general population include expansion of populations screened for syphilis in screening guidelines for sexually transmitted infections and targeted screening interventions. Current CDC guidelines recommend syphilis screening for all pregnant women, sexually active MSM, men at increased risk and HIV positive individuals [45]. One example of a targeted screening intervention that could reduce the burden of syphilis is to increase screening in the correctional system. In California state prisons all inmates are screened for syphilis and treated if syphilis is diagnosed. The California Department of Public Health encourages providers serving PEH, including hospital emergency departments, to provide sexually transmitted disease screening for PEH.

Invasive group A streptococcal infections

Group A *Streptococcus* (GAS) bacteria cause a variety of minor infections, including pharyngitis and skin infections. Invasive group A streptococcal infection (iGAS) is defined as infection with GAS isolation from a normally sterile site (blood) or wound with necrotizing fasciitis or streptococcal toxic shock syndrome [46]. The CDC tracks cases through the Active Bacterial Core surveillance (ABCs) system, which collects data on several pathogens, including Group A *Streptococcus,* from sites in 10 states, including three counties in California [47]. iGAS is associated with increased mortality (case fatality ratio 11.7%). Factors independently associated with death included increasing age and underlying chronic illness [48]. Outbreaks of iGAS have been described among individuals experiencing homelessness and/or individuals who use injection drugs in Europe [49], Canada [50] and the USA [51].

While iGAS is not routinely reportable in California, a study of 673 iGAS cases in San Francisco during 2010–2017 tracked by the ABCs system found that 34% of cases were among PEH. The incidence of iGAS increased significantly from 300 in 2010–2014 to 547 in 2017 per 100 000 population among PEH and from 5 in 2010–2013 to 9.3 in 2017 per 100 000 among people not experiencing homelessness. The iGAS incidence was greater among PEH compared to people not experiencing homelessness due to multiple risk factors, including substance use disorders and barriers to appropriate skin care [46]. Individuals who use injection drugs may develop infections from contaminated drugs, needles, or drug paraphernalia. Recent work from New Mexico evaluating risk factors for iGAS among PEH suggested that skin breakdown and barriers to appropriate skin care may increase the risk of iGAS [52]. Collaboration with organisations serving PEH and people who inject drugs, such as needle exchange organisations, is important for preventing infections in this population and for providing care to limit the severity of wounds that have already developed. For example, existing needle exchange services not

Table 2. Recent reports describing housing status and major communicable diseases in California

Category (reference)	People experiencing homelessness *N*	Homeless per cent %	People not experiencing homelessness *N*	Non-homeless per cent %	Total population n	Data type	Location
California population [4, 6]	129 972	0.3	39 427 073	99.7	39 557 045	Homeless point in time count, Census bureau	All California
Hepatitis A Outbreak, 2017–2018 [23]	372	52.6	335	47.4	707	Outbreak investigation	All California (84% of cases from San Diego County)
Invasive Group A Streptococcal Infections, 2010–2017 [50]	299	44.4	374	55.6	673	CDC Active Bacterial Core surveillance (ABCs)	San Francisco County
Hepatitis C 2016–2018, [67]	680	32.9	1384	67.1	2064	CDPH linkage to care demonstration project	San Francisco County, San Diego County, Los Angeles County, San Luis Obispo County, and Monterey County
Primary and Secondary Syphilis (Female), 2017–2018 [38]	207	22.0	735	78.0	942	Surveillance	California Project Area (all California counties except Los Angeles County and San Francisco County)
Primary and Secondary Syphilis (Male), 2017–2018 [38]	275	6.6	3902	93.4	4177	Surveillance	California Project Area
Tuberculosis, 2017 [55]	106	5.4	1873	94.6	1979	Surveillance	All California
New HIV diagnoses within the last 12 months, 2012–2017 [58]	378	1.3	29 826	98.7	30 204	Surveillance	All California

Data are routine disease monitoring data unless otherwise noted.

only provide needles and syringes but also educate people on appropriate skin care and harm reduction methods [53].

Tuberculosis

TB is caused by *Mycobacterium tuberculosis* and commonly causes pulmonary infections or asymptomatic latent infection. The TB incidence rate nationally among people experiencing homeless was estimated from 36 to 47 cases per 100 000 population in 2006–2010 [54], compared to 2.8 per 100 000 population in the general population in 2017 [55]. While TB is more common in PEH than the general population, multi-drug resistant (MDR) TB was less common. MDR infections affected 1% of PEH with TB [54], compared to 1.9% of all people diagnosed with TB in the US in 2018 [56]. Among patients with TB in 2017, 5.6% of TB cases in California reported homelessness, compared to 4.6% nationally [55]. In California, using the point in time estimate of the population of PEH, the incidence rate of TB among PEH in 2017 was 94 per 100 000 population compared to 4.7 per 100 000 population in the general population.

Los Angeles County has been experiencing a large TB outbreak among PEH since 2013. Efforts to address TB among PEH in Los Angeles County have had some success; the percentage of TB cases reporting homelessness declined from 10.1% in 2013 to 7.6% in 2016 [57]. Using the point in time estimate for the denominator, the incidence of TB among PEH decreased from 132 per 100 000 population in 2013 to 89 per 100 000 population in 2016. Los Angeles County Department of Public Health has collaborated with medical providers serving PEH and shelter sites to provide TB symptom screening at shelter entry, targeted testing, and TB treatment. The Agency also has a programme to temporarily house high-risk individuals receiving latent TB infection treatment [57].

There remain significant challenges to the treatment of active TB and latent TB infection among PEH. First, current information systems may not accurately reflect a person's true housing status, especially for people with unstable housing who may be intermittently homeless and housed. Therefore, reaching exposed individuals remains a challenge as contact tracing is difficult due to the lack of or transient living addresses of PEH. CDPH has successfully used external data from the HUD's Homeless Management Information System (HMIS) to assist with locating potential contacts. However, this information is imperfect, as people change locations over time. Second, adherence to treatment is a major challenge given the extended duration of therapy. For patients with latent TB infection, short-course therapy with rifapentine can help address issues with non-adherence due to length of therapy. Finally, exposures in congregate living situations such as homeless shelters may increase the risk of TB exposure among PEH.

HIV infection

HIV infection is no longer the leading cause of death among PEH [11]. While no recent outbreaks have been reported in California, PEH experience a disproportionate burden of new HIV infection diagnoses. In California, from 2012 to 2017 across all counties, 1.3% (378/30 204) of new cases of HIV infection were in people identified as experiencing homelessness or unstable housing based on home address [58]. During the same period, 1% of people living with HIV were homeless or unstably housed [59]. Data from the Medical Monitoring Project (MMP) in California, which includes data for all counties except for San Francisco and Los Angeles, estimates that 10.8% (95% CI 6.7–14.9%) of California adults living with HIV reported homelessness during the 12 months before the interview [60]. The difference in the estimates may be related to the differences in data collection. Surveillance data include all counties in California, while the MMP includes all counties except for San Francisco and Los Angeles. Surveillance data measure housing status at a point in time based on the classification of a patient's home address, while the MMP asks people directly about their housing status over the past year. In 2017, based on the point in time population of PEH, the incidence rate of newly diagnosed HIV infection among PEH in California was nearly fivefold that of the general population: 56 cases per 100 000 population among PEH compared to 12 cases per 100 000 population in the general population. In San Francisco, 14% of new HIV infection cases were among PEH, and PEH had delays in time to viral suppression compared to those who were not homeless [61].

Previous research demonstrates that housing decreases mortality among people living with HIV [62]. Several programmes help PEH who have HIV infection to find housing, including the Ryan White programme [63] and the Housing Opportunities for Persons with AIDS Programme administered by the US Department of HUD [64]. Collaboration with local governments and organisations is key to meeting the needs of this population. In San Francisco, the Getting to Zero initiative advocates for people living with HIV to be prioritised for housing [65]. In 2018, San Francisco Department of Public Health received CDC funding for Project OPT-IN, a 4-year demonstration project to improve HIV treatment outcomes among vulnerable populations, including PEH. Proposed services include homeless outreach and intensive care management. [66]

Hepatitis C

Hepatitis C disproportionately affects PEH [13]. In California, housing status is not routinely collected by the hepatitis C disease monitoring system. Information on hepatitis C and housing status comes from California Department of Public Health's hepatitis C testing and linkage to care demonstration projects in four sites serving five counties (San Luis Obispo, Monterey, San Francisco, San Diego and Los Angeles), which found that out of 2064 individuals who newly tested positive for HCV RNA between 1 March 2016 and 30 June 2019, 32.9% (680) were known to be unstably housed [67]. While these data are unlikely to be generalisable to all persons testing positive for HCV since they specifically targeted PEH and people who use injection drugs, they suggest that homelessness may be common among persons infected with HCV in California. Unstable housing is a common barrier to hepatitis C treatment. Collaboration with local organisations and governments is important to find innovative ways to reach PEH who have hepatitis C infection. This is already at work in San Francisco: the End Hep C SF campaign aims to ensure access to hepatitis C treatment for all people, including PEH. This collaborative effort involves the San Francisco Department of Public Health, community clinics and homeless shelters that offer on-site hepatitis C treatment. [68]

Policy implications

There are multiple potential factors that increase the risk of homelessness and potential areas in which to intervene.

Housing: Preventing homelessness and providing housing for PEH can eliminate many of the risks that PEH face. Housing decreases mortality among people with HIV [62] and programs now exist to provide housing for this population. Limited evidence suggests that housing will be beneficial for other groups as well: among chronically ill homeless adults, permanent supportive housing was associated with decreased mortality. Only 2% of the housed individuals died of infectious causes compared to 13% of unhoused individuals [69]. Permanent supportive housing programmes provide a suite of healthcare and social services to help individuals stay healthy and housed [69]. For example, treatment of comorbid substance use disorders and mental illness can help decrease the risk of communicable diseases and increase a person's capacity for self-care. [7]

States have experimented with using Medicaid dollars to pay for housing [5], but addressing the root causes of homelessness, including addressing issues of affordable housing, are fundamental for mitigating the risks to health among PEH.

Improving care for PEH: Efforts to improve access to healthcare for PEH could prevent or mitigate illness in more individuals. One strategy is recent California legislation (SB1152) which mandates hospitals to offer appropriate vaccinations and coordination of care for homeless patients on hospital or emergency room discharge. Another strategy is the California Whole Person Care pilot program that is intended to enhance coordination of health and social services for vulnerable populations including PEH.

Improving information systems: Reaching exposed or at-risk individuals remains a major challenge, especially when these individuals do not have permanent contact information. Use of information systems like the California Immunisation Registry (CAIR) [70] and the HUD's HMIS [71] could support improved information sharing between different homeless service providers and public health departments to reach people in a timely fashion and provide needed services [72]. The Health Insurance Portability and Accountability Act protects certain health information and may be a barrier for health care systems to collaborate with homeless service providers. [73]

Strengthening partnerships: Public health departments must work closely in partnership with local governments and non-governmental organisations to meet the health needs of PEH. One important group of partners are community health centres that receive funding through the federal Health Care for the Homeless program. In the case of the 2017–2018 hepatitis A outbreak, collaboration between the department of public health and local social services agencies was crucial for reaching thousands of at-risk individuals.

Summary

California has a large and growing population of PEH. Compared to the rest of the country, California's population of PEH are disproportionately unsheltered and chronically homeless. These individuals die prematurely and suffer a greater burden of illness, including communicable diseases such as HIV, hepatitis A, hepatitis C and TB. PEH are especially vulnerable due to the intersection of multiple risks, including increased exposure to pathogens, decreased immunity and decreased access to healthcare and services that would mitigate the severity of illness.

There are several important limitations to the available data on housing status and communicable disease risk. First, disease incidence among PEH may be overestimated due to undercounting of the true population of the PEH. Calculations of disease incidence rely on HUD's yearly point-in-time counts, which may fail to include people in hard to reach locations (riverbeds, remote encampments) and people intermittently cycling between homelessness and unstable temporary housing arrangements. Second, case burdens may appear elevated due to enhanced screening among PEH. For example, targeted syphilis screening among PEH in Sonoma County may partly explain the elevated proportion of PEH among people with syphilis. Conversely, it also may be the case that PEH are not properly identified due to lack of medical care or inability to trace contacts due to lack of information. Finally, housing status is inconsistently collected across disease categories and a significant amount of housing information is missing, which can affect disease incidence estimates in either direction.

Efforts to address communicable disease risk in this population will depend on innovative strategies to overcome the unique challenges in reaching people and providing adequate treatment, as well as strategies to address fundamental causes related to access to affordable housing and treatment for comorbid conditions including substance use disorder and mental illness. While some of the root causes of homelessness lie outside the purview of public health agencies, there are opportunities for public health to support both primary and secondary prevention of communicable disease issues in PEH. Examples of primary prevention efforts by public health include immunisation, promotion of harm reduction methods including needle exchange and efforts to increase access to mental health services, substance use treatment and supportive services for PEH. Examples of potential secondary prevention interventions include supporting access to culturally competent clinical and other supportive services to reduce the complications of infections once they occur.

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EXHIBIT “6”

POSITION STATEMENT

Needle stick injuries in the community

Test Your Knowledge

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Abstract

When children sustain injuries from needles discarded in public places, concerns arise about possible exposure to blood-borne viruses. The risk of infection is low, but assessment, counselling, and follow-up of the injured child are needed. This statement reviews the literature concerning blood-borne viral infections after injuries from needles discarded in the community, and provides recommendations for the prevention and management of such incidents.

Keywords: *Antiretrovirals; Blood-borne infections; Children; Needle-stick injuries*

Injury from used needles and syringes found in community settings arouses much concern, especially when children find discarded needles and injure themselves while playing with them. The user is generally unknown, and parents and health care providers fear that the needle may have been discarded by a person who injects drugs with a blood-borne infection. Although the actual risk of infection from such an injury is extremely low, the perception of risk by parents results in much anxiety. Evaluation, counselling, and follow-up with parents and the child are needed. This statement updates a Canadian Paediatric Society document published in 2008[1].

The important pathogens to be considered in this situation are hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV)[2][3]. It is essential that health care providers know about the risks of acquiring these viruses following needle stick injuries as well as current recommendations for management and follow-up. The prevalence of HBV, HCV, and HIV among persons who inject drugs varies among regions in Canada and may change rapidly. In the absence of up-to-date local data, it is prudent to assume that the needle may have been contaminated with one or more of these viruses.

To date there have been very few case reports of HBV[4][5] or HCV [6][7] transmission and none of HIV transmission following injuries by needles discarded in the community. Most children received HBV prophylaxis, if it was indicated, while fewer than 20% received antiretroviral therapy (ART) prophylaxis[8]-[25].

Needle stick injuries can be prevented by educating children, parents, educators, and health care providers about the

dangers of handling used needles, syringes, and other objects contaminated with blood, including sharps containers designed for used needle disposal in public places. Children need to be made aware of these rules at an early age. In the studies of injuries from discarded needles referred to above, the mean ages of children injured ranged between 5 and 8 years. In one study[10], 15% of injuries occurred in children pretending to use drugs. Communities are responsible for providing adequate cleanup of parks and schoolyards. Also, communities must commit to and support addiction treatment and infection prevention programs for injection drug users.

The risk of infection from exposure to blood by a needle stick injury depends on the size of the needle, the depth of penetration, and whether blood was injected. Risk is increased with the amount of blood introduced and the concentration of the virus in that blood. Follow-up after any significant needle stick injury is essential. The clinician dealing with the initial incident should ensure that the parents and child understand the importance of follow-up testing and that appropriate arrangements are made. Parents sometimes erroneously assume that if blood tests that are performed at the time of injury are negative, there is no possibility of infection and no need for further testing.

HBV

HBV is the most stable of the blood-borne viruses and can be transmitted by a minute amount of blood. The risk of acquiring HBV from an occupational needle stick injury when the source is hepatitis B surface antigen (HBsAg)-positive ranges from 2% to 40%, depending on the source's viremia level[2]. HBV can survive for up to 1 week under optimal conditions, and has been detected in discarded needles [8][26]. In both the paediatric[4] and the adult reported cases[5] of acquired HBV following needle stick injuries in the community, there was no documentation of prior HBV immunization or post-exposure prophylaxis.

Although the HBV vaccine is now recommended for all children in Canada, most programs have targeted children who are older than the usual age at which they sustain accidental needle stick injuries[27]. Thus, most children injured by needle sticks are likely to be susceptible to HBV infection. Recently introduced programs in some provinces provide HBV vaccine to infants, which will protect the age group at the highest risk of needle stick injuries. However, children not vaccinated in infancy because of jurisdictional policies or age, when infant HBV vaccination was introduced locally remain at risk, as do children whose antibody response to their first vaccine series (HBV surface antibody <10mIU/mL)is not adequately protective. For children who have not yet received the HBV vaccine, post-exposure prophylaxis with anti-HBV immunoglobulin and HBV vaccine is advised and is effective when provided promptly (Table 1)[28].

Table 1. HBV prophylaxis	
Child known to be anti-HBsAg antibody (anti-HBs) with protective titer (≥10 mIU/mL)	No action required.
Child known to be HBsAg-positive	No immediate action required. Refer appropriately if not already linked into specialist care
Child has not been fully vaccinated against HBV	Test for anti-HBs, HBsAg immediately. Await results if available within 48 h. If anti-HBs, HBsAg are negative: • Give HBIG immediately (ideally within 48 h of injury; efficacy unknown if >7 days after injury). Dose = 0.06 mL/kg, administered intramuscularly. • Give HBV vaccine at a different site to HBIG (as soon as possible, and at latest within 7 days of injury). Arrange to complete vaccine series. If anti-HBs-positive (protective titer), complete HBV vaccine series according to schedule. If HBsAg-positive, discontinue vaccine series. Arrange appropriate follow-up. If results are not available in 48 h: • Give HBIG immediately. • Give a dose of HBV vaccine (as soon as possible, and at latest within 7 days of injury) at different site to HBIG. • When results are available, proceed with vaccine and follow-up as above.

Child has been fully vaccinated against HBV	Test for anti-HBs, HBsAg. If anti-HBs results are not available in 48 h, give one dose of HBV vaccine. If anti-HBs-positive (protective titer), no further action is required. If HBsAg-negative, and anti-HBs-negative/or insufficiently protective give (40mIU/mL) HBIG and dose of HBV vaccine at different sites. If HbsAg-positive, arrange appropriate follow-up.

HBIG HBV immunoglobulin; HBsAg Hepatitis B surface antigen; HBV Hepatitis B virus.

Some experts also recommend anti-hepatitis B core antibody (anti-HBc) testing to allow a more comprehensive assessment but HBsAg and anti-HBsAg-antibody results influence decision. A reactive anti-HBc with negative HBsAg may reflect a false positive result, old resolved infection, or occult infection). ID consultant involvement is recommended.

HCV

The risk of acquiring HCV from an occupational needle stick injury when the source was infected varies from 3% to 10%[2]. HCV is thought to be a fragile virus and therefore less likely to survive in the environment, but there have been case reports[6][7] of HCV acquisition after an injury from discarded needles.

Although many drugs are now available for therapy of chronic HCV infection, their potential role for prophylaxis is not known. Because chemoprophylaxis is not yet available, follow-up HCV testing is important to determine whether a potential exposure results in transmission of HCV because 75% of infected children will develop chronic infection, which is usually asymptomatic. Children with chronic infection require referral to a specialist and antiviral treatment may be required[29].

HIV

The risk of acquiring HIV from a hollow-bore needle with blood from a known HIV-seropositive source as a result of occupational needle stick injury was between 0.2% and 0.5% in prospective studies conducted before effective ART became available[2][30]. The risk for transmission of HIV from a known HIV-seropositive source who is receiving ART and has an undetectable viral load is believed to be extremely low, but is likely not zero. In most reported instances involving transmission of HIV, the needle stick injury occurred within seconds or minutes after the needle was withdrawn from the source patient.

In contrast to the situation with health care workers, the source of blood in discarded needles is usually unknown, injury does not occur immediately after needle use, the needle rarely contains fresh blood, any virus present has been exposed to drying and environmental temperatures, and injuries are usually superficial. HIV is a relatively fragile virus and susceptible to drying. However, survival of HIV for up to 42 days in syringes inoculated with the virus has been demonstrated, with duration of survival dependent on ambient temperature[31]. One study[32] found no traces of HIV proviral DNA in syringes

discarded by people who inject drugs, while another study[33] found HIV DNA in visibly contaminated needles and syringes from sites with high drug injection activity.

It is extremely unlikely that HIV infection would occur following an injury from a needle discarded in a public place. However, if the incident involved a needle and syringe with fresh blood, and if some of the blood was injected into the child, infection is theoretically possible and prophylaxis is indicated. In early studies of occupational needle stick exposures, zidovudine prophylaxis alone was shown to reduce the risk of HIV transmission from a positive source by 80%[30]. Prophylaxis with combination ART therapy is presumed to be more effective but has not been studied. Two-drug regimens have been used for low-risk exposures in the past, but currently three drugs are recommended for all prophylaxis, based on observations in treatment of HIV infection and the assumption that maximum suppression will be most effective in preventing infection[2][34].

Other potential exposures

Although this document addresses potential exposures of children or youth to blood-borne viruses from injuries with discarded needles, the principles presented here could be extended to other potential exposures (e.g., injuries from other sharp objects contaminated with blood, sharing equipment for injection drug use, mucous membrane or nonintact skin exposure to used condoms or tampons, sexual exposure, etc.). On very rare occasions, young children have sustained a needle injury from reaching into an inappropriately accessible sharps container (e.g., one stored on the floor or table top) in various ambulatory settings. These should be considered higher-risk scenarios where post-exposure prophylaxis is administered.

RECOMMENDATIONS

In the absence of specific studies, all recommendations are based on expert opinion and extrapolations from other scientific data, with a level of evidence rating of B-III.

Prevention

- Parents, educators, and health care providers should be made aware of the problem of discarded needles.
- Children and youth should receive age-appropriate education about the potential dangers of injection drug use.
- Children should be taught not to touch or handle needles and syringes, and to report finding them to a responsible adult (a parent, teacher, or police officer), who should then arrange for the safe disposal of the needle in a puncture-proof, closed container.
- Community programs should be in place to keep parks and public places, and other public areas where children generally play, free of discarded needles[35]. Clinical settings should ensure sharps disposal containers are kept well out of reach of children.
- Programs should be in place for the treatment and control of injection drug addiction, and to adequately support HIV prevention, HBV vaccination, HCV eradication therapy, and harm reduction programs that distribute safer drug use equipment for injection drug users.

Management

- Clean the wound thoroughly with soap and water as soon as possible after the needle stick injury. Do not squeeze the area to induce bleeding.
- Assess the extent of the wound and the probability of exposure to blood through open skin lesions or mucous membranes.
- Determine the child's immunization status for tetanus and HBV.
- Administer tetanus vaccine, with or without tetanus immunoglobulin, when indicated [36].
- Document the circumstances of the injury (date and time of injury or exposure, where the needle was found, how the injury happened, the description of the needle, whether a syringe was attached, whether blood was visible in or on the needle or syringe, whether the injury caused bleeding, and whether the previous user of the needle is known).
- Obtain a blood sample from the child for:
  - Baseline HBV, HIV, and HCV status.
  - In the rare instance where ART are being started, complete blood count, differential, aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, blood urea nitrogen, and creatinine.
- Testing needles and syringes for viruses is not indicated. Results are likely to be negative, but a negative result does not rule out possibility of infection.
- When the user of the needle is known, attempts should be made to assess for risk factors for blood-borne viruses and, if possible, to test for these viruses. Pending results, proceed as for an unknown source.

Table 2. Risk assessment for HIV transmission

Source	Device	Injury
Consider high risk if • Source known to have HIV • Source unknown but presumed or known high prevalence[1] of HIV in local population of people who inject drugs.	• Consider the size of needle, whether it is hollow-bore, presence of visible blood in the needle or syringe, probability of exposure to drying, heat and freezing since use. • Large lumen devices with visible blood are highest risk.	• Consider depth and extent of trauma (scratch or deep cut, injection of blood and bleeding at the site). • Injuries with actual blood injection are high risk. Superficial scratches are low risk. • If exposure limited to mucous membranes or nonintact skin, consider extent of exposure. For example, child put syringe with visible blood into mouth and possibly injected blood – high risk; suspected but unobserved splash onto eyes or lips – low risk. Splashes involving a large volume of blood (not just a few drops) coming into contact with extensive areas of nonintact skin – high risk.

HIV Human immunodeficiency virus.
[1]>15% has been suggested [35].

HBV prophylaxis

Refer to Table 1.

HIV prophylaxis

- Assess risk of HIV transmission (Table 2) and the risks and benefits of ART prophylaxis on a case-by-case basis, taking into consideration the ability of the child to tolerate and adhere to an ART regimen for 4 weeks. Discuss the potential benefits, adverse effects, and costs of ART prophylaxis with parents—and with the child if age-appropriate—with a view to shared decision-making.
  - Recommend ART prophylaxis only in high risk situations, when the source is considered likely to have HIV, the incident involved a needle and syringe with visible blood, and blood may have been injected.
  - Discuss but do not recommend prophylaxis in low risk situations (source unlikely to have HIV or no visible blood in the device or superficial injury). Reassure parents that the chance of their child acquiring HIV as a result of this type of injury is extremely low and has, so far, never been reported.
- If the decision is made to begin ART prophylaxis:

- Start ART as soon as possible, ideally within 1 hour to 4 hours of the injury. Prophylaxis is not indicated if it cannot be initiated within 72 hours of injury occurrence[2][34][37].
- When parents considering prophylaxis are undecided, advise them that starting prophylaxis immediately is preferable. Prophylaxis is of no benefit after 72 hours, but treatment can be discontinued later, if they wish.
- Paediatricians unfamiliar with ART drugs may wish to consult a specialist in the care of children with HIV but consultation should not delay start of prophylaxis, when indicated.
- The ART agents recommended are those currently used for occupational and nonoccupational exposures and for HIV therapy[2][34][38]
  - For young children: zidovudine plus lamivudine plus raltegravir or dolutegravir (Table 3).
  - For children at least 12 years old and weighing at least 35 kg:
    emtricitabine plus tenofovir plus raltegravir or dolutegravir (Table 3). For some drugs, a pharmacist may be able to prepare a suspension if the smaller tablets are not locally available.
  - If alternative ARTs are needed (e.g., because of contraindication, intolerance, or suspected drug resistance), consult a specialist in the care of children with HIV. Alternate regimens should include two nucleoside reverse-transcriptase inhibitors and one integrase strand transfer inhibitor or protease inhibitor (Table 3).
  - Other regimens may be preferred by local authorities in some jurisdictions.
  - Tenofovir is contraindicated if renal function is abnormal.
- The duration of prophylaxis is 28 days. For dosing and other details, refer to Table 3.
- Recommendations may change as new ARTs become available. For up-to-date information and information on alternative ARTs, visit: https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv/whats-new (https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv/whats-new). [Note that American drug approvals may differ slightly from those in Canada]
- ARTs, especially protease inhibitors, may interfere with other medications. Check whether the child is taking other medications and assess for possible interactions.
- Adverse effects: There are no data to suggest that a 4-week course of ARTs has serious or long-term detrimental effects (see Table 3, footnotes). Children with HIV infection have taken these drugs for years and serious side effects are rare.
- Emergency departments and clinics in which children with needle stick injuries are seen should arrange to have ‘starter kits’ available, such that prophylaxis can begin with the least delay, when indicated.
- At the initial visit, provide drugs for 2 to 3 days and schedule a reassessment immediately afterward to review adherence, check for adverse effects and arrange further follow-up.
- If the decision is made to continue prophylaxis, prescribe drugs to complete the 28-day course.

Table 3. Antiretroviral agents recommended for post-exposure prophylaxis

Agent	Dosage and age/weight criteria	Comments
Zidovudine (ZDV)[1]–[3] (NRTI)	4 weeks to 12 years: 240 mg/M2/dose twice daily ≥12 years: 300 mg/dose twice daily	Available in oral solution 10 mg/mL; 100 mg capsules Can be taken with or without food; may be better tolerated with food.
Lamivudine (3TC)[1][3] (NRTI)	1 month to <3 months: 4 mg/kg /dose twice daily ≥3 months to 3 years: 5 mg/kg/dose (maximum 150 mg/dose) twice daily ≥3 years: 5 mg/kg/dose twice daily (maximum dose 150 mg) or 10 mg/kg/dose (maximum dose 300 mg) once daily	Available in oral solution 10 mg/mL; 100 mg, 150 mg, 300 mg tablets Can be taken with or without food; may be better tolerated with food.
Lopinavir/ritonavir (LPV/r)[2][4] (PI)	2 to 52 weeks: 300 mg LPV/75 mg r/M2/ dose twice daily 1 to 18 years: 230 mg LPV/57.5 mg r /M2/ dose twice daily (maximum 400 mg LPV/100 mg r/dose) >35 kg: 400 mg LPV/100 mg r twice daily	Available in oral solution 80 mg LPV/20 mg r /mL; 100 mg LPV/25 mg r and 200 mg LPV/50 mg r tablets Should be taken with a high fat meal or snack.
Tenofovir disoproxil (TDF)[1][6] (NRTI)	2 to 12 years: 8 mg/kg/dose once daily (maximum 300 mg/dose) ≥12 years and ≥ 35 kg: 300 mg once daily	Available only as 300 mg tablet. Lower strength TDF tablets (150 mg, 200 mg, 250 mg) are available through SAP for children who do not meet the weight requirements for the 300 mg tablets. Can be given with or without food.

Raltegravir (RAL)[5] (INSTI)	≥1 month and ≥ 3 kg: 6 mg/kg/dose twice daily (maximum 400 mg/dose) Tablets: ≥25 kg: 400 mg twice daily Chewable tablets: 3 to <6 kg: 25 mg twice daily; 6 to <10 kg: 50 mg twice daily;10 to <14 kg: 75 mg twice daily; 14 to <20 kg: 100 mg twice daily; 20 to <28 kg: 150 mg twice daily; 28 to <40 kg: 200 mg twice daily; ≥40 kg: 300 mg twice daily	Available as 400 mg and 600 mg tablets and 25 mg and 100 mg chewable tablets. Oral granules for suspension are available through SAP. Can be given with or without food.
Dolutegravir (DTG)[5]	Dispersible tablets: 3 to <6 kg: 5 mg once daily; 6 to <10 kg: 15 mg once daily; 10 to <14 kg: 20 mg once daily; 14 to <20 kg: 25 mg once daily; ≥ 20 kg: 30 mg once daily Tablets: 14 to <20 kg: 40 mg once daily ≥20 kg: 50 mg once daily	Available as 10 mg, 25 mg, and 50 mg tablets and 5 mg dispersible tablets Can be given with or without food.
Available for older children:		
ZDV+3TC[1]–[3] (NRTIs)	>30 kg: one tablet twice daily	Combination tablet contains 300 mg ZDV plus 150 mg 3TC
FTC+TDF (Truvada)[6] (NRTIs)	≥12 years and ≥35 kg: one tablet once daily	Tablet contains 200 mg FTC plus 300 mg TDF.
FTC+TAF (Descovy) (NRTIs)[6]	≥25 kg: one tablet once daily	Combination tablet contains: 200 mg FTC plus 25 mg tenofovir alafenamide (TAF) (used for patients on INSTI-based regimens), or: 200 mg FTC plus 10 mg TAF (used for patients boosted with PI regimens)

FTC+TAF+bictegravir (Biktarvy) (NRTIs + INSTI)[5][6]	≥25 kg: one tablet once daily	Combination tablet contains 200 mg FTC plus 25 mg TAF plus 50 mg bictegravir (BIC)

FTC Emtricitabine; INSTI Integrase strand transfer inhibitor; NRTI Nucleoside reverse-transcriptase inhibitors; PI Protease inhibitor ; SAP Special Access Program.
Data drawn from references[31][36].
[1] Dose adjustment required in cases of renal insufficiency.
[2]Dose adjustment may be required in cases of hepatic insufficiency.
[3] ZDV and 3TC are well tolerated. Occasionally, children experience anorexia, nausea, vomiting, diarrhea, abdominal pain, fatigue, and headache. Asymptomatic mild neutropenia, anemia, or elevation of liver enzymes may occur, which resolve after treatment is completed.
[4] LPV/r may cause nausea, vomiting, diarrhea, or abdominal discomfort. Ritonavir component acts as a booster and is not counted as a separate antiretroviral agent.
[5] FTC, RAL, DTG, and BIC are very well tolerated, with minimal adverse effects. RAL is licensed for age ≥2 years but chewable tablets may not be available in some locations. 600 mg tablets not used for prophylaxis. DTG licensed for age ≥4 weeks and ≥3 kg but 10 mg and 25 mg tablets and 5 mg dispersible tablets may not be available in some locations. Note: the dose of the DTG regular tablets and DTG dispersible tablets are different because they are not bioequivalent. RAL granules for oral suspension are available through Health Canada's SAP.
[6] TDF is well tolerated. Rarely, may cause headache, diarrhea, nausea, and vomiting. Renal tubular dysfunction reported after more prolonged use (lower risk with TAF compared to TDF). Monitor creatinine and urine protein. Contraindicated in renal dysfunction. Not licensed in Canada for children <12 years old.

Follow-up

- Arrange follow-up and advise parents of the need to monitor side-effects (if on ART prophylaxis), test for acquisition of infection and complete the HBV vaccination schedule.
- If the child is receiving ART prophylaxis:
  - Reassess at 2 to 3 days, by phone or visit.
  - Follow-up at 2 and 4 weeks for assessment of adherence, drug tolerance, complete blood count, differential, aspartate aminotransferase, alanine aminotransferase, and creatinine.
- At 4 weeks, give a second HBV vaccine dose if only one previous dose was received (consult Table 1) or if no antibody or antigen was detected on initial testing.
- At 4 to 6 weeks test for anti-HIV antibody, anti-HCV antibody, anti-HBs and HBsAg.
- At 4 to 6 months, test for anti-HIV antibody, anti-HCV antibody, anti-HBs, HBsAg and (unless previously positive)

- At 6 months, give a third HBV vaccine dose if only two previous doses have been received.
- If anti-HBsAg antibody tests negative at 6 months, test again 1 to 2 months after the third dose of vaccine. If still negative, test for HBsAg. If negative for both, give a fourth dose of HBV vaccine and test again 1 to 2 months later. If still negative, refer to an appropriate specialist.
- If HIV, HCV, or HBV infection occurs, arrange for appropriate follow-up.

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Disclaimer: The recommendations in this position statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate. Internet addresses are current at time of publication.

EXHIBIT “7”

ISSUE BRIEF

Impact of Encampment Sweeps on People Experiencing Homelessness

December 2022

Homeless encampments occur because there is a pervasive lack of affordable, permanent housing in our communities. As the cost of housing continues to exceed income, the number and scale of encampments is only increasing. Community responses to remove, or "sweep," encampments are understandable because people are rightly disturbed by the existence of homelessness, especially in the United States.[1] Not only is homelessness a clear violation of human rights, it is a stark reminder of the systemic public policy failures across the housing, health care, labor, and education sectors that have produced epidemic levels of housing instability.

Encampments can be unsafe, violent, and unhealthy places, and public health officials are rightly concerned about the impact of these congregate settings on vulnerable people. In fact, public health concerns are often used to justify sweeps, especially due to lack of access to running water and bathrooms. **However, encampment sweeps are counterproductive, costly, and harmful.** As communities struggle to address homelessness, direct service providers often observe the negative impacts of sweeps first-hand but may not be in a strong position to advocate publicly against them. Health Care for the Homeless programs (and others delivering direct care to people experiencing homelessness) often must balance multiple roles—as a service provider, a community leader, and an advocate—with a wide range of community stakeholders. Although striking this balance may be difficult, the HCH community is in a unique position to educate policymakers about the negative impacts of encampment sweeps and call for more constructive, humane approaches to truly end homelessness.

This issue brief describes the impact of sweeps on encampment residents and local communities, and provides recommendations for more constructively responding to unsheltered homelessness.

Factors that Drive Encampments

It may be difficult to understand why people live in an encampment, especially if there are homeless shelters in a community. First, not every community has a full-time shelter, it may not have beds available, it may have restrictive rules and other barriers that prohibit many from entering, or it may have banned others for prior rule violations. People using shelters cannot bring all of their possessions and may only be allowed one bag. This leaves

[1] A "sweep" is defined here as the forced disbanding of homeless encampments on public property and the removal of both homeless individuals and their property from that area. This could be through an explicit or implied threat of enforcement of criminal ordinances, or use of public health, sanitation, parking enforcement, park or other public space regulations. (Sometimes sweeps are also referred to as a "clean-up.")

them without the vital supplies they need if the shelter can only accommodate them on a short-term basis. Many shelters cannot accommodate parking, and for those that have vehicles, this jeopardizes a valuable resource needed to regain stability. Often there are requirements to participate in services that are not tailored to their specific needs, or for sobriety, which is difficult to achieve without stable housing.

Second, while some shelters are well-run and fully resourced, others can be unsafe. There are threats of violence, theft, increased substance use and sexual harassment by shelter staff and residents. Shelters can also enforce arbitrary rules, medication requirements, and curfews. Shelter residents report feeling dehumanized in shelters and that shelter staff engage in infantilization and victim blaming. It is understandable that couples or families would not want to be separated at a shelter, and elderly or LGBTQ people may feel especially unsafe. Sexual and economic exploitation are not uncommon. Large, congregate shelters can trigger anxiety or paranoia in those with mental health conditions, and many shelters are in settings that cannot accommodate disabilities, mobility limitations, or medical equipment (such as oxygen tanks or wheelchairs). Bed bugs, lice, and other harmful pests are common. The rigid hours to arrive/leave required by most shelters makes it difficult for people to maintain employment.

For these reasons, people experiencing homelessness may have no choice but to live in an encampment, or the encampment may offer advantages that area shelters do not. Encampments can offer community, safety, security, companionship, autonomy, and pooled resources to meet other practical needs. They can allow a greater sense of agency through self-governance not available in shelter settings. Encampments prevent the need to carry around one's belongings all day and can offer a stability that overnight shelters cannot. Encampments also allow families to stay together and will accommodate pets. Hence, there are many practical, rational reasons why people would prefer to live in an encampment than stay at a shelter.

Sweeps do not end homelessness. Grassroots leaders and direct service providers understand that encampment sweeps cause four general problems:

- **Sweeps damage health, well-being, and connections to care**
- **Sweeps compromise personal safety and civic trust**
- **Sweeps undermine paths to housing and financial stability**
- **Sweeps create unnecessary costs for local communities**

Each of these problems presents significant challenges to those directly impacted by forced displacement, as well as to the service providers who care for them.

Damage Health, Well-being, and Connections to Care

Encampment sweeps damage health and disrupt connections to care in that they:

- **Destroy items needed for survival:** Tents, bedding, food, cooking equipment, clothing, shoes, and other items needed for survival are destroyed, thrown away, or removed to a storage facility that residents may not be able to access. Replacing these items may not be possible and takes time and resources away from more constructive solutions.

> *"Image someone kicking in the front door to your house, demanding that you leave, then trashing all your household possessions. That's exactly what happens when police and city workers sweep a homeless encampment."*
>
> ~ **David Peery,** Co-chair, National Consumer Advisory Board

- **Cause trauma and worsen mental health conditions:** Residents report feeling dehumanized and traumatized after sweeps. Intense fear over subsequent displacement, nightmares, and sleep deprivation after sweeps all contribute to mental health deterioration. The constant fear of anticipating "the knock" of authorities coming to take them away—and never knowing when a sweep will suddenly come—contributes to anxiety and chronic stress. Sweeps also disrupt daily routines and cut off individuals from familiar surroundings and social connections, which can lead to worsening mental health symptoms and increased vulnerability. In this way, sweeps can cause the same mental health instability that policymakers use to justify the forced relocation.
- **Destroy life-saving medications and medical equipment:** Sweeps often destroy vital medications used to treat chronic and acute illnesses, as well as behavioral health conditions. Conditions such as HIV, hepatitis C, diabetes, hypertension, substance use, schizophrenia, anxiety, and depression (among many other health conditions) are especially difficult to manage absent regular medication. Unfortunately, it is often difficult to obtain replacement medications, and residents may go weeks or months without medication—leading to negative health outcomes. Medical equipment, such as wheelchairs, walkers, canes, or other assistive devices, are also lost or destroyed during encampment sweeps.
- **Sever connections to care:** Health care providers (and other direct service providers) often cannot find their patients after a sweep, and have no knowledge of where they might have gone. For some residents, outreach workers coming to an encampment may have been the only service connection that someone was accessing. Hence, the opportunity to engage someone in additional care—however tenuous that may have been—has now been lost.

> *"Encampment sweeps are especially hard on our pregnant patients. Imagine being pregnant, having all your possessions taken from you, and being forced to go somewhere else without regard to you or your unborn child. Even worse, it severs you from your connection to prenatal care, and increases stress and the risk of miscarriage."*
>
> **~Amy Grassette,** OB/Perinatal Scheduler, Family Health Center of Worcester, Massachusetts; former Chair, National Consumer Advisory Board; President, NHCHC Board of Directors

- **Undermine trust in service providers.** When service providers are present during sweeps to mitigate harm and attempt to soften the impact of the sweep, residents may view them as complicit. When service providers are not present during a sweep, they may be accused of abandoning their clients. This is a no-win situation for service providers, as they often have no decision-making authority over the sweep itself, yet receive blame from clients who now have difficulty trusting them and engaging in care.

> *"It often takes years to establish trust, and only seconds to lose it."*
> ~ **Kevin Lindamood,** CEO, Health Care for the Homeless, Baltimore

Compromise Personal Safety and Civic Trust

Encampment sweeps compromise the personal safety of residents and the broader trust in law enforcement in that they:

- **Increase arrests and assaults of residents:** Encampment residents may avoid calling 911 in life-threatening emergencies to avoid police presence and triggering a possible sweep. While police presence does not necessarily (or even usually) result in increased safety among encampment residents, the inability to use existing public safety systems in emergency situations leaves encampment residents vulnerable to violence. While crime is often used to justify a sweep, crime complaints in the surrounding community have been shown to remain the same 30 days after a sweep (though former encampment residents experienced a 28% rise in arrests and a 35% increase in the risk of physical assault).
- **Contribute to drug overdoses:** Residents lose both naloxone (Narcan®) and the protective community that would administer the medication in case of overdose. Losing vital medications—such as buprenorphine and mental health medication that might have prevented withdrawal or managed mental health symptoms—may contribute to self-medication with other drugs and contribute to a relapse. Displacement may also cause disconnection from the care team prescribing buprenorphine or make it more difficult to access a methadone clinic. These are some examples why the risk of overdose increases after a sweep, and participation in substance use treatment is disrupted.

> *"Stigma against drug use pushes people into isolation, and that's a recipe for an unwitnessed overdose. When we take away encampments, we take away a community that can serve as a first line of defense against a potential death when an overdose happens."*
> ~ **Yoela Tepper,** Substance Use Specialist, The Night Ministry, Chicago

- **Push residents into more dangerous, isolated environments:** After a sweep, residents are often pushed to more remote and isolated locations that are difficult for service providers to access. Unsafe water supply, lack of bathroom facilities, and austere terrain create additional safety risks for people who have nowhere else to go. This is especially dangerous in severe weather when the sweep likely destroyed survival

equipment such as tents, blankets, and clothing, which allowed them to be protected from weather while living outside.

- **Cause widespread fear:** Communities increasingly are using helicopters, drones, and other devices designed to terrorize people living outside and disperse them from the encampment. These approaches only cause pervasive fear and trauma, and should never be used to monitor and/or clear an encampment.
- **Increase hostile interactions with the police:** Sweeps erode already precarious relationships between homeless communities and law enforcement. It is not unusual for police to inconsistently enforce rules during or between sweeps. Residents have been given citations without being told what local ordinances they violated. Sweeps also put police (often armed) directly into conflict with encampment residents, who are understandably upset and defending their personal property. This dynamic dramatically increases the likelihood of incarceration and violence.

> *"Forced displacement of encampment residents is traumatic for both unsheltered persons and our staff. Patient care is often disrupted, and individuals are placed in more precarious and dangerous living environments. Our HCH providers struggle with the moral injury of being associated with displacing people without adequate resources. It is difficult for providers to build trusting relationships that can survive these displacements and even harder for us to continue caring for traumatized patients."*
>
> ~ **Aislinn Bird,** MD, Director of Integrated Care, Alameda County Health Care for the Homeless, Oakland

- **Disproportionately impact BIPOC groups and people with disabilities:** People experiencing homelessness are disproportionately Black, Brown, or Indigenous, especially those experiencing unsheltered homelessness. People with disabilities comprise 24% of those experiencing homelessness and often have medical conditions or mobility issues that make sweeps especially dangerous. Local officials must acknowledge the racial disparities affiliated with homelessness as well as the potential for violations of the Americans with Disabilities Act inherent in sweeps, and pursue responses that uphold principles of equity, fairness, and accommodation.
- **Violate rights:** All people living in the United States are protected under the Fourth Amendment of the Constitution from unreasonable search and seizure, and by the Eighth Amendment from excessive fines and cruel and unusual punishment. Seizing property, imposing a fine, and/or arresting someone because they are existing in a public space violates their rights.
- **Contribute to stigma:** Sweeps clearly communicate to the larger community—and to people experiencing homeless themselves—that they have little worth and are only "throw away" people. Sweeps also promote a callous societal norm toward people without homes, which makes it acceptable to not recognize the rights and value of other human beings.

Undermine Paths to Housing and Financial Stability

Encampment sweeps undermine paths to stability in that they:

- **Destroy vital records:** Residents lose driver's licenses, birth certificates, social security cards, and other vital records during sweeps, which often cannot be replaced due to cost or difficulty subsequently verifying identity. Without these documents, it is often not even possible to enter a public building to seek replacements, or apply for jobs and housing. The process of replacing vital records can take 6 to 8 months to complete. Not having identification can also cause negative police interactions.

> *"When someone's belongings get taken away, that sets us back in providing care. These folks are already living a difficult life on the streets so when these sweeps occur, it makes it that much more difficult to engage with our clients and continue medical services as well as case management needs."*
>
> ~ **Kyanna Johnson,** Lead Street Medicine Outreach Worker, Night Ministry, Chicago

- **Prevent gainful employment:** Sweeps destroy tools, uniforms, and other job-related items, which often cannot be replaced and may result in job termination. Relocation can also cause loss of access to nearby transportation points and prevent people from commuting to work.
- **Create criminal records:** Arrests resulting from sweeps then create criminal records, court dates and fines, community service judgements for minor offenses, and can result in jail time. Criminal records prevent people from obtaining housing vouchers, make people ineligible for some assistance programs, and bar them from many employment opportunities. Jail time can also result in job loss and/or interrupt medical treatment.
- **Jeopardize housing opportunities:** Ironically, sweeps undermine the likelihood of obtaining permanent housing. People living in encampments have likely been assessed for housing opportunities and entered into the community's coordinated entry system. After years of waiting, it is not unusual for a housing voucher to become available but go unused (and then the case closed) because the encampment where the client had been living has now been cleared and residents cannot be located after being dispersed.
- **Sever connections with community:** Those experiencing homelessness are often invisible to the broader community, or held in contempt. Encampments can offer a community of peers where none exists elsewhere. Sweeps destroy this community, and only further the isolation and alienation that accompanies homelessness.
- **Damage hope:** Sweeps are traumatic and dehumanizing, and they very clearly communicate to residents that they are not wanted and their lives (and their property) have no value. This is especially true when sweeps are clearly conducted for political gain, and no attempt is made to improve the quality of life for those living in the encampment. Understandably, this makes people reluctant to seek or accept services in the future. Unfortunately, it is this same dynamic that furthers the stereotype that people experiencing homelessness do not want help.

Create Unnecessary Costs for Local Communities

Encampment sweeps create high costs for communities and undermine broader goals in that they:

- **Cost millions of dollars:** Sweeps incur exorbitant costs for local communities, who must pay for bulldozers, city personnel, police, signs, fencing, court costs, storage of seized property (if offered), and other expenses. Unfortunately, none of these tax-payer expenditures creates new housing, nor do they solve homelessness. Health care providers and other non-profit community organizations spend thousands of dollars each year replacing identification, medications, and other items lost to sweeps.

> *"Every time a sweep happens, it only disrupts the health care system and adds to the criminal justice system—and that costs taxpayers a lot of money. But housing folks saves millions of dollars every day."*
>
> ~ **Paul Tunison,** Housing and Community Program Specialist, Shasta County, CA

- **Divert money from solutions such as housing:** Sweeps only shift time and attention away from constructive solutions such as building affordable housing units.

Source: HUD (2020), Exploring Homelessness Among People Living in Encampments and Associated Cost

- **Increase incarceration costs:** The conflicts inherent with encampment sweeps only increase arrests and court-involvement for people who are homeless. Minor offenses such as disorderly conduct and trespassing contribute to the overall high costs of incarceration. Conversely, arrests decrease after people enter supportive housing.
- **Undermine population health goals:** Health care providers are increasingly held responsible for the health care outcomes of their patients. When sweeps damage connections to care, undermine medication and chronic disease management, and compromise other health outcomes for larger groups of patients, insurers and health care providers have difficulty demonstrating improvements in care. Hospital and emergency department utilization may also rise. All these factors have financial implications for providers, the larger health care system, and public health goals.

> *"Encampment sweeps disrupt our ability to find our clients during outreach and often create gaps in care. The loss of medications and identifying documents—coupled with the inability to engage with their care teams—make it hard for people to get off the streets. It also has harmful effects on both the physical and mental well-being of those experiencing unsheltered homelessness."*
>
> ~ **Joy Fernandez de Narayan,** Street Medicine Team Manager, Mercy Care, Atlanta

Recommendations: H.E.L.P.S.

Rather than sweep encampments, local jurisdictions should implement strategies that focus on constructive solutions to end homelessness using a H.E.L.P.S. framework:

H	**House People:** **Housing is the solution** to homelessness. Without it, forcibly displaced people still require shelter from the elements, and will only improvise new encampments to meet basic human needs. Officials should reallocate funds previously used for sweeps to low-income affordable and/or supportive housing options for encampment residents. Preserve personal **autonomy and decision-making** and **do not force encampment residents into shelters**. Importantly, shelters are <u>not</u> housing.
E	**Earn Trust**: Officials should **involve encampment residents in all decisions** that affect their safety and well-being, and engage them in inclusive community spaces free of stigma and fear. Communities should prioritize housing and demonstrate how they are meeting community needs. Providers can **advocate against sweeps,** and **develop safety and continuity of care plans** with their clients so if there is a sweep, they have a path back to treatment and a trusting relationship.
L	**Limit Police:** Law enforcement **should not be used to clear encampments,** and **homelessness should not be criminalized**. Minor offenses should not be used as a reason to remove someone from their residence. Law enforcement should partner with residents (and service providers, if appropriate) on conflict resolution practices and receive training on trauma-informed approaches. Take steps to use mobile crisis teams before resorting to police involvement and use 988 for mental health emergencies instead of 911.
P	**Prevent Sweeps:** Stop encampment sweeps because they **create severe harm, are counterproductive, and victimize vulnerable people** who are trying to survive. **Do not remove residents' property.** These actions disrupt connections to care, compromise safety and civic trust, undermine paths to independence, and create unnecessary costs for local communities. Sweeps do not end homelessness.
S	**Support Service Interventions:** Ensure health care and other services providers are able to maintain access and deliver care in encampments. **Adopt a street medicine approach** to meet people where they are and engage them in care. Do not ask them to participate in forcible relocations, or mandate they engage in treatment (or other services) as a condition of shelter/housing. Provide encampments with public restrooms, mobile showers, period products, handwashing stations, pest control, trash cans, and regular municipal trash pick-up to **maintain a healthy environment**. Provide access to drinking water and allow food distribution. Providers can **keep copies of vital information** such as birth certificates, identification documents, and Social Security cards in patient records so copies are available in case they are destroyed.

Conclusion

As communities respond to unsheltered homelessness, is may be tempting to forcibly "sweep" encampments because they can be unsafe, and are troubling reminders of nationwide systemic policy failures. Homelessness itself is upsetting, most especially to those experiencing it directly. Unfortunately, encampment sweeps do not end homelessness. Instead, they only create more problems, such as damaging connections to care, compromising safety and civic trust, undermining paths to independence, and creating unnecessary costs for local communities.

Instead, communities should consider the perspectives of those directly impacted by sweeps and the health care and other service providers who work with them. Halting sweeps in favor of providing permanent housing, limiting police involvement, and facilitating access to low-barrier services will have greater, more productive results than forcible displacement of vulnerable people.

> *"Displacing people from their safe spaces is literally a "Groundhog's Day" effort with the City and County clearing encampments from one location to the other and the residents moving back and forth. Unless the bureaucrats join the effort to create more access to homes, it's just an ongoing game of Whack-A-Mole."*
>
> ~ **Rhonda Hauff,** CEO, Yakima Neighborhood Health Services, Yakima

Additional Resources

There is a need for more research on homeless encampments and the harms that forced sweeps have on people experiencing homelessness as well as the larger community. In addition to the resources lined above, the publications below can offer additional information to inform community responses:

Think Tank and Journal Articles

- **SSM-Qualitative Research in Health (2022)** | Harms of Encampment Abatements on the Health of Unhoused People: Describes effects of sweeps on people experiencing homelessness, including loss of property and medical necessities, relocation to isolated and dangerous environments, increased interpersonal conflict/self-policing, and greater hostile interactions with police. These effects of sweeps disrupt continuity of care and outreach workers ability to access patients and PEH are less likely to accept formal help after the trauma of sweeps. *(Chang, et al.)*
- **Journal of General Internal Medicine (2022)** | Health Impact of Street Sweeps from the Perspective of Health Care Providers: Uses in-depth qualitative interviews with medical providers and outreach workers to discuss how encampment sweeps impact patient-provider relationships and follow up care. Describes how loss of material possessions and relocation to geographically isolated areas impact health, wellbeing, and sense of community. *(Qi, et al.)*

- **BMC Public Health (2022)** | Health Risk Associated with Residential Relocation Among People who Inject Drugs in Los Angeles and San Francisco, CA: A Cross-sectional Study: Describes the impacts of health the 30 days following an encampment sweep or residential relocation. Discusses reduced substance use treatment, increased risk of violence and nonfatal overdose, more frequent experiences with jail/incarceration, and heightened food insecurity. *(Chiang, et al.)*
- **Journal of Evidence-Based Social Work (2022)** | Impact of a Homeless Encampment Closure on Crime Complaints in the Bronx, New York City, 2017: Implications for Municipal Policy: Presents a study of crime complaints 30 days before and after an encampment sweep. Researchers found no difference in crime complaints after encampment closure. *(Alan and Nolan)*
- **Kaiser Health News (2020)** | Sweeps Of Homeless Camps Run Counter To COVID Guidance And Pile On Health Risks: Discusses infectious diseases such as COVID-19 and Hepatitis A that spread and are left untreated when encampment sweeps occur. CDC guidance warned against closing encampments during the public health emergency.
- **Urban Institute (2020)** | Alternatives to Arrests and Police Responses to Homelessness: Highlights examples of constructive community approaches to homelessness, examine the connection between unsheltered homelessness and the criminal legal system, explore the negative social and monetary costs of using punitive approaches, and review the evidence around the following nonpunitive responses to unsheltered homelessness. *(Batko, et al.)*
- **Urban Institute (2020)** | Unsheltered Homelessness: Trends, Characteristics, and Homeless Histories: Analyzes the population and geographic trends of unsheltered homelessness, characteristics of people living unsheltered, and the costs of unsheltered homelessness. *(Batko, Oneto, and Shroyer)*
- **Housing Policy Debate (2018)** | "It Was Like I Lost Everything": The Harmful Impacts of Homeless-Targeted Policies: Contains feedback from interviews with people who had been forcibly moved and outlines interconnected ways that enforcements of sit–lie and nuisance policies harmed have homeless households. *(Darrah-Okike, et al.)*
- **City and Community (2014)** | The New Logics of Homeless Seclusion: Homeless Encampments in America's West Coast Cities. Presents a study of 12 encampment sites across 8 municipalities that examined exclusionary policies. Discussion of encampment sweeps as a way to marginalize people rather than offer a solution to homelessness. *(Herring)*

Government and National Partner Publications

- **Housing Not Handcuffs (2022)** | Policy Toolbox: Provides a resource toolkit about how to connect with advocacy allies in the fight against criminalization of homelessness.
- **Centers for Disease Control and Prevention (2022)** | Guidance on Management of COVID-19 in Homeless Service Sites and in Correctional and Detention Facilities: Acknowledges the risk of severe COVID-19 because of underlying medical conditions

and lack of access to health care. When community rates are high, guidance recommends encampment closures should only be conducted as part of a plan to rehouse people living in encampments, developed in coordination with local homeless service providers and health departments.

- **National League of Cities (2022)** | An Overview of Homeless Encampments for City Leaders: Explains why people live in encampments, community responses, challenges associated with encampment clearings, and recommendations for cities to pursue.
- **U.S. Department of Housing and Urban Development (HUD) (2020)** | Exploring Homelessness Among People Living in Encampments and Associated Cost: Describes how some cities are responding to homeless encampments as of 2019, synthesizing findings from a literature review, telephone interviews with nine cities, and site visits to four cities. A major focus of the report is the strategies that Chicago, Houston, San Jose, and Tacoma are using to attempt to reduce the phenomenon of encampments and provide assistance to encampment residents, and what those cities are spending on activities related explicitly to encampments.
- **HUD (2019)** | Understanding Encampments of People Experiencing Homelessness and Community Responses: Documents what is known about homeless encampments as of late 2018, based on a review of the limited literature produced thus far by academic and research institutions and public agencies, supplemented by interviews with key informants.
- **National Homeless Law Center (2017)** | Tent City, USA: The Growth of America's Homeless Encampments and How Communities are Responding: Illustrates the number of encampments, city responses, best practices, case studies, and legal standards.

EXHIBIT “8”

A HUMAN RIGHTS APPROACH

A National Protocol for Homeless Encampments in Canada

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Homeless encampments threaten many human rights, including most directly the right to housing. People living in encampments face profound challenges with respect to their health, security, and wellbeing, and encampment conditions typically fall far below international human rights standards. Residents are frequently subject to criminalization, harassment, violence, and discriminatory treatment. Encampments are thus instances of both human rights *violations* of those who are forced to rely on them for their homes, as well as human rights *claims,* advanced in response to violations of the right to housing.

Ultimately, encampments are a reflection of Canadian governments' failure to successfully implement the right to adequate housing.

As encampments increasingly emerge across Canada, there is an urgent need for governments to interact with them in a manner that upholds human rights. This Protocol, developed by the UN Special Rapporteur on the Right to Housing and her lead researcher, Kaitlin Schwan, with the input of many experts, outlines eight Principles to guide governments and other stakeholders in adopting a rights-based response to encampments. While encampments are not a solution to homelessness, it is critical that governments uphold the basic human rights and dignity of encampment residents while they wait for adequate, affordable housing solutions that meet their needs. The Principles outlined in this Protocol are based in international human rights law, and the recognition that encampment residents are rights holders and experts in their own lives. The Protocol is intended to assist governments in realizing the right to adequate housing for this group.

PRINCIPLES

Principle 1: Recognize residents of homeless encampments as rights holders

All government action with respect to homeless encampments must be guided by a commitment to upholding the human rights and human dignity of their residents. This means a shift away from criminalizing, penalizing, or obstructing homeless encampments, to an approach rooted in rights-based participation and accountability.

Principle 2: Meaningful engagement and effective participation of homeless encampment residents

Residents are entitled to meaningful participation in the design and implementation of policies, programs, and practices that affect them. Ensuring meaningful participation is central to respecting residents' autonomy, dignity, agency, and self-determination. Engagement should begin early, be ongoing, and proceed under the principle that residents are experts in their own lives. The views expressed by residents of homeless encampments

must be afforded adequate and due consideration in all decision-making processes. The right to participate requires that all residents be provided with information, resources, and opportunities to directly influence decisions that affect them.

Principle 3: Prohibit forced evictions of homeless encampments

International human rights law does not permit governments to destroy peoples' homes, even if those homes are made of improvised materials and established without legal authority. Governments may not remove residents from encampments without meaningfully engaging with them and identifying alternative places to live that are acceptable to them. Any such removal from their homes or from the land which they occupy, without the provision of appropriate forms of legal protection, is defined as a 'forced eviction' and is considered a gross violation of human rights. The removal of residents' private property without their knowledge and consent is also strictly prohibited.

Common reasons used to justify evictions of encampments, such as 'public interest,' 'city beautification', development or re-development, or at the behest of private actors (e.g., real estate firms), do not justify forced evictions.[1]

Principle 4: Explore all viable alternatives to eviction

Governments must explore all viable alternatives to eviction, ensuring the meaningful and effective participation of residents in discussions regarding the future of the encampment. Meaningful consultation should seek to maximize participation and should be supported by access to free and independent legal advice. Where personal needs differ amongst residents of encampments such that a singular best alternative is not unanimous, governments will have to develop several solutions each of which is consistent with the principles outlined in this Protocol.

Principle 5: Ensure that relocation is human rights compliant

Considerations regarding relocation must be grounded in the principle that "the right to remain in one's home and community is central to the right to housing."[2] Meaningful, robust, and ongoing engagement with residents is required for any decisions regarding relocation. Governments must adhere to the right to housing and other human rights standards when relocation is necessary or preferred by residents. In such cases, adequate alternative housing, with all necessary amenities, must be provided to all residents prior to any eviction. Relocation must not result in the continuation or exacerbation of homelessness, or require the fracturing of families or partnerships.

Principle 6: Ensure encampments meet basic needs of residents consistent with human rights

Canadian governments must ensure, at a minimum, that basic adequacy standards are ensured in homeless encampments while adequate housing options are negotiated and

[1] A/HRC/43/43, para 36.
[2] A/73/310/Rev.1, para 26.

secured. Governments' compliance with international human rights law requires: (1) access to safe and clean drinking water, (2) access to hygiene and sanitation facilities, (3) resources and support to ensure fire safety, (4) waste management systems, (4) social supports and services, and guarantee of personal safety of residents, (5) facilities and resources that support food safety, (6) resources to support harm reduction, and (7) rodent and pest prevention.

Principle 7: Ensure human rights-based goals and outcomes, and the preservation of dignity for homeless encampment residents

Governments have an obligation to bring about positive human rights outcomes in all of their activities and decisions concerning homeless encampments. This means that Canadian governments must move, on a priority basis, towards the full enjoyment of the right to housing for encampment residents. Any decision that does not lead to the furthering of inhabitants' human rights, that does not ensure their dignity, or that represents a backwards step in terms of their enjoyment of human rights, is contrary to human rights law.

Principle 8: Respect, protect, and fulfill the distinct rights of Indigenous Peoples in all engagements with homeless encampments

Governments' engagement with Indigenous Peoples in homeless encampments must be guided by the obligation to respect, protect, and fulfil their distinct rights. This begins with recognition of the distinct relationship that Indigenous Peoples have to their lands and territories, and their right to construct shelter in ways that are culturally, historically, and spiritually significant. Governments must meaningfully consult with Indigenous encampment residents concerning any decisions that affects them, recognizing their right to self-determination and self-governance. International human rights law strictly forbids the forced eviction, displacement, and relocation of Indigenous Peoples in the absence of free, prior, and informed consent.

Given the disproportionate violence faced by Indigenous women, girls, and gender diverse peoples, governments have an urgent obligation to protect these groups against all forms of violence and discrimination within homeless encampments, in a manner that is consistent with Indigenous self-determination and self-governance.

A National Protocol for Homeless Encampments in Canada: A Human Rights Approach

I. Introduction

1 In the face of escalating homelessness and housing affordability crises, many cities across Canada have seen a rise in homeless encampments. In various Canadian communities, people experiencing homelessness have turned to living in s, vehicles, or other forms of rudimentary or informal shelter as a means to survive.[3] While they vary in size and structure, the term '*encampment*' is used to refer to any area wherein an individual or a group of people live in homelessness together, often in tents or other temporary structures (also referred to as *homeless camps*, *tent cities*, *homeless settlements or informal settlements*).

2 Homeless encampments in Canada must be understood in relation to the global housing crisis and the deepening of housing unaffordability across the country. Encampments must also be understood in the context of historical and ongoing structural racism and colonization in Canada, whereby Indigenous peoples have been systemically discriminated against and dispossessed of their lands, properties, and legal systems. Other groups have also endured systemic and historical disadvantage that has created barriers to accessing housing and shelters, including 2SLGBTQ+, Black and other racialized communities, people living with disabilities, and people who are criminalized. While encampments are often framed and discussed as matters of individual poverty or deficiency, they are the result of structural conditions and the failure of governments to implement the right to housing or to engage with reconciliation and decolonization materially and in good faith.

3 Homeless encampments threaten many human rights, including most specifically the right to housing. In international human rights law, homelessness - which includes those residing in encampments - is a prima facie violation of the right to adequate housing.[4] This means that governments have a positive obligation to implement an urgent housing-focused response, ensuring that residents have access to adequate housing in the shortest possible time and, in the interim, that their human rights are fully respected.

4 Government responses to homeless encampments often fail to employ a rights-based approach. Residents of encampments are frequently the victims of abuse, harassment, violence, and forced evictions or 'sweeps.' In many cases, the issues

[3] Encampments have arisen in cities across the country, including: Abbottsford, Vancouver, Victoria, Edmonton, Toronto, Ottawa, Gatineau, Peterborough, Winnipeg, Montreal, Nanaimo, Calgary, Saskatoon, Fredericton, Moncton, Oshawa, Halifax, and Maple Ridge.
[4] A/HRC/31/54, para. 4.

associated with encampments are within the jurisdiction and responsibility of municipal authorities, including through bylaws specific to policing, fire and safety, sanitation, and social services. This has led to a pattern whereby municipal governments deploy bylaws, local police, and zoning policies that displace people in encampments, in turn compromising the physical and psychological health of people who have no place else to go and who rely on encampments to survive, absent accessible alternatives.[5]

5 Provincial, territorial, and federal governments have historically left engagement with encampments to city officials, who receive little (if any) guidance and support. Municipal authorities are often unaware of their legal obligations under international human rights law, including with respect to the duty to ensure the dignity and security of encampment residents.[6] Further, accountability mechanisms with respect to the right to housing remain weak in Canada, meaning that people living in encampments have limited avenues through which to claim this right.

6 Ensuring a human rights-based response to homeless encampments should be a key concern for every Canadian city, and all governments should employ a human rights-based framework to guide their engagement with encampment residents.

II. Purpose of the National Protocol on Homeless Encampments

7 The purpose of this document is to provide all levels of government with an understanding of their human rights obligations with respect to homeless encampments, highlighting what is and is not permissible under international human rights law. This Protocol outlines 8 broad human rights-based Principles that must guide state[7] action in response to homeless encampments of all kinds.

8 This Protocol does not attempt to foresee every possible context or challenge that may arise within encampments. Governments and relevant stakeholders must apply human rights principles as described in the Protocol to each case as it arises, endeavouring at all times to recognize and respect the inherent rights, dignity, and inclusion of encampment residents.

9 This Protocol has been developed by the UN Special Rapporteur on the right to housing in consultation with a range of experts from across Canada, including those

[5] *Abbotsford (City) v. Shantz* (2016 BCSC 2437). Online, https://www.canlii.org/en/bc/bcsc/doc/2016/2016bcsc2437/2016bcsc2437.html?resultIndex=1

[6] A/HRC/43/43, para 7.

[7] 'State' refers to all levels and branches of government and anyone exercising government authority.

with lived expertise of homelessness, urban Indigenous leaders, community advocates, researchers, lawyers, and experts in human rights law.[8]

III. Encampments in Canada in the context of the Human Right to Adequate Housing

10 Under international human rights law, everyone has the right to adequate housing as an element of the right to an adequate standard of living.[9] This requires States to ensure that housing is accessible, affordable, habitable, in a suitable location, culturally adequate, offers security of tenure, and is proximate to essential services such as health care and education.[10] The right to adequate housing includes the right to be protected from: arbitrary or unlawful interference with an individual's privacy, family, and home; any forced eviction (regardless of legal title or tenure status); and from discrimination of any kind.[11]

11 Homelessness constitutes a prima facie violation of the right to housing. It is a profound assault on a person's dignity, security, and social inclusion. Homelessness violates not only the right to housing, but often, depending on circumstances, violates a number of other human rights, including: non-discrimination; health; water and sanitation; freedom from cruel, degrading, and inhuman treatment; and the rights to life, liberty, and security of the person.[12]

12 Encampments constitute a form of homelessness, and thus are a reflection of the violation of residents' right to adequate housing. People living in encampments typically face a range of human rights violations and profound challenges with respect to their health, security, and wellbeing. Encampment conditions typically fall far below international human rights standards on a variety of fronts, often lacking even the most

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[8] This Protocol was prepared by: Leilani Farha and Kaitlin Schwan with the assistance of Bruce Porter, Vanessa Poirier, and Sam Freeman. Reviewers include, among others: Margaret Pfoh (Aboriginal Housing Management Association), Cathy Crowe (Shelter and Housing Justice Network), Greg Cook (Sanctuary Toronto), Tim Richter (Canadian Alliance to End Homelessness), Anna Cooper (Pivot Legal Society), Caitlin Shane (Pivot Legal Society), Emily Paradis (University of Toronto), Emma Stromberg (Ontario Federation of Indigenous Friendship Centres), and Erin Dej (Wilfred Laurier University).

[9] United Nations Committee on Economic, Social and Cultural Rights Committee's General Comments No. 4 (1991) on the right to adequate housing and No. 7 (1997) on forced evictions.

[10] United Nations Committee on Economic, Social and Cultural Rights Committee's General Comment No. 4 (1991) on the right to adequate housing. At the domestic level, adequate housing and core housing need is defined in relation to three housing standards: adequacy, affordability, and suitability. The Canadian Mortgage and Housing Corporation defines these housing standards in the following ways: "(1) Adequate housing are reported by their residents as not requiring any major repairs; (2) Affordable dwellings cost less than 30% of total before-tax household income; and (3) Suitable housing has enough bedrooms for the size and make-up of resident households, according to National Occupancy Standard (NOS) requirements."

[11] A/HRC/43/43.

[12] A/HRC/31/54; A/HRC/40/61, para 43.

basic services like toilets.[13] Residents of encampments are also frequently subject to criminalization, harassment, violence, and discriminatory treatment.[14]

13 In the face of poverty and deep marginalization, people without homes face many untenable choices. For example, they may be forced to choose between 'sleeping rough' on their own (putting themselves at risk of violence and criminalization), entering an emergency homeless shelter (which may be inaccessible or inappropriate for their needs, or in which their autonomy, dignity, self-reliance, and/or independence may be undermined), or residing in a homeless encampment (in which they may lack access to basic services and face threats to their health). These choices are further narrowed for those living in communities that lack any emergency shelters, or where existing shelters are at (or over) capacity.

14 For people without access to adequate housing, the availability, accessibility, appropriateness, and adequacy of shelters plays a significant role in determining whether or not a person chooses to reside in a homeless encampment. In some cities, emergency shelters operate at 95-100% capacity,[15] necessitating that some individuals sleep rough or reside in an encampment. Existing shelters may also not be low-barrier, wheelchair accessible, trans-inclusive, or safe for people experiencing complex trauma or other challenges. Homeless persons with mental health challenges, drug or alcohol dependencies, or pets may find themselves barred from shelters. Under such conditions, some individuals may prefer, or feel they have little choice but to, reside in an encampment. Encampments thus may become a necessity or the best option available for some of those the most marginalized people in Canadian society.

15 For Indigenous peoples, a desire to avoid state surveillance and a mistrust of institutional settings, including shelters, may be a factor in turning to or living in an encampment. Negative or harmful interactions with colonial institutions, such as residential schools, the child welfare system, corrections, hospitals, asylums or sanitoriums, and shelters, may be intergenerational in nature and highly traumatic. For these reasons and others, Indigenous peoples are overrepresented in homeless populations across Canada, and further to this, are more likely to be part of "outdoor" or "unsheltered" populations – including homeless encampments.[16]

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[13] See Cooper, A. (2020). *Why People Without Housing Still Need Heat*. Pivot Legal Society. Available from: http://www.pivotlegal.org/why_people_without_housing_still_need_heat

[14] A/HRC/43/43, para 31; see also *Homelessness, Victimization and Crime: Knowledge and Actionable Recommendations*. Available from: https://www.publicsafety.gc.ca/lbrr/archives/cnmcs-plcng/cn35305-eng.pdf

[15] Employment and Social Development Canada. (2018). *Shelter Capacity Report 2018*. Ottawa. Available from https://www.canada.ca/en/employment-social-development/programs/homelessness/publications-bulletins/shelter-capacity-2018.html

[16] See Ontario Federation of Indigenous Friendship Centres. (2020). *Indigenous Homelessness in the 20 Largest Cities in Canada.* Submission to the Standing Committee on Human Resources, Skills and Social Development and the Status of Persons with Disabilities, Canada.

16 Regardless of the reasons why a person resides in a homeless encampment, homeless encampments *do not* constitute adequate housing, and do not discharge governments of their positive obligation to ensure the realization of the right to adequate housing for all people. Under international human rights law, "States have an obligation to take steps to the maximum of their available resources with a view to achieving progressively the full realization of the right to adequate housing, by all appropriate means, including particularly the adoption of legislative measures."[17] As part of these obligations, States must prioritize marginalized individuals or groups living in precarious housing conditions - including residents of homeless encampments.[18]

17 Governments have an urgent, positive obligation to provide or otherwise ensure access to adequate housing - for residents of encampments as they do for all people experiencing homelessness. Governments must act to immediately pursue deliberate, concrete, and targeted efforts to end homelessness by ensuring access to adequate housing. In the interim, governments must ensure the availability of sufficient shelter spaces - accessible and appropriate for diverse needs - where dignity, autonomy, and self-determination are upheld.

18 The fact that encampments violate the right to housing does not in any way absolve governments of their obligations to uphold the basic human rights and dignity of encampment residents while they wait for adequate, affordable housing solutions that meet their needs. The Principles outlined in this Protocol seek to support governments and other stakeholders to ensure that their engagements with encampments are rights-based and recognize residents as rights holders, with a view to realizing the right to adequate housing for these groups while respecting their dignity, autonomy, individual circumstances, and personal choices.

19 International human rights law does not permit government to use force to destroy peoples' homes, even if they are made of canvas or improvised from available materials and constructed without legal authority or title. States may not remove residents from encampments without meaningfully engaging them to identify alternative places to live that are acceptable to them. Any such removal from their homes or from the land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection, consistent with international human rights law is defined as a 'forced eviction' and is considered a gross violation of human rights.

20 Unfortunately, such forced evictions or sweeps have become common in Canada. Evictions have contravened international law by being carried out without meaningful consultation with communities and without measures to ensure that those affected have access to alternative housing. They have been justified on the basis that the

[17] International Covenant on Economic, Social and Cultural Rights, art. 2 (1).
[18] A/HRC/43/4.

residents are there illegally, are at risk to themselves, are on land that is slated for development, or are obstructing the enjoyment of the community by others. Declining conditions at encampments and public health and safety concerns are also frequently the grounds on which local governments and provinces seek injunctions for removal. The impact of municipalities' failure to proactively provide resources and services to mitigate or improve those conditions and concerns is most often ignored. Some communities have engaged bylaw officers or local police to tear down encampments at first sight.[19]

21 None of these reasons, however, justify forced evictions under international law. Forced evictions often have harmful or disastrous consequences for encampment residents.[20] Victims may face life-threatening situations that compromise their health and security, or result in the loss of access to food, social supports, social and medical services, and other resources.[21]

22 Few governments have recognized encampments as a response to violations of fundamental human rights and a response to the isolation and indignity of homelessness. They have failed to treat those living in such encampments as legally entitled to the protection of their homes and their dignity.

IV. Relevant Authority

23 Canadian governments' responsibilities and relevant authority to ensure the right to adequate housing, including for people residing in encampments, is found in: (1) international human rights treaties, (2) the *National Right to Housing Act*, (3) the *Canadian Charter of Rights and Freedoms* and human rights legislation, and (4) the UN *2030 Agenda for Sustainable Development* (*The Sustainable Development Goals*).

1. International Human Rights Treaties

24 Canada has ratified multiple international human rights treaties that articulate the right to adequate housing. In 1976, Canada ratified the *International Covenant on Economic, Social and Cultural Rights*, which contains the chief articulation of the right to housing under Article 11.1 "the right of everyone to an adequate standard of living for [themselves] and [their] family, including adequate food, clothing and housing, and to

[19] Ball, V. (2019). *Encampment residents fear eviction*. The Expositor. Available from: https://www.brantfordexpositor.ca/news/local-news/encampment-residents-fear-eviction
[20] A/HRC/43/43, para 36.
[21] UN Office of the High Commissioner. (2014). *Forced Evictions: Fact Sheet No. 25/Rev.1*. Available from: https://www.ohchr.org/Documents/Publications/FS25.Rev.1.pdf; Collinson, R. & Reed, D. (2018). *The Effects of Eviction on Low-Income Households*. Available from: https://www.law.nyu.edu/sites/default/files/upload_documents/evictions_collinson_reed.pdf

the continuous improvement of living conditions."[22] The right to housing and the prohibition against forced evictions has been interpreted in General Comments No. 4 and 7[23] by the UN Committee on Economic, Social and Cultural Rights. In addition, Canada has ratified other treaties that codify the right to adequate housing, including:

- *Convention on the Rights of Persons with Disabilities*
- *Convention on the Rights of the Child*
- *Convention on the Elimination of Racial Discrimination*
- *Convention on the Elimination of Discrimination against Women*

25 Human rights ratified by Canada "extend to all parts of federal States without any limitations or exceptions," thus federal, provincial/territorial, and municipal governments are equally bound by these obligations.[24] In interpreting the right to adequate housing, the Committee on Economic, Social and Cultural Rights has emphasized that "the right to housing should not be interpreted in a narrow or restrictive sense which equates it with, for example, the shelter provided by merely having a roof over one's head or views shelter exclusively as a commodity. Rather it should be seen as the right to live somewhere in security, peace and dignity."[25]

26 Canada has also formally recognized the *UN Declaration on the Rights of Indigenous Peoples*, which also codifies the right to adequate housing and affirms that Indigenous Peoples have the right to be actively involved in developing and determining housing programmes and policies that affect them.[26] Further, Indigenous Peoples' right to land and self-determination is indivisible from the right to housing under international human rights law, meaning that they "shall not be forcibly removed from their lands or territories and that no relocation shall take place without their free, prior and informed consent."[27] All encampments are located on the traditional territories of Indigenous nations, including in cities, towns, and rural areas. On these territories, Indigenous Peoples' right to land and self-determination is in effect, whether or not those lands are subject to land claims or treaty.

1. Canadian Housing Policy and Legislation

27 The right to housing has also recently been recognized in Canadian legislation. In June 2019, the *National Housing Strategy Act* (the *Act*) received royal assent in Canada. The *Act* affirms Canada's recognition of the right to housing as a fundamental human

[22] ICESCR, Article 11, masculine pronouns corrected.
[23] General Comment 4 (1991), UN Doc. E/1992/23; General Comment 7 (1997), UN Doc. E/1998/22.
[24] A/69/274.
[25] General Comment 4 (1991), para 7.
[26] A/74/183.
[27] A/74/183.

right and commits to further its progressive realization as defined under the *International Covenant on Economic, Social and Cultural Rights.*

28 The Preamble and Section 4 of the *Act* underscore the interdependence of the right to housing with other fundamental rights, such as the right to life and an adequate standard of health and socio-economic wellbeing. Specifically, Section 4 states:

> It is declared to be the housing policy of the Government of Canada to:
>
> (a) recognize that the right to adequate housing is a fundamental human right affirmed in international law;
>
> (b) recognize that housing is essential to the inherent dignity and well-being of the person and to building sustainable and inclusive communities;
>
> (c) support improved housing outcomes for the people of Canada; and
>
> (d) further the progressive realization of the right to adequate housing as recognized in the International Covenant on Economic, Social and Cultural Rights.

2. The Canadian Charter and Provincial/Territorial Human Rights Legislation

29 The government of Canada's international human rights obligations must be considered by courts in Canada when determining the rights of residents of encampments under domestic law,[28] particularly the *Canadian Charter of Rights and Freedoms*.[29] The Supreme Court has recognized that the right to "life, liberty and security of the person" in section 7 of the *Charter* may be interpreted to include the right to housing under international law.[30] Canada has told the UN that it accepts that section 7 at least ensures access to basic necessities of life and personal security.[31]

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[28] It should be noted that a human rights-based approach under domestic law should entail mindfulness about core human rights and equality principles, such as substantive equality and non-discrimination, which recognizes that state interventions be particularly attuned to the specific needs of particular groups, including those impacted by systemic and historical disadvantage. In this regard, a 'one size fits all' approach may not fully capture the distinct needs of groups residing within encampments.

[29] *R. v. Hape,* [2007] 2 S.C.R. 292, 2007 SCC 26, para 56: "In interpreting the scope of application of the Charter, the courts should seek to ensure compliance with Canada's binding obligations under international law where the express words are capable of supporting such a construction."

[30] *Irwin Toy Ltd. v. Quebec* (Attorney General), [1989] 1 S.C.R. 927; See Martha Jackman and Bruce Porter, "Social and Economic Rights", in Peter Oliver, Patrick Maklem & Nathalie DesRosiers, eds, *The Oxford Handbook of the Canadian Constitution* (New York: Oxford University Press, 2017), 843-861.

[31] Canada's commitments are described in *Victoria (City) v. Adams*, 2008 BCSC 1363 (CanLII), paras 98-99. Online, http://canlii.ca/t/215hs

30 In Canada, courts have considered the human rights implications of encampments, and have emphasized that Section 7 life and security of the person interests are engaged where state action poses significant harm to the health and wellbeing of persons enduring homelessness and housing insecurity. For example, Canadian courts have recognized that the daily displacement of people experiencing homelessness causes physical and psychological harm. The Court accepted in the case of *Abbotsford (City) v. Shantz*, that "the result of repeated displacement often leads to the migration of homeless individuals towards more remote, isolated locations as a means to avoid detection. This not only makes supporting people more challenging, but also results in adverse health and safety risks." The court recognized that these health and safety risks include "impaired sleep and serious psychological pain and stress."[32]

31 In the case of *Victoria v. Adams,*[33] residents of an encampment challenged a bylaw that prevented them from constructing temporary shelter in a park, on the basis of which city officials had secured an injunction to evict them. The British Columbia Supreme Court agreed that while the *Charter* does not explicitly recognize the right to housing, international law is a persuasive source for *Charter* interpretation and found that the bylaw violated the residents' right to security of the person. The BC Court of Appeal upheld the decision of the BC Supreme Court and other decisions in British Columbia have followed.[34] In *British Columbia v. Adamson* 2016,[35] for example, the court found that in the absence of alternative shelter or housing for all people experiencing homelessness, encampment residents must not be evicted from their encampment. In *Abbotsford v. Shantz* 2015[36] the Court found that denying encampment residents space to erect temporary shelters on public property was "grossly disproportionate to any benefit that the City might derive from furthering its objectives and breaches the s. 7 *Charter* rights of the City's homeless."[37]

32 The right to equality is also protected under the Canadian Charter as well as under federal, provincial, and territorial human rights legislation. Not all levels of government interpret or administer human rights codes in the same manner, with each province and territory administering its own human rights codes.[38] Regardless of jurisdiction, the UN Committee on Economic, Social and Cultural Rights has stated that the right to

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[32] *Abbotsford (City) v. Shantz*, 2015 BCSC 1909, paras 213 and 219.
[33] *Victoria (City) v. Adams*, 2008 BCSC 1363 (CanLII), paras 85-100. Online, http://canlii.ca/t/215hs
[34] Key examples of case law includes: *Victoria v. Adams* 2008/ 2009, *Abbotsford v. Shantz* 2015, *BC v. Adamson* 2016, and *Vancouver (City) v. Wallstam* 2017.
[35] *British Columbia v. Adamson* (2016 BCSC 1245). Online, https://www.canlii.org/en/bc/bcsc/doc/2016/2016bcsc1245/2016bcsc1245.html?resultIndex=1
[36] *Abbotsford (City) v. Shantz* (2016 BCSC 2437). Online, https://www.canlii.org/en/bc/bcsc/doc/2016/2016bcsc2437/2016bcsc2437.html?resultIndex=1
[37] *Abbotsford (City) v. Shantz* (2016 BCSC 2437), para 224. Online, https://www.canlii.org/en/bc/bcsc/doc/2016/2016bcsc2437/2016bcsc2437.html?resultIndex=1
[38] For an overview of provincial and territorial human rights codes, see: https://ccdi.ca/media/1414/20171102-publications-overview-of-hr-codes-by-province-final-en.pdf

equality should be interpreted to provide the widest possible protection of the right to housing and has urged Canadian courts and governments to adopt such interpretations.[39]

33 While it is clear that the *Charter* provides some protection from forced evictions and sweeps of encampment residents, the extent to which it requires governments to address the crisis of homelessness that has led to reliance on encampments remains unresolved. The Supreme Court of Canada has yet to agree to hear an appeal in a case that would clarify the obligations of governments to address homelessness as a human rights violation. The Supreme Court has, however, been clear that the *Charter* should, where possible, be interpreted to provide protection of rights that are guaranteed under international human rights law ratified by Canada.

34 Governments should not use uncertainty about what courts might rule as an excuse for violating the human rights of those who are homeless. Canadian governments have an obligation, under international human rights law, to promote and adopt interpretations of domestic law consistent with the right to adequate housing. The UN Committee on Economic, Social and Cultural Rights has expressed concern that governments in Canada continue to argue in court against interpretations of the *Canadian Charter* that would protect the rights of homeless persons and residents of homeless encampments.

35 Therefore, it is critically important that, as part of a Protocol based on respect for human rights, municipal, provincial/territorial, and federal governments instruct their lawyers not to undermine international human rights or oppose reasonable interpretations of the *Charter* based on international human rights. They should never seek to undermine the equal rights of residents of homeless encampments to a dignified life, to liberty, and security of the person.

3. UN 2030 Agenda for Sustainable Development

36 In September 2015, member states of the United Nations, including Canada, adopted the *2030 Agenda for Sustainable Development* (*2030 Agenda*). Target 11.1 of the SDGs specifically identifies that by 2030, all States must "ensure access for all to adequate, safe and affordable housing and basic services and to upgrade informal settlements." This means governments must take steps to eliminate homelessness and make cities inclusive, safe, resilient and sustainable. Upgrading informal settlements

[39] CESCR, General Comment No. 9, para 15; E/C.12/1993/5, paras 4, 5, and 30.

includes the upgrading of homeless encampments.[40] States have affirmed that a rights-based approach to the SDG's is critical if they are to be achieved.[41]

V. Key Principles

37 It is critical that all levels of government in Canada employ an integrated human rights-based approach when engaging with encampments. The Principles outlined here aim to support the right to housing for all encampment residents as part of Canada's commitment to the right to housing under international human rights treaties and domestic law.

PRINCIPLE 1: Recognize residents of homeless encampments as rights holders

38 All government action with respect to homeless encampments must be guided by a commitment to upholding the human rights and human dignity of their residents. For many governments and those exercising governmental authority, this will mean a shift away from criminalizing, penalizing, or obstructing encampments, to an approach rooted in rights-based participation and accountability.[42]

39 This will mean understanding encampments as instances of both human rights *violations* of those who are forced to rely on them for their homes, as well as human rights *claims* advanced in response to violations of the right to housing. While encampments arise as a result of governments failing to effectively implement the right to housing, they can also be an expression of individuals and communities claiming their legitimate place within cities, finding homes within communities of people without housing, asserting claims to lands and territories, and refusing to be made invisible. They are a form of grassroots human rights practice critical to a democracy such as Canada's.[43] For Indigenous peoples, the occupation of lands and traditional territories vis-à-vis encampments may also be an assertion of land rights, claimed in conjunction with the right to housing.

40 In recognition of encampments as rights violations and rights claims, governments must rectify the policy failures that underpin the emergence of homeless encampments, while simultaneously recognizing residents as rights holders who are advancing a legitimate human rights claim. Their efforts to claim their rights to home

[40] A/73/310/Rev.1.

[41] The *National Housing Strategy* of Canada mirrors many of the commitments made in the *2030 Agenda*. However, the *Strategy* only commits Canada to reducing chronic homelessness by 50%, despite the *2030 Agenda*'s imperative to eliminate homelessness and provide access to adequate housing for all.

[42] A/73/310/Rev.1, para 15.

[43] A/73/310/Rev.1.

and community must be supported, not thwarted, criminalized, or dismissed as illegitimate or gratuitous protest.[44]

PRINCIPLE 2: Meaningful engagement and effective participation of encampment residents

41 Ensuring encampment residents are able to participate in decisions that directly affect them is "critical to dignity, the exercise of agency, autonomy and self-determination."[45] As rights holders, encampment residents are entitled to "participate actively, freely and meaningfully in the design and implementation of programmes and policies affecting them."[46] Meaningful engagement must be grounded in recognition of the inherent dignity of encampment residents and their human rights, with the views expressed by residents of homeless encampments being afforded adequate and due consideration in all decision-making processes.

42 Governments and other actors must engage encampment residents in the early stages of discussion without using the threat of eviction procedures or police enforcement to coerce, intimidate, or harass.[47] Engagement should proceed under the principle that residents are experts in their own lives and what is required for a dignified life.[48] Indigenous residents of encampments should also be engaged in decision-making processes in a manner that is culturally-safe and trauma informed.

43 In the context of homeless encampments, the right to participate requires that all residents be provided with information, resources, and opportunities to directly influence decisions that affect them. All meetings with government officials or their representatives regarding the encampment should be documented and made available to encampment residents upon request.

44 Participation processes must comply with all human rights principles, including non-discrimination. Compliance with international human rights law requires:

i. **Provision of necessary institutional, financial, and other resources to support residents' right to participate**
In order to participate in decisions that affect them, encampment residents should be provided with financial and institutional resources (e.g., wifi/internet access, meeting spaces) that support their active participation in decision-making. Such supports should include, but are not

[44] A/73/310/Rev.1.
[45] A/HRC/43/43, para 20.
[46] Ibid. See also the Committee on the Rights of the Child's General Comment No. 21 (2017) on children in street situations.
[47] A/HRC/40/61, para 38.
[48] A/HRC/43/43, para 21.

limited to: legal advice, social service supports, Indigenous cultural supports, literacy supports, translation, mobility supports, and transportation costs to attend consultations or meetings.[49] These resources should support democratic processes within the encampment, including community meetings, the appointment of community leaders, and the sharing of information.[50] Residents must be granted a reasonable and sufficient amount of time to consult on decisions that affect them.

ii. **Provision of relevant information about the right to housing**
Encampment residents must be provided with information about their right to housing, including information about procedures through which they can hold governments and other actors accountable, as well as specific information about the rights of Indigenous Peoples.[51]

iii. **Provision of relevant information concerning decisions that affect residents, ensuring sufficient time to consult**
Encampment residents must be provided with all relevant information in order to make decisions in matters that affect them.[52]

iv. **Establishment of community engagement agreement between homeless encampment residents, government actors, and other stakeholders**
In order to facilitate respectful, cooperative, and non-coercive communication between residents, government, and other stakeholders, government may seek to collaborate with residents to create a formal community engagement agreement (when appropriate and requested by residents).[53] This agreement should outline when and how encampment residents will be engaged,[54] and should be ongoing and responsive to the needs of the encampment residents.[55] It should allow the residents of homeless encampments to play an active role in all aspects of relevant proposals and policy, from commencement to conclusion. Residents should be able to challenge any decision made by government or other actors, to propose alternatives, and to articulate their own demands and priorities. Third party mediators should be available to protect against power imbalances that may lead to breakdown in negotiations or create

[49] Committee on Economic, Social and Cultural Rights' General Comment No. 4, para. 12, and the basic principles and guidelines on development-based evictions and displacement (A/HRC/4/18, annex I, para. 39).
[50] A/73/310/Rev.1.
[51] A/73/310/Rev.1, para 19.
[52] A/73/310/Rev.1.
[53] A/73/310/Rev.1.
[54] A/73/310/Rev.1.
[55] United Nations. *Guiding Principles on Extreme Poverty and Human Rights*, foundational principles, para 38.

unfair results.[56] Relevant government authorities and professionals should also be provided with "training in community engagement and accountability."[57]

v. **Provision of equitable opportunities for the meaningful participation of all encampment residents**

As a matter of human rights law, particular efforts must be taken to ensure equitable participation by women, persons with disabilities, Indigenous Peoples, migrants, and other groups who experience discrimination or marginalization.[58] Where possible, members of these groups should be afforded central roles in the process.[59]

Principle 2 in Action – The "People's Process" in Kabul, Afghanistan

The upgrading of informal settlements was identified as a key goal in the *2030 Agenda for Sustainable Development*, committing States to "upgrade slums" by 2030 (target 11.1). As identified by the UN Special Rapporteur on the right to adequate housing, "Participation in upgrading requires democratic processes through which the community can make collective decisions." Under international human rights law, the democratic processes required to upgrade slums mirrors encampment residents' right to participate in plans to resolve their housing needs. As such, democratic processes implemented to upgrade informal settlements in cities around the world can provide helpful examples for Canadian homeless encampments.

One such example is the "people's process" in Kabul, Afghanistan. This process delineates community leadership and control over the upgrading process, and includes an organizational structure that enables the community to engage different levels of government. As part of this process, "local residents elect community development councils responsible for the selection, design, implementation and maintenance of the projects." City staff are trained to work alongside informal settlement residents to implement and complete upgrading.

[56] A/HRC/43/4, para 42.
[57] A/73/310/Rev.1, para 20.
[58] A/HRC/43/4.
[59] Committee on Economic, Social and Cultural Rights, General Comment No. 21 (2009) on the right of everyone to take part in cultural life, in particular para 16.

PRINCIPLE 3: Prohibition of forced evictions of encampments

45 Under international human rights law, forced evictions constitute a gross violation of human rights and are prohibited in all circumstances, including in the context of encampments.[60]

46 Forced evictions are defined as "the permanent or temporary removal against their will of individuals, families and/or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection … in conformity with the provisions of the International Covenants on Human Rights."[61]

47 Forced evictions are impermissible irrespective of the tenure status of those affected. This means that the forced eviction of encampments is prohibited if appropriate forms of protection are not provided – including all of the requirements described in this Protocol.[62] It may also be considered a forced eviction when governments' and those acting on their behalf harass, intimidate, or threaten encampment residents, causing residents to vacate the property.[63]

48 Common reasons used to justify evictions of encampments, such as 'public interest,' 'city beautification', development or re-development, or at the behest of private actors (e.g., real estate firms), do not justify forced evictions.[64] Evictions (as opposed to "forced evictions") may be justified in rare circumstances, but they may only be carried out after exploring all viable alternatives with residents, in accordance with law and consistent with the right to housing, as described in this Protocol.

49 Governments must repeal any laws or policies that sanction forced evictions and must refrain from adopting any such laws, including for example anti-camping laws, move-along laws, laws prohibiting tents being erected overnight, laws prohibiting personal belongings on the street, and other laws that penalize and punish people experiencing homelessness and residing in encampments.[65]

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[60] A/HRC/43/43, para 34; CESCR General Comment No.7.
[61] CESCR General Comment No.7.
[62] A/HRC/43/43, para 34; also see: "Security of tenure under domestic law should not, consequently, be restricted to those with formal title or contractual rights to their land or housing. The UN guiding principles on security of tenure (A/HRC/25/54, para. 5), states that security of tenure should be understood broadly as "a set of relationships with respect to housing and land, established through statutory or customary law or informal or hybrid arrangements, that enables one to live in one's home in security, peace and dignity."
[63] UN Office of the High Commissioner. (2014). *Forced Evictions: Fact Sheet No. 25/Rev.1*. Available from: https://www.ohchr.org/Documents/Publications/FS25.Rev.1.pdf
[64] A/HRC/43/43, para 36.
[65] See, for example, Ontario's *Safe Street's Act* (1999).

Principle 3 in Action: Forced Eviction & Harassment of Homeless Encampment Residents

In cities around the world, people experiencing homelessness are frequently subject to discriminatory treatment, harassment, and extreme forms of violence because of their housing status. People residing in homeless encampments are exposed to similar or worse treatment, particularly when faced with pressure to relocate or disperse.

In some cases, local laws, policies, or practices can provide the mechanisms for this harassment. For example, in British Columbia local authorities enforced a bylaw prohibiting overnight shelters in parks by using tactics that included spreading chicken manure and fish fertilizer on a homeless encampment. Residents and allies of the homeless encampment subsequently filed a human rights complaint with regard to these practices (*Abbotsford (City) v. Shantz)*, and the BC Supreme Court found that certain bylaws violated encampment residents' constitutional rights to life, liberty and security of the person.

Under international human rights law, such activities are strictly prohibited and constitute instances of forced eviction, even if they align with local laws or policies. Given this, it is critical that Canadian governments review local and national policies and laws to ensure they do not violate the prohibition against the forced eviction of homeless encampments.

PRINCIPLE 4: Explore all viable alternatives to eviction

50 Government authorities must explore all viable alternatives to eviction, in consultation with encampment residents.[66] This means ensuring their meaningful and effective participation in discussions regarding the future of the encampment.

51 Free and independent legal advice should be made available to all residents to help them understand the options, processes, and their rights. Consultations should be conducted at times and locations that are appropriate and accessible for residents to ensure their participation is maximised. Financial and other support should be available to residents so that they can fully participate in all discussions regarding the future of the encampment and so that residents can retain outside consultants (e.g., environmental engineers, architects) where needed to assist them in developing alternative options to eviction.

52 Discussions regarding viable alternatives to eviction must include meaningfully engagement with Indigenous Peoples and be grounded in principles of self-determination, free, prior and informed consent. In urban contexts, for example, urban Indigenous organisations should be engaged early in the planning process to establish service delivery roles and to ensure the availability of culturally appropriate services.

[66] A/HRC/43/4.

53 Where personal needs differ amongst residents of encampments such that a singular best alternative is not unanimous, governments will have to develop several solutions each of which is consistent with the principles outlined in this Protocol.

PRINCIPLE 5: Ensure that any relocation is human rights compliant

54 Homeless encampments are not a solution to homelessness, nor are they a form of adequate housing. Governments have an urgent, positive obligation to ensure encampment residents have access to long-term, adequate housing that meets their needs, accompanied by necessary supports. Rather than eviction, governments must engage with homeless encampments with a view to ensuring residents are able to access such housing.

55 Despite this obligation, many governments respond to encampments by simply moving residents from one bad site to another through the use of law enforcement, physical barriers, or other means, and without meaningfully engaging residents. This in no way addresses the underlying violations of the right to housing experienced by residents of encampments, is often costly, and can contribute to increased marginalization. If relocation is deemed necessary and/or desired by encampment residents, it is critical that it is conducted in a human rights compliant manner.

56 As a starting point, meaningful, robust, and ongoing engagement with residents (as defined in Principle 2) is required for the development of any relocation of homeless encampments or of their residents. Meaningful engagement with communities should ensure the development of plans that respect the rights of residents and can be implemented cooperatively, without police enforcement.[67] Considerations regarding relocation must be grounded in the principle that "the right to remain in one's home and community is central to the right to housing."[68] If relocation is consistent with the human rights of residents, it will almost always be achievable without the use of force.

57 If government authorities propose the relocation of residents of homeless encampments, and the residents desire to remain in situ, the burden of proof is on the government to demonstrate why in situ upgrading is unfeasible.[69]

58 If, after meaningful engagement with those affected, relocation is deemed necessary and/or desired by encampment residents, adequate alternative housing must be provided in close proximity to the original place of residence and source of livelihood.[70] If governments have failed to provide residents with housing options that

[67] A/HRC/40/61, para 38.
[68] A/73/310/Rev.1, para 26.
[69] A/73/310/Rev.1, para 32.
[70] A/HRC/4/18, annex I, para. 60.

they find acceptable, residents must be permitted to remain or be provided with a satisfactory alternative location, while adequate permanent housing options are negotiated and put in place.

59 If, in the exceptional case there is no viable alternative to eviction by authorities, eviction must be compliant with all aspects of international human rights law.[71] Compliance with international human rights law requires:

i. **Prohibition against the removal of residents' private property without their knowledge and consent**
The removal of residents' private property by governments and those acting on their behalf, including the police, without their knowledge and consent, in strictly prohibited.[72] Such actions are contrary to the rights of residents and may contribute to the deepening of residents' marginalization, exclusion, and homelessness.[73] Governments and police must also seek to actively prevent the removal of homeless residents' private property by private actors or any other form of harassment.

ii. **Adherence to the right to housing and other human rights standards when relocation is necessary or preferred**
Adequate alternative housing, with all necessary amenities (particularly water, sanitation and electricity), must be in place for all residents prior to their eviction.[74] Alternative housing arrangements should be in close proximity to the original place of residence and to services, community support, and livelihood.[75] It is critical that all encampment residents be allowed to participate in decisions regarding relocation, including the timing and site of relocation.[76] A full hearing of the residents' concerns with the proposed relocation should be held, and alternatives explored.

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[72] A/HRC/4/18, *Basic Guidelines on Development Based Evictions,* see para 50: "States and their agents must take steps to ensure that no one is subject to direct or indiscriminate attacks or other acts of violence, especially against women and children, or arbitrarily deprived of property or possessions as a result of demolition, arson and other forms of deliberate destruction, negligence or any form of collective punishment. Property and possessions left behind involuntarily should be protected against destruction and arbitrary and illegal appropriation, occupation or use."
[73] National Law Centre on Homelessness & Poverty. (2017). *Violations of the Right to Privacy for Persons Experiencing Homelessness in the United States*. Available from: https://nlchp.org/wp-content/uploads/2018/10/Special-Rapporteur-Right-to-Privacy.pdf. See para 7: "For them, whatever shelter they are able to construct, whether legally or illegally, is their home, and their right to privacy should inhere to that home the same as it would for any regularly housed person. To deny them that right is to further marginalize and dehumanize this already highly marginalized and dehumanized population."
[74] A/73/310/Rev.1, para 34.
[75] Basic principles and guidelines on development-based evictions and displacement (A/HRC/4/18, annex I, para. 60) and A/HRC/4/18, annex I, para. 60.
[76] A/73/310/Rev.1, para 31.

iii. **Relocation must not result in the continuation or exacerbation of homelessness, or require the fracturing of families or partnerships**

Relocation must not result in the continuation or deepening of homelessness for residents.[77] Relocation must not require the separation of families or partners, as defined by rights-holders themselves, including chosen family and other kinship networks.[78] Governments should engage encampments with a view to keeping the community intact, if this is desired by the residents.[79] Governments should also ensure that relevant housing policies are supportive of the ways in which rights-holders define their own families, partnerships, communities and extended Indigenous kindship structures, and accommodate these whenever possible in public or social housing.

iv. **Access to justice to ensure procedural fairness and compliance with all human rights**

Access to justice must be ensured at all stages of government engagement with encampment residents, not just when eviction is imminent.[80] Access to justice and legal protection must meet international human rights law standards,[81] including the provision of due process, access to legal aid, access to fair and impartial legal advice, and the ability to file complaints in a relevant forums (including Indigenous forums) that are geographically proximate.[82]

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[77] A/73/310/Rev.1.

[78] UN Office of the High Commissioner. (2014). *Forced Evictions: Fact Sheet No. 25/Rev.1*. Available from: https://www.ohchr.org/Documents/Publications/FS25.Rev.1.pdf. See para 52: "States should also ensure that members of the same extended family or community are not separated as a result of evictions."; also, UNHR Summary Conclusions on the Family Unit, Available at https://www.unhcr.org/protection/globalconsult/3c3d556b4/summary-conclusions-family-unity.html , see para 8:"International human rights law has not explicitly defined 'family' although there is an emerging body of international jurisprudence on this issue which serves as a useful guide to interpretation. The question of the existence or non-existence of a family is essentially a question of fact, which must be determined on a case-by-case basis, requiring a flexible approach which takes account of cultural variations, and economic and emotional dependency factors. For the purposes of family reunification, 'family' includes, at the very minimum, members of the nuclear family (spouses and minor children)."

[79] A/HRC/43/43, para 42.

[80] A/HRC/43/43.

[81] Committee on Economic, Social and Cultural Rights, General Comment No. 7, para 3.

[82] It should be noted that broad and inclusive participatory-based processes can potentially foster access to justice for equity-seeking groups, and such processes should be responsive to the unique barriers to justice these groups face.

Principle 5 in Action - *Melani v. City of Johannesburg*

Globally, there are many compelling examples of courts upholding the rights of informal settlements or homeless encampments right to remain in place ("in situ") in their community. One such example is *Melani v. City of Johannesburg* in South Africa. In this case, the Slovo Park informal settlement challenged the City of Johannesburg's decision to relocate the community to an alternative location 11 km away. The court held that the Government's upgrading policy, as required by the constitutional right to housing, envisages "a holistic development approach with minimum disruption or distortion of existing fragile community networks and support structures and encourages engagement between local authorities and residents living within informal settlements." The Court concluded that relocation must be "the exception and not the rule" and any relocation must be to a location "as close as possible to the existing settlement." The Court ordered the City of Johannesburg to reverse the decision to relocate the community, and mandated the city to apply for funding for in situ upgrading.

The South African approach is an example of how some national courts are making the shift to adopt a human rights-based approach to encampments. This is a shift that moves in the right direction and should be applied by all courts in Canada.

PRINCIPLE 6: Ensure encampments meet basic needs of residents consistent with human rights[83]

60 Much of the stigma attached to residents of encampments is a result of governments failing to ensure access to basic services, including access to clean water, sanitation facilities, electricity, and heat, as well as support services.[84] These conditions violate a range of human rights, including rights to housing, health, physical integrity, privacy, and water and sanitation.[85] In these conditions, residents face profound threats to dignity, safety, security, health, and wellbeing.[86] The denial of access to water and sanitation by governments constitutes cruel and inhumane treatment, and is prohibited under international human rights law.[87]

[83] Details regarding securing basic needs consistent with human rights can be found in Schedule B.
[84] A/73/310/Rev.1.
[85] A/HRC/43/4.
[86] UN Water. *Human Rights to Water and Sanitation*. Available from: https://www.unwater.org/water-facts/human-rights/
[87] A/73/310/Rev.1, para 46: "Attempting to discourage residents from remaining in informal settlements or encampments by denying access to water, sanitation and health services and other basic necessities, as has been witnessed by the Special Rapporteur in San Francisco and Oakland, California, United States of

61 Canadian governments must ensure, at a minimum, that rudimentary adequacy standards are ensured in homeless encampments on an urgent and priority basis, while adequate housing options are negotiated and secured. Government's compliance with international human rights law requires:

i. Access to safe and clean drinking water

Water and sanitation are critical to health for all people. Through *Resolution 64/292*, the United Nations explicitly recognized the right to safe and clean drinking water and sanitation as a "human right that is essential for the full enjoyment of life and all human rights."[88] The *Resolution* calls upon States and international organizations "to provide safe, clean, accessible and affordable drinking water and sanitation for all." This obligation extends to those residing in homeless encampments.[89]

ii. Access to hygiene and sanitation facilities

Homeless encampments must be provided with sufficient resources and supports to ensure access to hygiene and sanitation facilities – toilets, showers, hand-washing stations, for example – within the encampment, or within very close proximity. Using existing facilities that remain open to the general public will not be appropriate. Facilities should ensure the hygiene and dignity of all residents irrespective of needs or identity. Peer-led hygiene and sanitation facilities have worked well in some contexts.

iii. Resources and support to ensure fire safety

General safety precautions should be implemented in an encampment environment to ensure residents are safe from fire and chemical exposure. Fire Departments should assist residents in developing a harm reduction approach to fire safety.

iv. Waste management systems

The lack of waste management systems in encampments has serious health and safety implications. Encampments necessarily create garbage during the course of daily activities. Garbage piles can become combustible fire hazards and can increase the risk of exposure to chemical waste. Human and animal biological waste also poses a particular danger. Without sanitary facilities, accumulated fecal waste can contaminate the

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America, 29 constitutes cruel and inhuman treatment and is a violation of multiple human rights, including the rights to life, housing, health and water and sanitation."

[88] A/RES/64/292, para 2. Available at: https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292.

[89] A/RES/64/292, para 3. Available at: https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292.

ground and transmit diseases.[90] The improper disposal of needles can also transmit diseases through puncture wounds or re-use of needles. It is the responsibility of governments to ensure that homeless encampments have sufficient resources for the establishment of waste management systems.

v. Social Supports and Services

Residents of homeless encampments should be ensured access to health, mental health, addiction, and broader social services in a manner equitable to other community residents and consistent with human rights. All supports should be culturally appropriate and anti-oppressive. Governments should consult encampment residents on how best to provide access to these services, including through approaches such as outreach and/or on-site service provision. The provision of social services should not be linked to data gathering of any kind.

vi. Guarantee Personal Safety of Residents

Although research indicates that unsheltered people in Canada are disproportionately targets of violence, rather than perpetrators,[91] interpersonal violence and exploitation can occur within encampments. interpersonal violence is often exacerbated when people do not have their basic needs met,[92] thus the provision of meaningful resources and supports will likely help ameliorate issues of safety.

It is the State's duty to protect the safety of all residents, particularly those who may be particularly vulnerable to abuse, harm, trafficking, or exploitation. Responses to violence must be guided by principles of transformative justice, rather that reproduce punitive outcomes and must be based in community-developed safety protocols. Governments must recognize that engaging police or other state authorities as a response to violence in encampments may put people at increased risk of harm, including due to risks of being criminalized or incarcerated.

vii. Facilities and resources that support food safety

Consuming contaminated food or water can cause a variety of foodborne

[90] CalRecycle. *Homeless Encampment Reference Guide*. Available at: https://www.calrecycle.ca.gov/illegaldump/homelesscamp#SolidWaste

[91] Sylvia, N., Hermer, J., Paradis, E., & Kellen, A. (2009). "More Sinned Against than Sinning? Homeless People as Victims of Crime and Harassment." In: Hulchanski, J. David; Campsie, Philippa; Chau, Shirley; Hwang, Stephen; Paradis, Emily (Eds.), *Finding Home: Policy Options for Addressing Homelessness in Canada* (e-book), Chapter 7.2. Toronto: Cities Centre, University of Toronto. www.homelesshub.ca/FindingHome

[92] Slabbert, I. (2017). Domestic violence and poverty: Some women's experiences. *Research on social work practice*, *27*(2), 223-230.

illnesses. Encampments are often more susceptible to foodborne illnesses due to a lack of storage, cooling appliances, improperly cooked foods, and limited or no access to clean water. Diseases can spread quickly in an encampment setting.

One of the best ways to prevent the spread of illness is to for governments to provide resources that enable the encampment to implement food safety measurements such as refrigeration facilities, which are also important for storing medicines.

viii. Resources to support harm reduction

Governments must provide encampments with the resources to implement effective harm reduction measures. Appropriate professionals should support residents to establish emergency protocols for responding to overdoses and other health emergencies.

ix. Rodent and pest prevention

The presence of rodents and pests can pose a significant threat to the health of residents. Appropriate prevention and treatment options should be available for pest management that are safe for use in human environments. Encampment residents should be provided with the resources to prevent and address the presence of rodents and pests.

62 In implementing these standards, it must be recognized that residents of encampments are experts with respect to their living spaces — they often know what resources are needed and how best to mobilize them. As a matter of human rights, residents must be engaged in planning and carrying out any measures developed to improve access to basic services. Practices, systems, and agreements residents have already put in place should be respected by government officials and should inform any further improvements.

PRINCIPLE 7: Ensure human rights-based goals and outcomes, and the preservation of dignity for encampment residents

63 As a matter of international human rights law, the rights and dignity of residents must be at the heart of all government engagement with homeless encampments.[93] Dignity is an inherent human rights value that is reflected in the *Universal Declaration of Human Rights*. As such, Canadian governments have an obligation to bring about positive human rights outcomes in all of their activities and decisions concerning homeless encampments.

[93] ICESCR.

64 Where Canadian governments at any level make decisions with regards to encampments, it is essential that they do so taking into account the full spectrum of human rights of residents and ensure that their enjoyment of those rights is enhanced by all decisions. Any decision that does not lead to the furthering of human rights, fails to ensure their dignity, or represents a backwards step in terms of their enjoyment of human rights, is contrary to human rights law.

65 More broadly, the Canadian government has an obligation to the progressive realization of the right to housing, alongside all other human rights.[94] A central component of that obligation is to address on an urgent basis the needs of those in the greatest need. This means that Canadian governments must move, as a matter of priority, towards the full enjoyment of the right to housing for encampment residents.[95] When governments fail to bring about positive human rights outcomes for encampment residents, they fail their obligation to progressively realize the right to housing.[96]

PRINCIPLE 8: Respect, protect, and fulfill the distinct rights of Indigenous Peoples in all engagements with encampments

66 Indigenous Peoples in Canada experience some of the most severe and egregious forms of housing need, and are dramatically overrepresented in homeless populations across the country, including specifically amongst those who are sleeping rough.[97] Under these conditions, many Indigenous Peoples experience profound violations of the right to housing and the right to self-determination, as well as violations of the right to freely pursue their economic, social, and cultural development.[98]

67 For Indigenous Peoples in Canada, encampments and political occupation may occur simultaneously as a means of survival and a means of asserting rights to lands and

[94] ICESCR, in General Comment No.3 on the nature of states parties' obligations under Art 2(1) of the ICESCR.
[95] ICESCR, Article 2(1).
[96] Further, if governments failed to ensure human rights outcomes were obtained for encampment residents, and residents suffered some detriment to their enjoyment of their rights (e.g., loss of dignity or ended up street homeless without any shelter at all), this might be classed as retrogression and a breach of obligations.
[97] See ESDC (Employment and Social Development Canada). (2019). *Everyone counts highlights: Preliminary results from the second nationally coordinated point-in-time count of homelessness in Canadian communities.* Retrieved from https://www.canada.ca/en/employment-social-development/programs/homelessness/reports/highlights-2018-point-in-time-count.html#3.5. Similarly, the 2018 Toronto Street Needs Assessment documented that 16% of those enumerated were Indigenous, and 38% of those sleeping rough were Indigenous. See also Patrick, C. (2014). *Aboriginal Homelessness in Canada: A Literature Review. Toronto: Canadian Homelessness Research Network Press*. Retrieved from https://www.homelesshub.ca/sites/default/files/AboriginalLiteratureReview.pdf.
[98] Article 3 of the *Declaration* and article 1 of the *Covenant*.

territories within cities and elsewhere. Whatever the impetus, any government engagement with Indigenous Peoples in encampments must be guided by the obligation to respect, protect, and fulfil their distinct rights. These rights are outlined in the United Nations Declaration on the Rights of Indigenous Peoples, as well as many other international human rights treaties.

68 Under international human rights laws, the enjoyment of the right to housing for Indigenous Peoples is "deeply interconnected with their distinct relationship to their right to lands, territories and resources, their cultural integrity and their ability to determine and develop their own priorities and strategies for development."[99] Recognition of the indivisible nature of Indigenous Peoples' human rights, and the obligation to uphold these rights, must shape all government engagement with Indigenous encampment residents, as well as the Indigenous Peoples who own or occupy the land or territories upon which the encampment is located.

69 Compliance with international human rights law requires:

i. **Recognition of the distinct relationship that Indigenous Peoples have to their lands and territories**

In order to ensure adequate housing for Indigenous Peoples, States, Indigenous authorities, and other actors must recognize the distinct spiritual and cultural relationships that Indigenous Peoples have with their lands and territories.[100] This recognition includes protection for Indigenous residents of encampments, who have the right to utilize their lands and territories in line with their own economic, social, political, spiritual, cultural, and traditional practices (as defined and assessed by the Peoples themselves).[101]

Under international human rights law, governments "should respect those housing structures which an Indigenous community deems to be adequate in the light of their own culture and traditions."[102] In the context of encampments, governments must respect Indigenous Peoples' right to construct shelter and housing in ways that incorporate their lived histories, cultures, and experiences.[103]

ii. **Guarantee of self-determination, free, prior and informed consent and**

[99] A/74/183, particularly para 6: "The right to adequate housing can be enjoyed by Indigenous Peoples only if its articulation under article 11 (1) of the International Covenant on Economic, Social and Cultural Rights is understood as interdependent with and indivisible from the rights and legal principles set out in the United Nations Declaration on the Rights of Indigenous Peoples."
[100] A/74/183.
[101] A/74/183.
[102] A/74/183, para 62.
[103] A/74/183.

meaningful consultation of Indigenous Peoples

Governments must ensure the participation of Indigenous Peoples in all decision-making processes that affect them.[104] Governments must consult with Indigenous encampment residents in order to obtain their free, prior, and informed consent before taking any action that may affect them.[105] Engagement with Indigenous communities should involve genuine dialogue and should be guided by "mutual respect, good faith and the sincere desire to reach agreement."[106] This consultation process must engage representatives chosen by Indigenous Peoples themselves, in accordance with their own procedures and practices.[107] As outlined in Principle 2, governments must provide Indigenous residents with necessary institutional, financial, and other resources in order to support their right to participate.[108] Indigenous women and girls must be consulted on a priority basis.[109]

iii. Prohibition against the forced eviction, displacement, and relocation of Indigenous Peoples

Indigenous Peoples' access to and control over their lands, territories and resources constitute a fundamental element of the realization of their right to adequate housing.[110] As such, international human rights law strictly prohibits the relocation of Indigenous Peoples in the absence of free, prior, and informed consent.[111]

iv. Protection and guarantees against all forms of violence and discrimination for Indigenous women, girls, and gender diverse peoples

Indigenous women, girls, gender diverse, and Two-Spirit peoples experience particular forms of violence – including sexual violence and

[104] United Nations Declaration on the Rights of Indigenous Peoples.
[105] United Nations Declaration on the Rights of Indigenous Peoples, in particular arts. 10, 19, and 23.
[106] A/74/183, para 56.
[107] United Nations Declaration on the Rights of Indigenous Peoples, art. 18. See also Indigenous and Tribal Peoples Convention, 1989 (No. 169), art. 6(1)(b); American Declaration on the Rights of Indigenous Peoples, arts. XXI (2) and XXIII (1); and A/HRC/18/42, annex (Expert Mechanism advice No. 2 (2011)). See also Human Rights Committee, General Comment No. 23 (1994) on the rights of minorities, para 7.
[108] Committee on Economic, Social and Cultural Rights' General Comment No. 4, para 12, and the basic principles and guidelines on development-based evictions and displacement (A/HRC/4/18, annex I, para 39).
[109] A/74/183, para 59.
[110] A/74/183, para 51. See also A/HRC/7/16, paras 45–48; The United Nations Declaration of the Rights of Indigenous Art. 26.2: "Indigenous Peoples have the right to own, use, develop, and control the lands, territories and resources that they possess by reason of traditional occupation or use, as well as those which they have otherwise acquired."
[111] United Nations Declaration on the Rights of Indigenous Peoples, Art. 10: "Indigenous Peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior and informed consent of the Indigenous Peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return."

homicide – in relation to the intersection of their indigeneity, gender identity, socioeconomic and cultural status, and their housing status.[112] Canadian law recognizes the concept of multiple and intersecting forms of discrimination, and under international human rights law all Indigenous women, girls, and those who are gender diverse or Two-Spirited "must enjoy full protection and guarantees against all forms of violence and discrimination, whether inside or outside their communities."[113]

It is incumbent upon governments to provide Indigenous women and girls protection and guarantee against all forms of violence and discrimination within encampments, including from state authorities, in a manner that is consistent with Indigenous self-determination and self-governance.

[112] A/74/183, para 59.
[113] A/74/183, para. 59.

SCHEDULE A: Select Case Law on Homeless Encampments in Canada

Victoria (City) v. Adams, 2009 BCCA 563[114]

The City of Victoria made an application for an injunction to remove a "tent city" at Cridge Park. The City relied on its *Streets and Traffic Bylaw* and *Parks Regulation Bylaw, which* prohibits loitering and taking up an overnight temporary residence in public places. On appeal, the Court of Appeal established that the Victoria City bylaws violated section 7 of the *Canadian Charter* "in that they deprive homeless people of life, liberty and security of the person in a manner not in accordance with the principles of fundamental justice," and the provisions were not saved by section 1 of the *Charter* (para. 42). The Court of Appeal confirmed that the bylaw was overbroad "because it is in effect at all times, in all public places in the City."[115]

Abbotsford (City) v. Shantz, 2015[116]

The City of Abbotsford applied for an interim injunction requiring the defendants to remove themselves and their encampment from a city park. The Court concluded that the bylaws were "grossly disproportionate" because:

> "the effect of denying the City's homeless access to public spaces without permits and not permitting them to erect temporary shelters without permits is grossly disproportionate to any benefit that the City might derive from furthering its objectives and breaches the s. 7 *Charter* rights of the City's homeless."[117]

The Court concluded that allowing the City's homeless to set up their shelters overnight and taking them down during the day would "reasonably balance the needs of the homeless and the rights of other residents of the City."[118]

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[114] *Victoria(City) v. Adams* (2009, BCCA 563). Online, https://www.canlii.org/en/bc/bcca/doc/2009/2009bcca563/2009bcca563.html?resultIndex=1

[115] The Court of Appeal stated at para. 116 that: "The prohibition on shelter contained in the Bylaws is overbroad because it is in effect at all times, in all public places in the City. There are a number of less restrictive alternatives that would further the City's concerns regarding the preservation of urban parks. The City could require the overhead protection to be taken down every morning, as well as prohibit sleeping in sensitive park regions." This case is perhaps one of the most notable successes in homeless litigation in Canada.

[116] *Abbotsford (City) v. Shantz* (2016 BCSC 2437). Online, https://www.canlii.org/en/bc/bcsc/doc/2016/2016bcsc2437/2016bcsc2437.html?resultIndex=1

[117] Para 224

[118] The Court stated, "The evidence shows, however, that there is a legitimate need for people to shelter and rest during the day and no indoor shelter in which to do so. A minimally impairing response to balancing that need with the interests of other users of developed parks would be to allow overnight shelters to be erected in public spaces between 7:00 p.m. and 9:00 a.m. the following day."[para 276]

British Columbia v. Adamson, 2016 BCSC 584 [*Adamson #1*] and 2016 BCSC 1245 [*Adamson #2*][119]

The Province of BC applied for an interlocutory injunction to restrain the defendant encampment residents from trespassing on the Victoria courthouse green space. On the first application, the court concluded that the balance of convenience did not favour the granting of the injunction, stating

> "the balance of convenience is overwhelmingly in favour of the defendants, who simply have nowhere to move to, if the injunction were to issue, other than shelters that are incapable of meeting the needs of some of them, or will result in their constant disruption and a perpetuation of a relentless series of daily moves to the streets, doorways, and parks of the City of Victoria."[120]

Following this, a second injunction was filed based on new evidence of the encampment deterioration conditions, as well as supporting evidence that the Province would make housing available to encampment residents. The court made an order requiring the encampment to be cleared, but granting residents to stay until alternate housing options were made available to them.[121]

Vancouver (City) v. Wallstam, 2017 BCSC 937[122]

The City of Vancouver applied for an interlocutory injunction requiring encampment residents to vacate and remove all tents and other structures from a vacant city lot. The Court relied on the injunction test set out in *RJR-MacDonald.*[123] The court noted that:

> "The test requires that the *applicant* prove *it will suffer irreparable harm* if the injunction is not granted...When I asked counsel what harm the *City* would suffer if the injunction was not granted, he answered that not granting the injunction would mean that a 'vital social housing project won't go ahead' and that interferes with the public good. He also points out the timeline for development of the project requires the injunction urgently … While everyone can agree that more social housing is an important goal, I must balance that general concern against the position of the occupants that the tent city, as it currently exists, is now providing shelter and safe living space for the occupants."[124]

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[119] *British Columbia v. Adamson* (2016 BCSC 1245). Online, https://www.canlii.org/en/bc/bcsc/doc/2016/2016bcsc1245/2016bcsc1245.html?resultIndex=1

[120] Para 183.

[121] Paras 85-86,

[122] *Vancouver (City) v. Wallstam* 2017 BCSC 937 at para 60. Online, https://www.canlii.org/en/bc/bcsc/doc/2017/2017bcsc937/2017bcsc937.html?resultIndex=1

[123] In *RJR-MacDonald Inc. v. Canada (Attorney General)*, [1994] 1 S.C.R. 311

[124] Para 46-47.

The court concluded that the City failed to meet the *RJR-MacDonald* test and dismissed the City's application, but without prejudice to bring it forward again on a more complete factual record.[125]

[125] Para 64.

SCHEDULE B: An Elaboration on Principle 6

Ensure encampments meet basic needs of residents consistent with human rights

Canadian governments must ensure, at a minimum, that rudimentary adequacy standards are ensured in homeless encampments on an urgent and priority basis, while adequate housing options are negotiated and secured. Government's compliance with international human rights law requires:

i. **Access to safe and clean drinking water**

Water and sanitation are critical to health for all people. Through *Resolution 64/292*, the United Nations explicitly recognized the right to safe and clean drinking water and sanitation as a "human right that is essential for the full enjoyment of life and all human rights."[126] The *Resolution* calls upon States and international organizations "to provide safe, clean, accessible and affordable drinking water and sanitation for all." This obligation extends to those residing in homeless encampments.[127]

To ensure access to safe and clean drinking water, governments should provide homeless encampments with resources for:

- On site/close-proximity clean and safe drinking/potable water, ensuring a sufficient number of access points for water relative to the number of residents
- Dishwashing Station(s) with clean water, sufficient in number for the number of residents

ii. **Access to hygiene and sanitation facilities**

Homeless encampments must be provided with sufficient resources and supports to ensure access to hygiene and sanitation facilities – toilets, showers, hand-washing stations, for example – within the encampment, or within very close proximity. Using existing facilities that remain open to the general public will not be appropriate. Facilities should ensure the hygiene and dignity of all residents irrespective of needs or identity. Peer-led hygiene and sanitation facilities have worked well in some contexts.

Hygiene and sanitation facilities should include:

- Washing stations, including showers with privacy and safety for women and gender diverse peoples, stocked with soap, water, paper towels

[126] A/RES/64/292, para 2. Available at: https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292.
[127] A/RES/64/292, para 3. Available at: https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292.

- Adequate numbers of toilets based on the encampment population which must be accessible for residents with disabilities. Every toilet station must also have a hand-washing station
- Access to cleaning and bathing supplies
- Access to free laundry facilities
- Free feminine hygiene products
- Access to clean bedding

iii. Resources and support to ensure fire safety

General safety precautions should be implemented in an encampment environment to ensure residents are safe from fire and chemical exposure. Fire Departments should assist residents in developing a harm reduction approach to fire safety. Residents should be provided with resources to support best safety practices, including:

- Fire-safety approved sources of heat (e.g., safe metal vessels for heat)
- Warming tents
- In-tent heat sources
- Fire-proof tents
- Fire evacuation plan
- Signage indicating evacuation plans
- Accessible information on fire safety tips and how to handle and store flammable materials (e.g., gasoline, butane, propane)
- Fire extinguishers appropriately spaced and training for residents on how to operate them
- Electricity/charging stations for phones and laptops
- On-site ashtrays or cigarette disposal posts

iv. Waste management systems

The lack of waste management systems in homeless encampments has serious health and safety implications. Encampments necessarily create garbage during the course of daily activities, including during food preparation or shelter building. Unwanted materials can pile up quickly when there is no waste system in place to remove garbage from the area. Garbage piles can become combustible fire hazards and can increase the risk of exposure to chemical waste.

Human and animal biological waste also poses a particular danger. Without sanitary facilities, accumulated fecal waste can contaminate the ground and transmit diseases.[128] The improper disposal of needles can also transmit diseases through puncture wounds or re-use of needles.

[128] CalRecycle. *Homeless Encampment Reference Guide*. Online at https://www.calrecycle.ca.gov/illegaldump/homelesscamp#SolidWaste

It is the responsibility of governments to ensure that homeless encampments have sufficient resources for the establishment of waste management systems, which should include:

- Weekly garbage and recycling (more frequent if needed)
- Regular service for waste water and portable toilets
- Independent waste bins for flammable/hazardous waste (e.g., fuel, motor oil, batteries, light bulbs)
- Large rodent-proof waste bins with tight fitting lids
- Garbage bags, cleaning supplies, hand soap, hand sanitizer
- Waste water holding tanks (if there are no sewers near encampment)

v. Social Supports and Services

Residents of homeless encampments should be ensured access to health, mental health, addiction, and broader social services in a manner equitable to other community residents and consistent with human rights. All supports should be culturally appropriate and anti-oppressive. Governments should consult encampment residents on how best to provide access to these services, including through approaches such as outreach and/or on-site service provision. The provision of social services should not be linked to data gathering of any kind.

i. Guarantee Personal Safety of Residents

Although research indicates that unsheltered people in Canada are disproportionately targets of violence, rather than perpetrators,[129] interpersonal violence and exploitation can occur within encampments. interpersonal violence is often exacerbated when people do not have their basic needs met,[130] thus the provision of meaningful resources and supports will likely help ameliorate issues of safety.

It is the State's duty to protect the safety of all residents, particularly those who may be particularly vulnerable to abuse, harm, trafficking, or exploitation. Responses to violence must be guided by principles of transformative justice, rather that reproduce punitive outcomes and must be based in community-developed safety protocols. Governments must recognize that engaging police or other state authorities as a response to violence in encampments may put people at increased risk of harm, including due to risks of being criminalized or incarcerated.

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[129] Sylvia, N., Hermer, J., Paradis, E., & Kellen, A. (2009). "More Sinned Against than Sinning? Homeless People as Victims of Crime and Harassment." In: Hulchanski, J. David; Campsie, Philippa; Chau, Shirley; Hwang, Stephen; Paradis, Emily (Eds.), *Finding Home: Policy Options for Addressing Homelessness in Canada* (e-book), Chapter 7.2. Toronto: Cities Centre, University of Toronto. www.homelesshub.ca/FindingHome

[130] Slabbert, I. (2017). Domestic violence and poverty: Some women's experiences. *Research on social work practice*, *27*(2), 223-230.

Any approach to addressing interpersonal safety within encampments must:

- Center on the most vulnerable members of the encampment, namely: BIPOC, women, trans-people and other LGBTQ2S+ persons, persons with disabilities, and other groups who experience discrimination or marginalization.
- Provide resources and supports to allow for Indigenous and other non-colonial approaches to conflict resolution.
- Provide safe, confidential, accessible, and non-coercive mechanisms through which individuals experiencing violence can report these experiences and receive trauma-informed supports and services, ensuring that these individuals are able to access alternative safe housing (as desired).

vi. Facilities and resources that support food safety

Consuming contaminated food or water can cause a variety of foodborne illnesses. Encampments are often more susceptible to foodborne illnesses due to a lack of storage, cooling appliances, improperly cooked foods, and limited or no access to clean water. Diseases can spread quickly in an encampment setting.

One of the best ways to prevent the spread of illness is to for governments to provide resources that enable the encampment to implement food safety measurements. This includes:

- Rodent-proof storage containers, with lids that can be sealed
- Shelving units to ensure food is stored off the ground
- Soap and sanitizer to clean food preparation surfaces
- Cooling appliance(s) to prevent spoilage
- Cooking appliance(s) to ensure food is thoroughly cooked

vii. Resources to support harm reduction

Governments must provide homeless encampments with the resources to implement effective harm reduction measures within homeless encampments. Appropriate professionals should support residents to establish emergency protocols for responding to overdoses and other health emergencies. Encampment residents should be provided with:

- Overdose prevention training (e.g., CPR training)
- Overdose prevention supplies (e.g., Naloxone)
- Overdose Prevention Sites, where possible
- Puncture-proof containers for needle disposal
- Harm reduction outreach supports
- Regular servicing of puncture-proof containers by a certified waste-management company

- Information about available emergency services in the event of overdoses or other health-related crises

viii. Rodent and pest prevention

The presence of rodents and pests can pose a significant threat to the health of residents. Appropriate prevention and treatment options should be available for pest management that are safe for use in human environments (e.g., diatomaceous earth). Encampment residents should be provided with the resources to prevent and address the presence of rodents and pests, including:

- Resources and information on rodent and pest prevention
- A bait-station to detract rodents from sleeping tents, regularly serviced and monitored
- Cleaning materials and gloves to dispose of rodents

In implementing these standards, it must be recognized that residents of encampments are the experts of their living spaces — they often know what resources are needed and how best to mobilize them. As a matter of human rights, encampment residents must be engaged in planning and carrying out any measures developed to improve access to basic services for the encampment. Practices, systems, and agreements residents already have in place should be recognized by government officials and should inform any further improvements.

EXHIBIT “9”

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Sheltered from the heat? How tents and shade covers may unintentionally increase air temperature exposures to unsheltered communities

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ABSTRACT

Objective: Heat vulnerability and homelessness are central public health concerns in cities globally, and public health implementation should address these two challenges in tandem to minimize preventable heat-related morbidity and mortality. Populations facing unsheltered homelessness use tents (or similar shelters) with shading features to minimize sun and heat exposure. This study evaluates the efficacy of different tent cover (shading) materials and how they moderate the in-tent air temperature (T_{air}) exposures of tent users during extreme summer conditions.

Study design: Within-tent T_{air} monitoring using Kestrel Drop devices occurred across three full typical summer days in Phoenix, Arizona in July 2022.

Methods: In-tent T_{air} were statistically compared between six small side-by-side identical tents with different cover materials (control (no cover), mylar, white bedsheet, tarp, sunbrella fabric, aluminum foil), as well as with ambient T_{air}.

Results: Using any tent resulted in higher daytime in-tent T_{air} than ambient T_{air}. Further, compared to a control tent, the T_{air} within tents shaded with sunbrella, tarp, and white bedsheet had significantly higher T_{air} at all times (2.36 °C, 2.46 °C, and 1.11 °C higher T_{air}, respectively), controlling for T_{air} and day/night.

Conclusion: Adding cover materials over tents may increase heat risk to an already vulnerable population at certain times of the day. Higher in-tent T_{air} is attributable to the reduced ability for heat and vapor to escape, largely due to reduced ventilation (mixing). Local authorities and welfare associations should reconsider using unventilated tents for shading and promote more widespread, ventilated tents and shade to ensure that prevention efforts do not further marginalize the most vulnerable. Future work should incorporate more comprehensive measurements of solar radiation to quantify overall heat stress for exposure reduction techniques.

1. Introduction

Those experiencing unsheltered homelessness[a] are highly predisposed to severe outdoor conditions exacerbated by intrinsic sociodemographic attributes, making them highly susceptible to hazards [1–3]. For instance, those experiencing homelessness have a 17.5-year shorter life span than the general populace, thus it is critical to align public health interventions with the unique challenges of those experiencing homelessness [4]. Specifically, extreme heat events and outdoor heat exposures are central public health concerns [5–9]. In Maricopa County, Arizona, the homeless population—both unsheltered and sheltered[b]—accounted for approximately 59.7 % and 42.4 % of the total heat-related deaths for 2020 and 2021, respectively [10]. In 2020, a staggering 2.3 % of the known homeless population of Maricopa County died due to heat-related causes. Moreover, Longo et al. [11] found that the population experiencing homelessness faces 241 % higher heat stress than college students in Phoenix, Arizona. These statistics demonstrate the disproportionate heat-health outcomes among people experiencing homelessness, and any public health intervention strategy must be inclusive and comprehensive to address drivers of differential health outcomes, especially for populations underrepresented and marginalized in research. Accordingly, this study examines the effectiveness of

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[a] Unsheltered homeless refers to populations sleeping on the streets or places not meant for human habitation [34].
[b] Sheltered homeless refers to populations staying in emergency shelters, transitional housing, or safe haven programs [34].

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tents and tent covers as a public health intervention strategy in modifying the in-tent thermal experience of people experiencing homelessness.

Factors amplifying the heat susceptibility of the unsheltered homeless include the prevalence of chronic ailments, higher rates of respiratory disorders, mental illnesses, sheltering in high-risk urban areas, inequitable policies and practices, and greater heat exposure [12–14]. Within Maricopa County, the point-in-time count of those experiencing homelessness showed a higher rate of increase of unsheltered (34 %) versus sheltered (9 %) people between 2020 and 2022, translating to increased heat risks as communities experiencing homelessness are unable to avoid direct heat exposure [7,15]. Globally, homelessness constitutes a public health challenge [16]; thus, it is crucial to investigate how certain public health interventions address the specific needs of disproportionately vulnerable groups toward strengthening subsequent public health strategies.

Climate projections indicate an increasing trend of extreme heat intensity, magnitude, and duration of heat events, which could mean a higher predisposition in the homeless community [17,18]. Climate change exacerbates heat vulnerability, especially among the socially disadvantaged, translating to increased cases of heat-related morbidity and mortality. These risks compound the vulnerability of the unsheltered homeless, amplifying heat susceptibility [19,20–22]. Therefore, there is a compelling need to understand the effectiveness of adaptation and/or mitigation strategies embraced by people experiencing homelessness. Attempts to bridge health disparities must also consider homelessness to obtain tangible solutions, as public health cannot be disassociated from the larger socioeconomic context [1,9,23,24].

The co-occurrence of heat vulnerability and homelessness remains understudied and has received minimal academic and policy interest. Heat events manifest as a multiplicity of outcomes ranging from health deterioration, decreased physical and mental well-being, increased financial challenges, mobility impairment, and impediments to social services [25,26]. In this regard, differential implications of heat exist [1,8], which are less understood yet could have profound implications on institutional and individual response strategies. People experiencing homelessness are not well represented in disaster health planning [7], and the response/mitigation measures instituted fail to reflect their heat-hazard context [27,28]. Many response plans adopt a 'treatment first model'[c] instead of a 'housing first model'[d] [17,23,29].

Moreover, current heat alerts fail to reach the unsheltered homeless population, meaning that the nature of heat-hazard response could lead to maladaptation [1]. For instance, the homeless prevention program only served 676 individuals and families in Phoenix for the financial year 2022, yet the total number of people experiencing homelessness was 9,026, indicating that a large proportion of the most at-risk population is highly exposed to the extremely hot summer conditions [30]. More so, the legal and social invisibility associated with homelessness excludes them from conventional databases resulting in policy stigmatization, inefficiencies, and inconsideration [31,32]. Therefore, it is imperative to specifically study such marginalized groups. One strategy often used to help minimize heat exposure for unsheltered communities during the hot summer months involves providing tents of various types, and adding more material as shade to reduce sun exposure. However, the effectiveness of such a strategy in safeguarding against heat exposure has not been examined.

Accordingly, this study evaluates the efficacy of different tent cover (shading) materials and how they moderate the air temperature of tent users during extreme summer conditions in Phoenix, Arizona. Results act as a means of informing targeted responses for the most vulnerable population. The study deviates from merely quantifying sociodemographic dimensions of vulnerability to demonstrating situational factors affecting thermal exposure in unhoused communities and providing next steps and recommendations.

2. Methods

2.1. Study site, data collection, experiment setup

Phoenix, located in the Sonoran Desert (33.44 N, 112.02 W), experiences extreme heat in the summer (June–August) with average minimum and maximum daily temperatures of ~83 °F (28.3 °C) and ~107 °F (41.6 °C), respectively (2010–2020 period) [33]. Despite these extreme conditions, the point-in-time counts of the people experiencing homelessness indicated a 22 % (total count of 9026) increase for 2022 compared to 2020. The sheltered homeless count was 3997 (9 % increase), while the unsheltered homeless were 5029 (34 % increase) [34]. Although the human services campus (a partnership of organizations with a shared goal of ending homelessness) served approximately 12,180 individuals in 2022, the unsheltered homeless numbers continue to rise across the area while they remain highly vulnerable to hazards given that they cannot avoid the exposure. The unsheltered homeless often use tents, whose efficacy in reducing heat vulnerability has not been examined.

We considered a typical summertime period in Phoenix with data collection lasting three days and three nights (6.00 p.m. on 7/8/2022 to 6.00 p.m. on 7/11/2022), where the weather conditions fairly represented average summer conditions for the City of Phoenix. The experimental setup used six identical small tents side-by-side on an open concrete surface (basketball court) at a local school, each receiving a different cover material. The choice of identical tents allows for uniform comparison across shade types, and the tents' design, size, and material reflect the standard tent used by people experiencing homelessness in Phoenix. The basketball court was selected as the surface of choice as it reflects nearly exact surface conditions in the streets of Phoenix (concrete or asphalt surfaces) where the people experiencing homelessness install their tents in the open air. The first tent (control) did not have any cover material. The cover materials' albedos for tents 2 through 6 are as follows (see also Fig. 1).

Tent 2: mylar rescue blanket, 92 % albedo
Tent 3: white cotton bedsheet, 57 % albedo
Tent 4: blue tarp, 43 % albedo
Tent 5: sunbrella fabric 67 % albedo
Tent 6: aluminum foil on corrugated cardboard (79 % albedo)

Albedos were determined by using the ratio of outgoing to incoming solar radiation with an NR01 Net Radiometer (Huskeflux, Inc.). The choices of these cover materials and the surface were informed by observations made during rescue missions at the Human Services Campus in Downtown Phoenix, whose primary objective is to provide severely needed resources for populations experiencing homelessness.

Environmental measurements were taken with Kestrel sensors[e]. First, a 5400 Kestrel Heat Meter monitored ambient conditions in the areas and was situated on a tripod (1 m height) approximately 10 m from the tents (see Fig. 1). Variables used in analyses include ambient T_{air}, globe temperature, relative humidity (RH), and wind speed. Second, D2 Kestrel Drops monitored the in-tent T_{air} and RH; two devices were hung 1 foot from the top-center inside each tent using cable ties. Both sensor types collected 5-minute data (see [35] for sensor

[c] Treatment first model focuses on problems associated with homelessness such as substance abuse, deteriorating health, and food [17].

[d] Housing first model prioritizes secure tenancy for the affected populations, recognizing that other associated problems will not be adequately dealt with when people are on the street [17].

[e] A kestrel sensor is a handheld weather station that can measure temperature, relative humidity, wind speed, and dew point among other weather parameters [42].

Fig. 1. Experimental setup of 6 identical tents, shown from left to right with different cover materials, as follows: control (no cover), mylar rescue blanket, white bedsheet, tarp, sunbrella fabric, and aluminum foil on cardboard. a: The Kestrel Heat Stress Meter (far left) on the tripod can be seen alongside the six tents. b: Side view of the six tents. c: Set up of Kestrel Drop sensors within the tents.

information).

Prior to field data collection, all Kestrels devices were calibrated in a controlled heat chamber (T_{air} of 35 °C and RH of 30 %) for 2 hours at 5-min sampling intervals. Sensor-specific offsets were calculated; the average value of the offsets was used to determine deviations of each sensor and applied to the experimental data collected at the field site.

2.2. Data preparation and analysis

The average 5-min values of T_{air} and RH of the two Kestrel Drops in each tent per time stamp for the three days were used in the analysis. The unique calibration offsets were applied to each sensor before analysis.

Data analysis first entailed the computation of descriptive statistics using rain cloud diagrams and boxplots at three levels: combined day and night, daytime only, and nighttime only informed by sunrise and sunset times. Daytime occurred from 5.30 a.m. to 7.45 p.m., whereas nighttime ranged between 7.50 p.m. and 5.25 a.m. The classification translated to 517 daytime observations and 348 nighttime observations across the three days. The means and medians of each experimental tent were compared to each other using the Kolmogorov-Smirnov test and the Mann U Whitney test, respectively, to determine whether there were significant differences between the compared groups. These tests are non-parametric and sensitive to differences in shape and spread of the distribution of samples, thus critical to ascertaining whether any two samples are from the same distribution, or are significantly different [36, 37]. Bonferroni adjustments were applied to the resultant p-values, reducing the risk of obtaining a false positive result.

We conducted a series of regression analyses to account for other variables that could be influencing the in-tent temperature differences while determining specific times of the day when exposure is most severe. Specific combinations and interactions of weather variables could provide a hint as to the most crucial variables that policymakers could target to reduce in-tent temperature. The following regression models with increasing model complexity were conducted while using the control tent as the base reference: (1) Regressing tent categories against tent sensor readings to ascertain differences between the tents without accounting for any control variable; (2) Adding ambient T_{air} as a control variable to model 1 to examine the effects of T_{air} on in-tent temperature differences; (3) Adding day/night binary classification to model 2 which could inform in-tent temperature variability during the daytime and nighttime, while illuminating when the greatest opportunity to mitigate occurs; (4) Breaking day and night classifications into finer periods of 4–5 hours, which could inform the specific time of the day when optimal exposure occurs when using the tents and tent covers. For model 4, the finer time chunks were as follows: Daytime 1 (D1), 5.45 a.m.–10.30 a.m.; D2, 10.35 a.m. to 3.00 p.m.; D3, 3.05 p.m.–7.45 p.m.; Nighttime 1 (N1), 7.50 p.m. to 12.30 a.m.; N2, 12.35 a.m. to 5.25 a.m. Nighttime 2 was used as the reference time classification for model 4.

3. Results

3.1. Overview

Ambient weather conditions on test days reached an average T_{air} of 38 °C (28.1–47.4 °C min–max average) (Table 1), with low daytime RH (23 %) and variable winds, which were calmer in the nighttime (0.68 ms^{-1}) versus daytime (0.94 ms^{-1}). Skies were clear with incoming maximum solar radiation reaching 974Wm^{-2} on the test days.

Results of average T_{air} values between tents and ambient conditions are presented in Table 1, with significance test results provided in Fig. 2, while Fig. 3 shows significance test results using the median value. The time of day is found to be an important factor in assessing the differences between the covered tents with either ambient T_{air} or the control tent. In general, the use of any tent resulted in higher daytime in-tent T_{air} than the ambient T_{air}, yet lower in-tent T_{air} at night. Further, shaded tents had equal or higher T_{air} at all times of day compared to the control tent with no additional shade.

3.2. In-tent air temperatures versus ambient air temperature

For D&N combined and daytime only, the mean in-tent T_{air} values across all tents were significantly higher than the ambient T_{air} (Table 1, Fig. 2), yet at nighttime, these differences were reversed and conditions were cooler in the tents versus ambient T_{air}. For example, overnight, the mean ambient T_{air} (34.6 °C) was significantly higher than the control tent (33.4 °C), white bedsheet (33.9 °C), sunbrella (34.1 °C) and tarp (33.6 °C) tent covers. At night, the tent shaded by aluminum foil had a significantly higher in-tent T_{air} (34.9 °C) than all other tents and the ambient T_{air} (see Fig. 2).

3.3. Shaded in-tent air temperatures versus control tent

Compared to the control tent, shaded tents were significantly warmer for combined D&N and nighttime, except for the tarp-covered tent overnight. Tents covered by Sunbrella fabric and tarp were respectively the warmest for combined D&N (T_{air} = 41.8 °C and 41.9 °C) and daytime (T_{air} = 47.1 °C and 47.5 °C).

The Kolmogorov-Smirnov tests (mean values) and the Mann U Whitney tests (median values) Comparisons of in-tent T_{air} against ambient T_{air} and the control tent were fairly consistent, yet had minor variations, displayed in Fig. 3.

3.4. Regression model results

The four regression models (Table 2) consistently returned the same results concerning the T_{air} differences between the tents, as detailed above. The only variation was found in the R-squared and Aiken Information Criterion values. The estimates of the tent coefficients were similar across the models, indicating uniform influences of explanatory variables across the tent covers. The in-tent T_{air} values with aluminum foil and mylar covers were not significantly different from the control tent in any of the models, whereas the remaining tents had significantly

Table 1
Descriptive statistics of the ambient temperature (°C) conditions for each tent, averaged across three days. Time classifications are presented in three chunks, including combined day (D) and night (N), daytime-only (D), and nighttime-only (N).

Recordings	Time classification	n	Range	Min	Mean	CI	Max	SD
Control	D&N	865	24.9	27.6	39.5	(±0.43)	52.5	6.46
	D	517	24.8	27.7	43.6	(±0.43)	52.5	4.97
	N	348	10.8	27.6	33.4	(±0.23)	38.4	2.22
Mylar	D&N	865	20.5	30.0	39.7	(±0.38)	50.5	5.76
	D	517	20.5	30.0	43.2	(±0.41)	50.5	4.71
	N	348	8.7	30.4	34.5	(±0.22)	39.1	2.06
White Bedsheet	D&N	865	25.7	29.2	40.6	(±0.47)	54.9	7.04
	D	517	25.7	29.2	45.1	(±0.47)	54.9	5.42
	N	348	9.05	29.4	33.9	(±0.22)	38.4	2.10
Tarp	D&N	865	30.5	29.2	41.9	(±0.59)	59.7	8.85
	D	517	30.5	29.2	47.5	(±0.61)	59.7	7.08
	N	348	8.9	29.3	33.6	(±0.22)	38.2	2.07
Sunbrella	D&N	865	27.4	29.5	41.8	(±0.55)	56.9	8.28
	D	517	27.4	29.5	47.1	(±0.57)	56.9	6.59
	N	348	9.1	29.6	34.1	(±0.22)	38.7	2.13
Aluminum Foil	D&N	865	18.3	30.0	39.5	(±0.35)	48.3	5.22
	D	517	18.3	30.0	42.7	(±0.37)	48.3	4.23
	N	348	8.9	30.7	34.9	(±0.23)	39.6	2.15
Heat Meter (Ambient air)	D&N	865	19.3	28.1	38.0	(±0.30)	47.4	4.57
	D	517	19.1	28.3	40.3	(±0.37)	47.4	4.30
	N	348	11.5	28.1	34.6	(±0.24)	39.6	2.31

n = number of observations, Min = Minimum air temperature, max = Maximum air temperature, SD= Standard Deviation, CI = Confidence Interval.

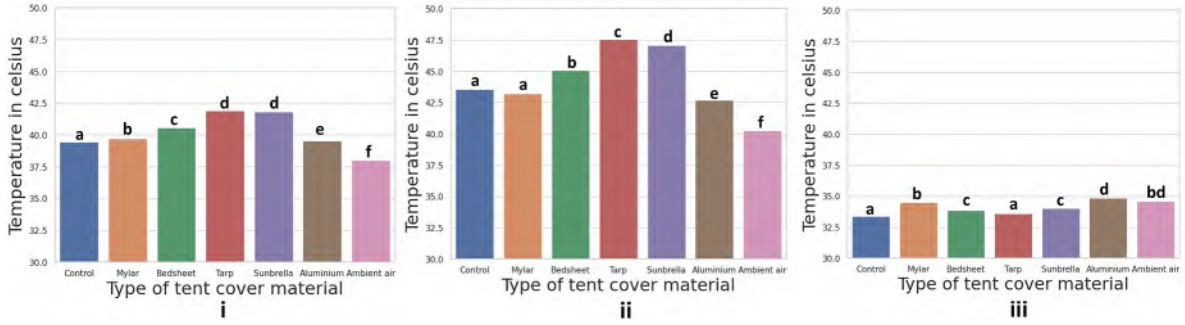

Fig. 2. Mean air temperature (°C) inside each tent and from the ambient sensor. i) Day & night combined, ii) daytime only, iii) nighttime only. Bars with the same letters (e.g., Tarp and Sunbrella in graph i) denote the means are statistically the same (or not statistically significantly different) for the given period using the Kolmogorov-Smirnov test using the mean values.

higher T_{air} than the control tent for all times of the day. Compared to the control tent, aluminum foil, mylar, sunbrella, tarp, and white bedsheet covers were associated with 0.08 °C, 0.23 °C, 2.36 °C, 2.46 °C, and 1.11 °C higher T_{air}, respectively, controlling for T_{air} and time classification as shown in model 3. Specifically, model 1 indicates that average in-tent temperatures are expected to be 39.5 °C, without adding any tent cover, corresponding to the control tent's mean value in Table 1 above. Model 2 indicates that in-tent thermal comfort is largely explained by air temperature because when we control for air temperature the expected average in-tent temperature for the control tent should be −11.9 °C.

Additionally, compared to nighttime in-tent T_{air}, daytime in-tent T_{air} was 5.01 °C higher controlling for tent cover material and ambient temperature as shown in model 3. Model 4 indicates that D2 and D3 time classifications are associated with 15.87 °C and 13.44 °C more in-tent warming compared to N2. The consistency of the results here and in the above tests—even with increasing model complexity and breaking down the time classification into finer periods—indicates that the significant differences between the tents outlined in sections 3.2 and 3.3 are strong. Given the consistency of the results across the models, model 3 parsimoniously explains the differences between the tents and the influences of ambient temperature conditions.

4. Discussion

Rising global temperatures, alongside an increasing number of people experiencing homelessness, present significant public health concerns, necessitating a thorough analysis and the development of targeted heat response strategies to safeguard human lives [38,39]. Tents are often used to help offer a place of refuge and privacy by providing a durable, lightweight, and weather-resistant personal space in place of emergency shelters. Although the provisioning of tents and tent shading is assumed to offer some form of protection against all weather extremes, results show that in the daytime, the T_{air} within a tent, whether covered or uncovered, is higher than the ambient T_{air}, yet lower at night. Thus, based on T_{air} only, tents may not protect the unsheltered homeless from extreme summer air temperatures, as all conditions would cause issues with heat stress; hence alternative sheltered accommodation, such as heat-ready housing, could be implemented as a public health measure. Further, multiple tests show that adding cover materials to shade tents during the summer may cause higher T_{air} exposures during the sweltering Phoenix summer, thus causing higher heat risk. Cooler nighttime in-tent T_{air} may be attributed to cooler in-tent surface temperatures due to shading and well as faster cooling rates after sunset of the tent/shading materials compared to concrete. Overall, shaded tents had equal or significantly higher T_{air} for combined day and night compared to the non-shaded control tent. Based on these results, there is

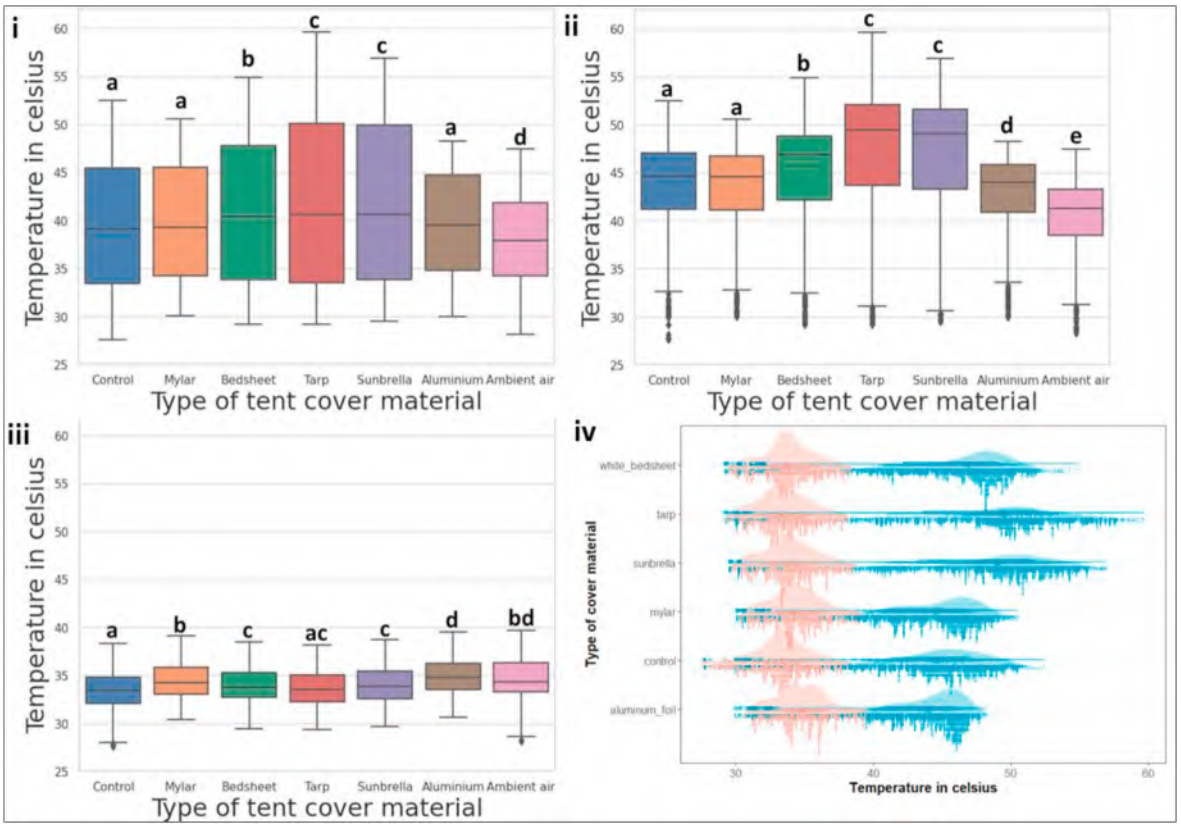

Fig. 3. (i–iii) Box and whisker plots for the combined day and night (i), daytime (ii), and nighttime (iii). Boxplots with the same letters within the graph do not have significant differences in T_{air} based on the median value using the Mann U Whitney test. (iv) Raincloud plot displaying the distribution and frequency of T_{air} values for all tents with cover and the control tent. The blue symbology represents daytime readings and the red symbology represents nighttime readings. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Table 2
Summary of regression models, indicating consistency across all four models. Model 1 is a regression of tent categories against temperature values. Model 2 added ambient temperature as a covariate to model 1. Model 3 added binary time classification (day/night) to model 2. Model 4 modified the binary time classification in model 3 into finer chunks of 4–5 h.

	Model 1		Model 2		Model 3		Model 4	
	estimate	p-value	estimate	p-value	estimate	p-value	estimate	p-value
Intercept	39.462	0.000	−11.858	0.000	−2.410	0.000	32.45	0.000
Aluminum foil	0.083	0.807	0.083	0.615	0.083	0.540	–	–
Mylar	0.234	0.490	0.234	0.154	0.234	0.083	–	–
Sunbrella	2.358	0.000	2.358	0.000	2.358	0.000	–	–
Tarp	2.464	0.000	2.464	0.000	2.464	0.000	–	–
Bedsheet	1.105	0.001	1.105	0.000	1.105	0.000	–	–
Ambient T_{air}	–	–	1.350	0.000	1.023	0.000	–	–
Classification	–	–	–	–	5.010	0.000	–	–
Ambient T_{air}:classification	–	–	–	–	–	–	–	–
Classification D1	–	–	–	–	–	–	8.37	0.000
Classification D2	–	–	–	–	–	–	15.87	0.000
Classification D3	–	–	–	–	–	–	13.44	0.000
Classification N1	–	–	–	–	–	–	3.25	0.000
AIC	35,015		0.770		25,463		29,041	
R [2]	0.021		0.770		0.845		0.69	
AdjR [2]	0.020		27,503		0.845		0.69	

AIC = Aiken Information criterion; R^2; AdjR [2] = Adjusted R-squared.

a need for local authorities and welfare associations to reconsider how and when tents are used, as well as perform further testing to assess the entire heat exposure situation more holistically (i.e., integrating solar radiation, wind speed, and humidity into the heat exposure assessment) [40].

The uncovered tent offered cooler thermal conditions based on air temperature exposures compared to those with shade for combined D&N and nighttime. Conditions particularly worsened when using the tarp (the most commonly used form of shade on the street, yet potentially the most hazardous), bedsheet, or sunbrella. Thus, results do not support using tents and tent covers as a mechanism to reduce daytime air temperature exposure. Although there is no other study, to our knowledge, that has examined tent cover impact on T_{air}, a study of stroller coverings was completed during warm weather in Australia [41]. These researchers found that in-stroller temperatures were substantially higher by draping a dry blanket or flannelette cloth, often used

for shade, over the stroller, thus worsening conditions for an infant. Including airflow and evaporative cooling was suggested to protect infants during hot weather. Thus, in a similar sense, although the tent covers provide shade to reduce sun exposure, the covers also result in lowered airflow, a build-up of water vapor, and an inability for long- or short-wave radiation to escape the tent. These findings may be crucial to consider for rescue missions and by local governments, public health officials, and general donors from the public to avoid adding cover materials during the summer that may worsen heat vulnerability for the unsheltered. Future research could evaluate the optimal strategies for heat protection during extreme heat which could involve a combination of well-ventilated daytime shade (tarps, trees) and, if possible, intermittent access to climate-regulated indoor areas or large, cooled, reflective tent shelters with adequate airflow. Allowing heat to escape tents through minimizing covers and opening tent windows and doors to avoid trapping heat and moisture will support cooling. However, future research must incorporate solar radiation and wind flow to assess the entire heat exposure situation (i.e., integrating solar radiation, wind speed, and humidity). Furthermore, experiments that allow the opening of tent doors and in-tent mixing of air are crucial for the overall evaluation of the efficacy of tent shading. Also, the housing-first response model guarantees protection against the extreme summer heat. Policies and guidelines related to heat vulnerability should be reviewed periodically, based on science, to ensure that heat mitigation efforts do not further marginalize the most vulnerable, such as those experiencing unsheltered homelessness.

A limitation of our study is that we used an identical series of tents; an opportunity lies in examining different tent designs across the shading materials to establish the relationships between the various configurations. Further, incorporating qualitative data detailing the attitudes and perceptions of people experiencing homelessness and public health practitioners about the use of tents and tent covers could enrich future studies.

5. Conclusion

Homelessness is both a driver and a consequence of poor health, and such populations have limited capacity to moderate their heat exposure translating to amplified heat mortality compared to the general population. This study evaluated the effectiveness of different tent cover materials used by homeless individuals for shade, personal space, and to safeguard themselves against extreme heat exposure in the summer. We established that any enclosed tent can increase daytime temperature exposures relative to the ambient air temperature and that additional tent covers for shading are associated with a higher daytime in-tent air temperature relative to a non-shaded control tent. These findings are crucial for implementing public health strategies concerning heat vulnerability, especially among people experiencing homelessness. Therefore, using tent covers as a mitigation measure may exacerbate the heat risk of the unsheltered homeless. Removing the shade covers from the tents at night would support heat removal from the tent via long-wave emission and airflow. This study supports the evaluation of heat mitigation and adaptation efforts to avoid unintended consequences of maladaptation and propagating further marginalization of the most at-risk groups. Rising global temperatures in tandem with a growing number of individuals experiencing homelessness are central public health challenges, and policy and research efforts should address these two public health concerns toward attaining health equity. Heat vulnerability policies and guidelines should be reviewed periodically to reflect research findings about the most effective passive personal heat reduction interventions. Future studies could incorporate solar radiation measurements and a mixed-method approach, where qualitative data about attitudes and perceptions about the use of tents and tent covers by people experiencing homelessness or local government officials could be captured. Testing multiple tent designs in the future could inform whether in-tent temperatures are dependent on tent design.

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Author statements

The development of the paper was a collaborative effort among the three authors, with contributions for all aspects of the paper being shared: Conceptualization, Jaime, Jennifer, and Joseph; Fieldwork, Jaime, Jennifer, and Joseph; Analysis, Joseph and Jennifer; Writing, Joseph, and Jennifer; Writing, Review and Editing, Jaime, Jennifer, and Joseph. All the authors have read and agreed to the submitted version of the manuscript.

Statement of ethical approval

Ethical approval was not required for this study, as the experimental set-up did not involve human or animal subjects.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.puhip.2023.100450.

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EXHIBIT “10”

CANADA

‘Frustrating and deadly’: How the extreme cold is hitting Canada’s homeless

By **Naomi Barghiel** • **Global News**
Posted January 18, 2024 1:39 pm
6 min read

Many Canadians are bundling up for warmth during this week’s cold snap. But with unsafe conditions in shelters and encampments, many experiencing homelessness have nowhere to go but outside. Advocates say urgent action is needed, but is enough being done to get there? Naomi Barghiel reports – Jan 18, 2024

Every day outreach worker Greg Cook tries to connect dozens of **homeless** Torontonians with one of the city’s busy shelters, mostly, he says, without success.

Those efforts become even more difficult during weeks of freezing cold temperatures, when demand is highest but access to resources remains low.

Sometimes, Cook says the people he is trying to help die before they find a safe place to stay.

“It is definitely hard at times. Frankly, one of the things I find hardest, having done this for quite a while, is to see kind of big picture how much things are getting worse every year. It just feels bleak,” said Cook, who works for Sanctuary Toronto and on the steering committee for the Shelter and Housing Justice Network.

Toronto has one of the largest shelter systems in the country, and yet shelters turned away almost 200 people every night due to a lack of capacity in December, according to data from the city’s Shelter System Requests for Referral page.

Even though demand for a shelter spot is through the roof, Cook says many will still choose to stay out in the cold to avoid overcrowding and violence that has become the norm in many shelters.

With most warming centres closed after a certain hour of the day as well, many end up seeking warmth wherever they can, such as in buses, subways and cafes.

Some in encampments, outside of Toronto as well, are using space heaters and propane tanks to stay alive despite safety risks. One man was found dead in a tent at a homeless encampment in Edmonton earlier this month following a propane tank explosion. Soon after, the city declared a housing and homelessness emergency.

Toronto advocates and officials also sounded the alarm by declaring a homeless emergency last winter, but Cook says even that didn’t spark much action.

“It’s frustrating and frankly deadly for people who are outside,” said Cook.

Cold snap heats up concerns about homelessness in Peterborough

This year, Toronto added a number of action items to its Winter Services Plan that includes 180 new spaces in the shelter system. But it still expects demand to rise throughout the winter season due to insufficient affordable housing, the increasing cost of living and low wages.

Cook says these factors are all too real, and have had grave consequences for the homeless population.

"I've been an outreach worker for almost 15 years (and) I see the waitlist for social housing just increase exponentially every year. Now, in a place like Toronto, the wait is 10 years, and many people I know die in that interim," he said. "So when somebody says 'I need housing, I'm on disability pension, I'm only able to get a minimum wage job,'... for many people, it's a death sentence."

2:13
High demand for extreme weather shelters in B.C.

Extreme cold warnings have been issued in many parts of the country this past week. Most provinces issue a warning when the temperature or wind chill is expected to reach -30 degrees Celsius for at least two hours.

The territories are not exempt from the country’s homelessness crisis either, and have already issued extreme cold weather alerts this winter for temperatures reaching -50 degrees.

Research led by St. Michael’s Hospital in 2019 found that while extreme cold temperatures increase risk of hypothermia, most cases of severe injury

death related to the cold occur in moderate winter weather, which is much more common.

Homelessness solutions start with 'dignity': housing watchdog

Toronto is only one example of a problem that spans the nation.

According to data from Statistics Canada in 2021, over one in 10 Canadians said they have experienced some form of homelessness in their life. Between 25,000 and 35,000 are homeless on any given night in Canada.

The onset of the COVID-19 pandemic exacerbated a problem already slipping from the country’s grasp, leading to higher unemployment, inadequate wages, deteriorating housing affordability and ultimately more homelessness.

The federal government launched a National Housing Strategy in 2017, which is a 10-year, $72-billion plan promising to end homelessness in Canada by 2030.

However, multiple advocates and leaders have criticized it for its lack of concrete actions.

Danielle Smith becomes first Alberta premier in 90 years to face citizen recall

Mississauga considering changes to Ridgeway Plaza amid complaints over noise, crowding

One of those critics is Ottawa’s first federal housing advocate, Marie-Josée Houle.

She says certain weather conditions like this week’s extreme cold across the country expose systemic problems that exist year-round.

“The fact that we have encampments in Canada means it’s just a physical manifestation of exactly how broken our housing and homelessness system is,” said Houle. “It not only is a violation of people’s human right to housing, but a lot of other human rights, including security and dignity of the person.”

Houle says she understands adequate housing isn’t built overnight, but until homes become available, governments have the obligation to work directly with people in encampments to meet their needs and ensure their safety.

Raiding encampments and forceful encampment evictions achieve the opposite outcome of what Houle is advocating for. She says police’s “militaristic approach” and “declaration of war” on people in encampments “is not working.”

1:54
Why do so many homeless resist going to shelters in Edmonton?

Last week, Edmonton clean-up crews and officers dismantled seven out of eight of its homeless encampments deemed high risk by the city and police. Personnel at the eighth encampment were met with resistance from residents and advocates, which led to multiple charges and arrests for assault.

Police said they are aware that dismantling has often led to displacement, but they are working on ways to “incentivize people to look elsewhere.”

Except, many still end up out in the cold. The conditions in shelters across the country aren’t much better. Houle says each municipality has different i

but the lack of safety in shelters is a key, universal factor.

Reports from The Canadian Press in 2019 found that the number of violent incidents in Toronto shelters alone had more than tripled during the pandemic, partially driving an increase of outdoor encampments.

"There are reasons why people are choosing to sleep out in the cold, to be subject to police brutality, to harassment by the public, by bylaw officers. The risk of sexual violence, being robbed, and of physical violence also happens in shelters," Houle said.

"The solution to encampments isn't shelters, it's homes."

While municipalities have largely been saddled with the complex issue of encampments, Houle says it's time that the federal government takes leadership.

"(Municipal councils) are not equipped to deal with encampments appropriately and they need support. You need leadership on this… which has to come from the federal government because it's a national issue," she said.

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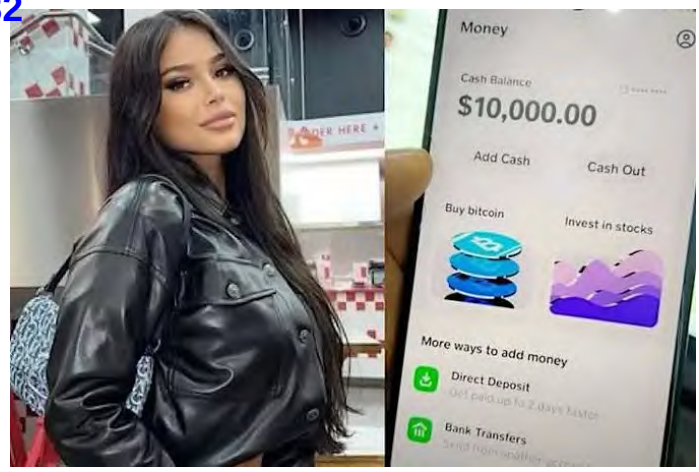

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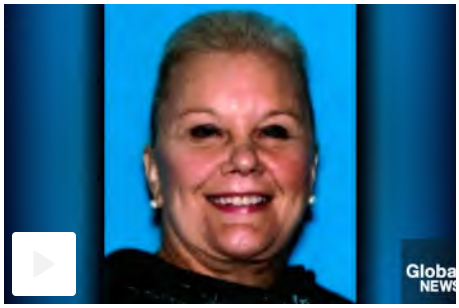

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EXHIBIT “11”

Homeless People Face Hypothermia Every Winter. Here's How You Can Help

BY ABBY LEE HOOD | NOVEMBER 18, 2020 | COLD WEATHER | AWARENESS | CORONAVIRUS

One of the most concerning realities for homeless individuals living outdoors or who have unstable living conditions is hypothermia. Hypothermia can set in even at moderately warm temperatures in certain conditions. But living outdoors means homeless individuals often face far worse than moderate cold.

Jeremy Nicholls, program manager for the single men's and family shelters at Cornerstone Community Outreach, said hypothermia is a major threat for community members in unstable living situations. CCO is based in Chicago, which in 2017 reached record-breaking cold stretches below 20 degrees Farenheit for days. At least two days wind chills were between -25 degrees and -40 degrees Fahrenheit.

Nicholls shared several experiences working with homeless individuals affected by frostbite and hypothermia with *Invisible People*. One man Nicholls has known for years through CCO recently asked him for a dollar when they met on the street. As Nicholls gave it to him, he noticed the man no longer had fingers on his right hand. When he asked the man what happened, he replied simply, "frostbite."

Nicholls also spoke of a CCO community member who had puffy fingers as long as Nicholls knew him. Nicholls said the shelter once called an ambulance for the man after worrying he was succumbing to hypothermia. Since then, he has been in a nursing home and his fingers have returned to normal size.

"He's housed and looking great," Nicholls said.

In the summer, CCO acts as a cooling center for unhoused people. For the long, Midwestern winters, the facility adapts to become a warming center.

Shelter workers continue outreach, picking people up and transporting them to shelter, giving out supplies and coats, and even train cards so more people have access to transportation.

Nicholls said COVID will greatly impact the shelter's ability to help people this winter. Social distancing is difficult in tight spaces, like a cafeteria, and many seeking shelter at CCO are older and immunocompromised.

"With COVID and the need for social distancing, I don't know how we're going to be able to tackle this," Nicholls said. "We'll have the supplies to help and prevent, but space will be/is an issue."

However, Nicholls said community members can intervene in hypothermia cases and support shelters and homeless individuals. Winter donations of socks, hand-warmers, feet warmers, gloves, coats, boots, either to shelters or directly to homeless individuals, can help, as can buying people coffee and a warm meal. Nicholls also said if you see someone showing signs of hypothermia, like shaking uncontrollably, and have no way to warm them up, the best solution is to call 911 immediately.

Signs of hypothermia include:

- Shivering
- Exhaustion
- Confusion
- Fumbling hands
- Memory loss
- Slurred speech
- Drowsiness
- In babies, low energy and bright red skin can also be symptoms.

The most vulnerable populations include homeless people, elderly people and babies.

How to Help in Cases of Suspected Hypothermia

To help a person with hypothermia, the first step is getting the person to a warmer room or location. Remove any wet items of clothing they may be wearing. Warming should focus on the center of the person's body, which could include extra jackets or heated blankets. Warm drinks can also help (alcohol-free) and drinks should never be given to an unconscious person. If a person isn't conscious or doesn't seem to respond to warming, call emergency responders immediately.

In severe cases like those Nicholls described, frostbite can set in. Frostbite usually results in loss of feeling and color in the extremities, like fingers and toes. If left long enough, individuals can lose fingers, toes, or even limbs. Numbness and waxy skin are signs of frostbite and require immediate medical attention.

Hypothermia and frostbite are serious, and they're also widespread.

According to the National Center for Biomedical Information (NCBI), 25% of all hypothermic injuries and 20% of hypothermic deaths were attributed to individuals experiencing homelessness. The NCBI also states that a New York study reported a similar proportion of deaths and hospital admissions among individuals who were homeless. Mirroring Nicholl's experience with vulnerable homeless adults, the National Health Care for the Homeless Council reports that the average death of a homeless person is around 50 years old.

As winter gets closer, hypothermia will only add to the long list of problems unhoused individuals face. *Invisible People* previously covered the ways COVID anxiety and seasonal depression negatively impacts people with unstable living conditions. Left untreated, hypothermia and frostbite have serious consequences, and can even cost a homeless individual their life.

While advocates and workers like Nicholls offer help as they can, it's possible you may also encounter a homeless individual suffering from the cold. In that case, intervention is paramount. It's important for all communities to be ready to spring into action. It could save a life.

Abby Lee Hood

Abby Lee Hood is a queer, Nashville-based writer who lives with their three-legged cat and hedgehog. They write about justice and niche cultures. From time to time, they enjoy playing the fiddle or roller skating and is working on their debut novel.

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EXHIBIT “12”

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Trench Foot

Jeffrey S. Bush; Trevor Lofgran; Simon Watson.

Author Information and Affiliations

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Continuing Education Activity

Trench foot is one of three subclasses of immersion foot, which are differentiated by the temperature of the exposure. Trench foot is caused by prolonged exposure to a cold temperature that is usually above freezing and damp, sometimes unsanitary conditions. The condition ultimately causes skin and tissue breakdown which increases the risk of infection and increases associated morbidity and mortality. This activity reviews the evaluation and management of trench foot and highlights the role of interprofessional team members in collaborating to provide well-coordinated care and enhance outcomes for affected patients.

Objectives:

- Describe the signs and symptoms of trench foot.
- Identify the population at risk for developing trench foot.
- Explain the management and treatment of trench foot.
- Outline the importance of improving coordination among the interprofessional team to enhance care for patients affected by trench foot.

Access free multiple choice questions on this topic.

Introduction

Trench foot is one of three subclasses of immersion foot and is considered a non-freezing cold injury (NFCI). It is often differentiated by the temperature of the exposure and is caused by prolonged exposure to cold but usually not freezing, damp, and sometimes unsanitary conditions. The condition will ultimately cause skin and tissue breakdown which increases the risk of infection and raises the morbidity and mortality.[1][2][3]

Etiology

Many soldiers during World War I had trench foot. Starting in 1914, trench warfare was a common strategy on the European front. During this time, the soldiers found themselves standing in waterlogged trenches at the front for long periods of time and were subjected to wet, cold, and muddy conditions. In the winter between 1914 and 1915, it is reported that over 20,000 British troops were treated for trench foot. Furthermore, it is estimated that trench foot contributed to the deaths of 2000 American and roughly 75,000 British soldiers. Interestingly, trench foot was first described in 1812 while Napoleon's army was retreating from Russia. Dr. Dominique Jean Larrey, a French army surgeon, was the first clinician to describe the condition. Although the prevention of trench foot is relatively straightforward and widely known, as recently as 1982, the British Army dealt with the condition during the Falklands War.[4][5][6]

Epidemiology

Military personnel continue to be most commonly affected population [7]. Recently, clusters of cases have been described in the civilian population during large, multi-day, music festivals where the conditions are conducive to causing the disease. In everyday clinical practice, the homeless population is also susceptible to trench foot due to lack of shelter and prolonged exposure to moist and cold environments.

Pathophysiology

Unlike frostbite, trench foot can occur without freezing temperatures. The feet can be affected in temperatures up to 16 C (60 F), and the disease can develop in as little as 10 to 14 hours.[8] With the addition of moisture to the above environmental conditions, destruction and deterioration of the capillaries can lead to degradation of the surrounding tissue. The pathophysiology is thought to be due to varying vasoconstriction and vasodilation resulting in local tissue damage.[9] Hyperhidrosis (excessive sweating) can also be a contributing factor to the development of trench foot.

History and Physical

Trench foot often begins with a tingling, itching that can progress to numbness. In the setting of cold exposure, vascular changes resulting in poor blood flow can result in the feet becoming erythematous or cyanotic. In later stages as the extremity is rewarmed hyperesthesia is often noted.[10] With prolonged exposure and poor care they may have an odor of decay if necrosis has started to set in. Significant swelling can occur, and there are some descriptions that the feet can double in size due to the edema. The disease has been known to commonly affect the heels or toes, but can extend above the foot. The skin can appear blotchy, and as the disease progresses, blisters and open sores can occur which can lead to fungal as well as bacterial infections. As the disease continues to advance, skin and tissue may slough off. If the condition is left untreated, gangrene can set in. At this point, amputation may be needed to avoid further progression of the disease and other complications such as sepsis and death. When trench foot is identified and treated early, complete recovery is expected; although, there can be a significant amount of temporary pain when sensation returns to the affected area.

Evaluation

The diagnosis of trench foot is entirely clinical. One must first identify the situations where it occurs, and a good physical examination is paramount. Underlying infections must be ruled out so a white blood cell count might be indicated. Inflammatory markers such as a C-reactive protein (CRP) or erythrocyte sedimentation rate might prove helpful, as will a radiograph or bone scan if underlying osteomyelitis is suspected.

Treatment / Management

By keeping the feet warm, dry, and clean, trench foot can be avoided. During World War I, the institution of regular foot inspections was found to decrease the incidence of the disease. The soldiers were paired up and were instructed to watch the feet of their partner. It was found that a soldier was more likely to remove his boots and dry his socks and feet if he was reminded to do so by his fellow soldier. After thousands of cases were seen, soldiers were ordered to have 3 pairs of socks with them at all times and were told to change rotate the pairs at least twice a day. Whale oil was also provided to the soldiers to rub on their feet after they were dry to help

prevent trench foot. Historically, a battalion (up to 1000 men) at the front in World War I, could use up to 10 gallons of whale oil on any given day. To help prevent trench foot, wooden boards, known as duckboards, were used to cover the wet, muddy, cold ground in the trenches. Troop rotation was also used to limit an individual soldier's exposure. As World War I progressed, the incidence of the disease declined due to the measures mentioned above.[11][5][12]

The best treatment for trench foot is prevention. Some of these methods are outlined above. It was critical that soldiers changed their socks frequently and made sure their feet were dry to avoid the condition. During World War I, as the understanding of the disease progressed, the treatment of trench foot also evolved. Early on, bedrest was recommended, and the application of numerous different agents was tried at one time or another. Among these included a mixture of lead and opium, alcohol of different types, mercuric chloride in alcohol, tincture of iodine, oil of wintergreen, picric acid, and chloral hydrate mixed with camphor. Some powders were also used including boric acid, starch, zinc, and salicylic acid. Radiant heat, complex methods of massage, and even different types of electrical stimulation were tried in treating trench foot when the initial treatments failed. However, once the disease progressed to a severe case, the mainstay of treatment was surgical, similar to the treatment of gangrene. Many times, the patient ended up with an amputation.[13]

Current treatment recommendations are with slow passive rewarming of the affected extremity with adequate pain control with amitryptiline or other modalities for neuropathic pain.[10][8] It is important to assess for signs of hypothermia and to remove the affected extremity from any inciting environmental causes.

Differential Diagnosis

A good history and physical should allow a clinician to differentiate trench foot from frostbite, cellulitis, and other localized processes.

Prognosis

Today, trench foot is usually identified early, and the treatment is very straightforward. Keeping the feet dry and warm is imperative. Rest and elevation of the affected foot are encouraged since this will help prevent new wounds and blisters. NSAIDS will help with any discomfort the patient is having and will also help to alleviate the swelling. If the patient cannot take NSAIDS, then acetaminophen or aspirin will help with the pain but may not help with the swelling. According to the Center for Disease Control and Prevention (CDC), the prevention and treatment of trench foot are straightforward, and their recommendations are as follows:

- Take off socks
- Avoid wearing dirty socks to bed
- Wash the affected area right away
- Dry feet completely
- Apply heat packs to the area for up to 5 minutes

If the above measures do not help the condition, then the CDC recommends further evaluation by a clinician.

Complications

Complications and uncommon and typically the result of inappropriate care. Soft tissue skin infections such as cellulitis or gangrene are possible in later stages of presentation and should be managed with appropriate antibiotics or antifungal treatments. Subacute or chronic neuropathic pain is more common and can be managed with various modalities to treat neuropathic pain.[8] In rare circumstances and if not managed/treated appropriately permanent sensory changes may be seen and or amputation may be required.

Deterrence and Patient Education

Patients should be educated in the identification of non-freezing cold injuries and associated risk factors. Recommendations should include smoking cessation, proper hydration and proper foot care as outlined above. Patients should also be instructed to avoid alcohol, vasoconstrictive medications and caffeine. [14]

Enhancing Healthcare Team Outcomes

Trench foot is usually managed by an interprofessional team that consists of an emergency department physician, nurse practitioner, vascular surgeon, internist, orthopedic surgeon and an internist. Once the diagnosis is clinically made, the treatment is urgent. The foot must be kept warm and dry. Many oils have been recommended to protect the skin and underlying tissues but no evidence supports the use of one treatment oil over another. If the foot is warm, talcum powder can be used. Radiant heat can be used to keep the foot warm. Since the skin is fragile, manipulation and massage should be avoided. The foot should be regularly assessed for infection and gangrene. Recovery occurs in most mild cases, but it is prolonged. In severe cases of trench foot, amputation may be the only option. [15](Level V)

Review Questions

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Figure

Trench Foot Contributed by Mehmet Karatay (CC by 3.0 https://creativecommons.org/licenses/by-sa/3.0/deed.fr)

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EXHIBIT “13”

Chronic Physical Health Conditions Among Homeless

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Chronic Physical Health Conditions Among Homeless

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Chronic Physical Health Conditions Among Homeless

Abstract

ABSTRACT

Objective: Morbidity and mortality among homeless individuals is higher than the general population. This study aims to determine the prevalence of current self-reported, chronic physical health conditions in a large sample of homeless people with sub-samples from shelters and street in British Columbia, Canada. **Methods**: Cross-sectional survey applying modified version of the 'National Survey of Homeless Assistance Providers and Clients (NSHAPC)' questionnaire in multiple sites in Vancouver, Victoria and Prince George, British Columbia, Canada. Sample: Five hundred homeless individuals were surveyed between May and September of 2009. A person was defined as homeless if he/she had a self-identified living status of being without permanent housing prior to study entry for a minimum duration of one month. The main outcome measures were prevalence rates of self-reported chronic physical health conditions. A chronic physical health condition was defined as a condition, expected to last or had already lasted 6 months or more, which had been diagnosed by a health professional. **Results**: The most commonly self-reported, chronic, physical health condition in this group of homeless participants was history of head injury with subsequent loss of consciousness, dizziness, confusion, or disorientation (63.6%) followed by back problems (38.8%), chronic hepatitis (34.6%), migraine headaches (29.2%), and arthritis (28.4%). Chronic obstructive lung disease was reported by 15.8% of the participants, and high blood pressure by 15.6%. 7.6% indicated they were HIV-positive and/or had AIDS. **Conclusion**: Homeless people have a high prevalence of chronic physical health condition, in the following areas: neurological, musculoskeletal, infectious and respiratory diseases. Precarious living conditions and housing, poor nutrition, psychosocial stress, smoking, and substance use are among common detrimental risk factors for many of these conditions.

Keywords: chronic disease, homeless, HIV, Hepatitis C, back pain, physical health

Keywords

chronic disease; homeless; HIV; Hepatitis C; back pain; physical health

Cover Page Footnote

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Chronic Physical Health Conditions among Homeless

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ABSTRACT

Objective: Morbidity and mortality among homeless individuals is higher than the general population. This study aims to determine the prevalence of current self-reported, chronic physical health conditions in a large sample of homeless people with sub-samples from shelters and street in British Columbia, Canada.

Methods: Cross-sectional survey applying modified version of the 'National Survey of Homeless Assistance Providers and Clients (NSHAPC)' questionnaire in multiple sites in Vancouver, Victoria and Prince George, British Columbia, Canada. Sample: Five hundred homeless individuals were surveyed between May and September of 2009. A person was defined as homeless if he/she had a self-identified living status of being without permanent housing prior to study entry for a minimum duration of one month. The main outcome measures were prevalence rates of self-reported chronic physical health conditions. A chronic physical health condition was defined as a condition, expected to last or had already lasted 6 months or more, which had been diagnosed by a health professional.

Results: The most commonly self-reported, chronic, physical health condition in this group of homeless participants was history of head injury with subsequent loss of consciousness, dizziness, confusion, or disorientation (63.6%) followed by back problems (38.8%), chronic hepatitis (34.6%), migraine headaches (29.2%), and arthritis (28.4%). Chronic obstructive lung disease was reported by 15.8% of the participants, and high blood pressure by 15.6%. 7.6% indicated they were HIV-positive and/or had AIDS.

Conclusion: Homeless people have a high prevalence of chronic physical health condition, in the following areas: neurological, musculoskeletal, infectious and respiratory diseases. Precarious living conditions and housing, poor nutrition, psychosocial stress, smoking, and substance use are among common detrimental risk factors for many of these conditions.

Keywords: chronic disease, homeless, HIV, Hepatitis C, back pain, physical health

INTRODUCTION

Homelessness is an escalating global challenge especially in metropolitan areas. Absolute homelessness is defined as a living situation without physical accommodation and individuals described as being absolutely homeless often sleep outdoors, in emergency shelters or at other places not meant for human habitation (Stephen W. Hwang, 2001). Within developed countries, homelessness rates at a given time are now approximated to be near 1% of urban populations (Turnbull, Muckle, & Masters, 2007). Many efforts have been dedicated to calculating the magnitude of homelessness in Canada. One of the most recognized figures emerged from the 2001 Canadian Census, in which the size of the homeless population was reported at over 14,000, which likely is an underestimation of the actual number of homeless individuals (Patterson, Somers, McIntosh, Shiell, & Frankish, 2008).

The number of homeless people in Canada has grown in the last decade, as a result of many factors that involve Canada's urbanization practices (Frankish, Hwang, & Quantz, 2005). Recent data from a March, 2013 Ipsos Reid poll –A poll conducted by Canadian arm of the global Ipsos Group-suggests that as many as 1.3 million Canadians have experienced homelessness or precarious housing at some point during the past five years (Gaetz, Donaldson, Richter, & Gulliver, 2013). In 2007, the BC Ministry of Health assessed the number of inadequately housed people between 17,500 and 35,500 in British Columbia (Patterson, et al., 2008).

A clear association between homelessness and poor physical health has been recognized (Turnbull, et al., 2007). Homeless persons are at higher risk for morbidity and mortality, in comparison with the general population (Stephen W Hwang, Wilkins, Tjepkema, O'Campo, & Dunn, 2009; O'Connell, 2005) with higher prevalence rates of chronic physical health conditions including infections, such as tuberculosis, HIV/AIDS, hepatitis, respiratory infections, and skin infections (Grangeiro et al., 2012; Khandor et al., 2011; Plevneshi et al., 2009; Ryan, 2008; Tan de Bibiana et al., 2011; Tyler et al., 2013; Vahdani, Hosseini-Moghaddam, Family, & Moheb-Dezfouli, 2009; Wiersma et al., 2010). Noninfectious diseases such as chronic obstructive lung/pulmonary disease, unintentional injuries, cardiovascular diseases, musculoskeletal disorders, seizure disorders and cancer also greatly affect this population's physical health status (Brown, Kiely, Bharel, & Mitchell, 2013; Crowe & Hardill, 1993; Kaldmae et al., 2011; Page, Thurston, & Mahoney, 2012; Snyder & Eisner, 2004; Topolovec-Vranic et al., 2012). Consequently, adverse health conditions can contribute to the commencement of homelessness, while poor living standards exacerbate the poor health status (Frankish, et al., 2005). Poor health in homeless individuals can be aggravated further by the many barriers to accessing primary health care services, such as lack of transportation to health care facilities, access to regular family doctors and the exposure to stigmatized attitude of some health care professionals (Khandor, et al., 2011).

The BC Health of the Homeless survey (BCHOHS) was conducted to provide a detailed and accurate description of self-reported, physical health conditions among a large sample of 500 homeless people in British Columbia as planning framework for this high need population.

METHODS

Study design and population

Detailed description of sampling procedure has been presented elsewhere (Torchalla et al., 2011). In brief, this study is a cross-sectional survey sampling homeless adults 19 years of age and older recruited between May and September of 2009, from multiple sites in three cities in British Columbia, Canada: Vancouver, Victoria, and Prince George. For this study, homelessness was self-identified as living, at least within the last month, in a shelter or on the street, outdoors and in abandoned and public buildings, subways, and vehicles. Individuals living in precarious housing (e.g. single hotel rooms, substandard homes) and institutions (e.g. jails/prisons, residential treatment facilities, domestic violence centers) were excluded from the study.

Fifty percent of participants were recruited from emergency shelters and 50% were recruited from living homeless on the streets. Purposive sampling recruited a significant proportion of women, Aboriginal people, and young people, subpopulations of homeless individuals that are often underrepresented in surveys.

Two hundred females and 299 males were recruited in 2009. People who did not fulfill the inclusion criteria of homelessness, who were unable to communicate in English, and/or who were unable or unwilling to give informed consent were excluded.

Each participant received $30 for participating in research. The Behavioral Research Ethics Board of the University of British Columbia and the Providence Health Care Research Institute approved this study.

Eligible individuals interested in participation were then provided with the goals and rationale of the study and requirements for participation. Those who were able and willing to give written informed consent attended a one-session, face-to-face, structured, clinical interview. Research team members trained in survey conduction administered the survey to each participant. This usually took place in a research office, immediately after recruitment at shelters and streets. Some participants were interviewed at the shelters and drop-in centers where they felt more comfortable.

Survey Instruments

A modified version of the 'National Survey of Homeless Assistance Providers and Clients (NSHAPC) – Health Chapter' a health status instrument that has been validated for use in homeless populations' studies, to assess recent (i.e. last 6 months) and chronic physical health conditions, health care utilization behavior, and barriers to accessing healthcare, was used. Information was assessed with single item and two response options (i.e., yes/no) (Burt, 1999).

Demographic information, including age, sex, marital status, housing situation, education, and self-identified ethnic background was obtained. The presence of self-reported, chronic, physical health conditions was determined by defining the conditions as "long term conditions", which were expected to last or had already lasted 6 or more months and that had been diagnosed by a healthcare professional. Prevalence of a current chronic physical health conditions was determined using the question, *"Do you have any of the following medical condition [diagnosed by a health professional]"* At each body system section, participants were

asked about having specific long-term physical health condition, as well as an open question to specify any other health condition in that category.

Statistical Analysis

All data were entered in Statistical software SPSS version 21.0 for Mac (SPSS Inc., Chicago, IL). Numerical variables were presented as mean (SD), while nominal and categorical variables were summarized by absolute frequencies and percentages.

The prevalence of categories of chronic health conditions was compared in different genders, age group, education level, and housing status using Fisher's exact test. P-value •0.05 was considered significant.

Also, prevalence was compared in different ethnicities using Chi-square test. However, since the nonwhite and nonaboriginal ethnicity subcategory had a very small size, Fisher's exact test was applied to compare each one of ethnicity groups with the other two groups for their reported chronic health conditions. Those chronic conditions with P-Value •0.05 in this stage would be reported as significant prevalent condition for that ethnicity.

RESULTS

Socio-demographic context of the study (Table-1)

Forty percent (n=200) of the participants who completed the study were female. The average age of participants was 37.9 years (SD=11.0) with 15% of the participants being 24 years old or younger.

Table 1- Socio-demographic characteristics of participants in BC Homeless Survey, from May to September 2009

Variable	Number (%) Total Sample N=500
Youth (Age • 24) [a]	75 (15.0)
Gender	
Female	200 (40)
Male	299 (59.8)
Missing	1 (0.2)
Ethnicity	
White	280 (56.0)
Aboriginal	199 (39.8)
Other [b]	21 (4.2)
Current housing	
Street	250 (50.0)
Shelter	250 (50.0)
Education	
Less than high	318 (63.6)
School education	
Married/partnered	49 (9.8)
Common law	

[a] Mean Age of the surveyed population + Standard deviation is 37.9 ±*11.0*

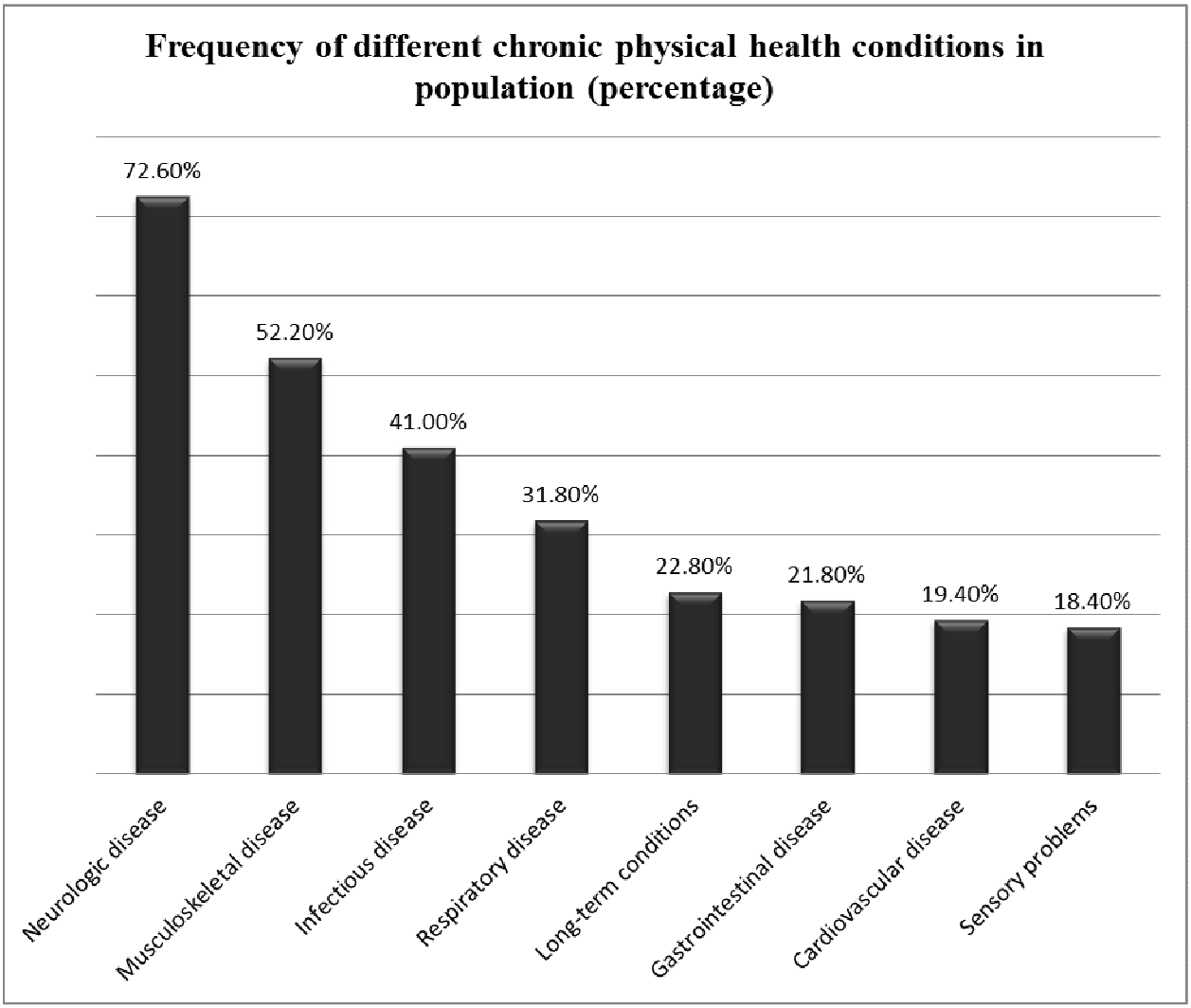
[b] includes Black/African (2.2%); Asian (1.2%); Hispanic/Latin American (0.8%); ethnic background was selected as self identified from a list of categories including: European/Caucasian, Aboriginal, African, Asian, Hispanic/Latin American, and Other. The ethnic background classified as "Other", included Black/African, Asian, and Hispanic/Latin American. The participants who self-identified themselves as Aboriginal in this study, represented peoples throughout British Columbia and included: Cree, Carrier, Dene, Gitksan, Sekani, Ojibway, Coast Salish and

Metis.

Prevalence of chronic physical health conditions

Neurological (72.6%, n=363), infectious (47.2%, n=236) and musculoskeletal (41.0%, n=205) conditions were the most common chronic health conditions respectively (Figure 1), affecting homeless people surveyed in BC, in 2009. Prior head trauma/injuries with subsequent loss of consciousness dizziness, confusion, or disorientation were the most common physical conditions affecting 318 individuals (63.6%) followed in frequency by back problems (excluding fibromyalgia and arthritis) in 194 (38.8%) individuals and Hepatitis B/C in 173 individuals (34.6%).

Figure -1-Frequency of self-reported physical health conditions by 500 homeless individuals in BC Homeless Survey, from May to September 2009.



There was a high prevalence of migraine headache (29.2%, n=146) and arthritis (excluding fibromyalgia) (28.4%, n=142) in this population (Table 2).

Table-2- Frequencies and percentages of chronic physical health conditions

Chronic physical health conditions	n (%)
Cardiovascular	**97 (19.4%)***
High blood pressure	78 (15.6 %)
Heart disease	16 (3.2%)
Other	22 (4.4%)
Specified as Heart murmur	8 (1.6%)
Not specified	14 (2.8%)
Respiratory	**159 (31.8%)**
Asthma	114 (22.8%)
Emphysema	19 (3.8%)
Chronic bronchitis	61 (12.2%)
Chronic obstructive pulmonary disease (COPD)	11 (2.2%)
Other and not specified	7 (1.4%)
Gastrointestinal	**109 (21.8%)**
Cirrhosis (Damaged liver from alcohol or drugs)	30 (6%)
Chronic diarrhea	18 (3.6%)
Intestinal or stomach ulcers	53 (10.6%)
Urinary incontinence	23 (4.6%)
Bowel disorders (Crohn's disease, ulcerative colitis, Irritable bowel syndrome or bowel incontinence)	22 (4.4%)
Other and not specified	11 (2.2%)
Musculoskeletal	**261(52.2%)**
Arthritis	142 (28.4%)
Back problems, (excluding fibromyalgia and arthritis)	194 (38.8%)
Problems in walking, lost limb, physical Handicap(s)	119 (23.8%)
Other	35 (7.0%)
Specified as "history of fracture"	10 (2.0%)
Specified as Fibromyalgia	3 (0.6%)
Not specified	22 (4.4%)
Infectious	**205 (41.0%)**
HIV infection or AIDS	38 (7.6%)
Tuberculosis exposure or positive TB test	32 (6.4%)
Hepatitis B or C	173 (34.6%)
Other	11 (2.2%)
Not specified	6 (1.2%)
Neurologic	**363 (72.6%)**
Epilepsy	17 (3.4%)
Fetal alcohol syndrome or fetal alcohol spectrum disorder	32 (6.4%)
Migraine headaches	146 (29.2%)
History of head injury with resultant Knock out or at least dizziness, confusion, or disorientation	318 (63.6%)
Consequences of a stroke	13 (2.6%)

Other and not specified	21 (4.2%)
Sensory	**92 (18.4%)**
Glaucoma	5 (1.0%)
Cataracts	16 (3.2%)
Hearing problems	67 (13.4%)
Long-term conditions	**114 (22.8%)**
Cancer	27 (5.4%)
Diabetes	17 (3.4%)
Anemia (poor blood, low iron)	52 (10.4%)
Skin disease (for- example, eczema or psoriasis)	44 (8.8%)
Other	18 (3.6%)
Specified as Thyroid problems	4 (0.8%)
Specified as Hypoglycemia	3 (0.6%)
Specified as Allergy	3 (0.6%)
Not specified	8 (1.6%)

*More than one response to questions in the same category (major organ system) was counted once in calculating the prevalence of the reported physical health condition in each major organ category of questions

Comparing prevalence of chronic physical health conditions for age, gender, ethnicity, education and housing categories (Table 3):

Eighty Nine percent of participants younger than 24 years of age (67/75) reported at least one chronic health condition. However, none of these self-reported categories was more prevalent compared to participants older than 24 years. Comparing for gender and education level, there was no statistically significant difference in the prevalence of reported categories of chronic health conditions. Self-reported neurologic disease and the category of long-term conditions inclusive of Diabetes Mellitus and Anemia were significantly more reported amongst White and Aboriginal ethnicities. Ninety Five percent (189/199) of aboriginal participants reported at least one chronic condition; 17.1 % (34) had one, 22.6% (45) had two and 50.3% (100) had 3 or more chronic health conditions. Also, aboriginal participants had higher frequency of self-reported infectious disease compared to other ethnicities (P-value = 0.03). Participants, who had reported street as their current housing, reported a higher prevalence of neurologic, sensory problems, musculoskeletal, cardiovascular diseases, gastrointestinal, and some other long-term conditions compared to shelter dwellers.

Table-3- Prevalence of categories of chronic health conditions compared for age, gender, ethnicity, education level and housing status.

		Neurologic	Musculoskeletal	Infection	Respiratory	Long-term	Gastrointestinal	Cardiovascular	Sensory
	Number	**Number of self reported chronic health condition (%)**							
Age									
≤24 (75)	75	53 (70.7)	37 (49.3)	26 (34.7)	27 (36)	9 (12.0)	10 (13.3)	17 (22.7)	15 (20.0)
>24 (425)	425	310 (72.9)	224 (52.7)	179(42.1)	132 (31)	105 (24.7)	99 (23.3)	80 (18.8)	77 (18.1)
P value*		0.68	0.62	0.25	0.42	**0.02****	0.07	0.43	0.75
Gender									
Male	300	221 (73.9)	164 (54.8)	123 (41.1)	100 (33.4)	69 (23.1)	71 (23.7)	59 (19.7)	61 (20.4)
Female	200	141 (70.5)	96 (48.0)	81 (40.5)	59 (29.5)	44 (22.0)	37 (18.5)	38 (19)	30 (15.0)
P value*		0.41	0.14	0.93	0.38	0.83	0.18	0.91	0.16
Ethnicity									
White	280	212 (75.7)	149 (53.2)	103 (36.8)	86 (30.7)	60 (21.4)	58 (20.7)	57 (20.4)	53 (18.9)
Aboriginal	199	142 (71.4)	103 (51.8)	94 (47.2)	67 (33.7)	54 (27.1)	47 (23.6)	39 (19.6)	35 (17.6)
Other	21	9 (42.9)	9 (42.9)	8 (38.1)	6 (28.6)	0 (0.0)	4 (19)	1 (4.8)	4 (19.0)
P value¥		<0.01	0.65	0.07	0.75	0.01	0.71	0.22	0.93
Education									
Less than high school	318	239 (75.2)	169 (53.1)	124 (39.0)	107(33.6)	76 (23.9)	67 (21.1)	64 (20.1)	58 (18.2)
High school or higher	182	124 (68.1)	92 (50.5)	81 (44.5)	52 (31.8)	38 (20.9)	42 (23.1)	33 (18.1)	34 (18.7)
P value*		0.10	0.58	0.26	0.27	0.51	0.65	0.64	0.91
Housing									
Shelter	250	113 (45.2)	103 (41.2)	103 (41.2)	70 (28.0)	46 (18.4)	44 (17.6)	31 (12.4)	27 (10.8)
Street	250	250 (100)	158 (63.2)	102 (40.8)	89 (35.6)	68 (27.2)	65 (26.0)	66 (26.4)	65 (26.0)
P value*		**<0.01****	**<0.01****	1.00	0.08	**0.03****	**0.03****	**<0.01****	**<0.01****

* Fisher's exact test ¥ Chi-square test **P value ≤0.05 is considered significant

DISCUSSION

Socio-demographic characteristics

The current homeless population in Vancouver includes sizable number of young adults and women compared to the previously reported populations of single adult males with alcohol and/or substance use (Turnbull, et al., 2007). Hence, a recruitment of 40% women through purposive sampling combined with the reported mean age of 37.9 years (±11.0) having 15 % younger than 24 years makes this study more comparable to this population. Subsequently it makes it possible to have a better understanding of the specific needs of the usually underrepresented homeless women and youth (Begin, Casavant, & Chenier, 1999; Goldberg & Planning, 2005; Montgomery, Brown, & Forchuk, 2011; Quantz, 2002; Woodward, Eberle, Kraus, & Graves, 2002). Our purposive sampling method recruited 40% aboriginal participants, which concurs with studies indicating high percentage of reported aboriginal ethnicity amongst most Canadian homeless communities (Cardinal & Adin, 2005; Gaetz, et al., 2013; Goldberg & Planning, 2005; Hanselmann, 2001; Stephen W. Hwang, 2001; Quantz, 2002). 63.6% of the participants did not complete high school. Lower formal education has been suggested to be a contributory factor to homelessness (Frankish, et al., 2005; Josephson, 2004).

Physical health conditions

A history of head injury was the most prevalent neurological condition, and the most prevalent overall health condition among this population. Topolovec-Vranic, et al. 2012 systematic review found a higher frequency of traumatic head/brain injury (TBI) ranging from 8%-53% in homeless individuals, as compared to the general population. Two studies assessing the temporal relationship between homelessness and TBI showed the first incidence of TBI occurring before the onset of homelessness for the majority of participants, suggesting that TBI may be a contributory factor for homelessness. It was also suggested that homeless individuals with a history of TBI are more susceptible to subsequent injuries, causing cumulative impacts on cognitive and/or executive function with subsequent cognitive impairment, which in turn may contribute to the chronicity of homelessness (Backer & Howard, 2007; Stephen W Hwang et al., 2008; Oddy, Moir, Fortescue, & Chadwick, 2012; Topolovec-Vranic, et al., 2012). While our study finding is supporting the result of a high prevalence rate for TBI, causal relationship or the timely sequence of homelessness and TBI was not retrievable from the questionnaire used in our sample.

Migraine headaches were the second most prevalent reported neurological condition, congruent with Lee, et al. 2007 (D. F. Lee et al., 2007). History of head or neck injury, stressful life events, low socioeconomic status and depression are among the proposed risk factors for chronic migraine, which are all higher in frequency in the homeless population and therefore can be contributory to the high rate of migraine headaches in the homeless population (Cevoli et al., 2006; Couch, Lipton, Stewart, & Scher, 2007; Scher, Stewart, Ricci, & Lipton, 2003).

Finding musculoskeletal diseases as the second most prevalent reported category with back problems -excluding fibromyalgia and arthritis- as the most common health conditions is congruent with two previous reports (U. Beijer & Andreasson, 2009; van Laere, de Wit, & Klazinga, 2009). A systematic review showed a high prevalence of cognitive deficit, smoking, low education, low income, excessive alcohol consumption, depression and anxiety, as reported risk factors for musculoskeletal complaints in homeless population (Miranda, Vivielle, Machado, & Dias, 2012).

Other frequently reported conditions in our sample were Hepatitis B/C infection, HIV-infection/AIDS, 'Tuberculosis (TB) exposure and/or a positive TB test', in decreasing order of frequency. These findings are in line with a systematic review that reported the prevalence of HCV (3.9-36.2%), HIV (0.3-21.1%), TB (0.2-7.7%) and with the existing evidence on the

prevalence of HBV (3.3%- 34.7%) in homeless population (Ulla Beijer, Wolf, & Fazel, 2012; Brito, Parra, Facchini, & Buchalla, 2007; Moses, Mestery, Kaita, & Minuk, 2002; Vahdani, et al., 2009). Homelessness can be a predisposing factor for both latent and active forms of TB infection. Over-crowding, inappropriate ventilation in shelters and contact throughout large transient populations expose homeless individuals to Mycobacterium Tuberculosis, while malnutrition, alcohol use disorders and – although rare in BC - untreated HIV-infection accelerate progression of latent infection into the active form of the disease (Agustí & Barnes, 2012; Clark, Riben, & Nowgesic, 2002; Tan de Bibiana, et al., 2011). Injection drug use, multiple sexual partners, sex work and inconsistent use of condoms are suggested risk factors for blood born infections-HIV, HBV and HCV (Ulla Beijer, et al., 2012; Brito, et al., 2007; Vahdani, et al., 2009).

Asthma and obstructive lung diseases (COPD) were the main reported respiratory illnesses, congruent with Snyder & Eisner's (2004) study which determined the frequency of COPD to be 15% in the homeless population of San Francisco, California, USA, more than twice in the general US population in 2002 (Snyder & Eisner, 2004). High prevalence rates of smoking, poor nutrition and adverse environmental exposure in the homeless population can contribute to their increased rate of COPD (Agustí & Barnes, 2012; Itoh, Tsuji, Nemoto, Nakamura, & Aoshiba, 2013).

The high rate of asthma agrees with findings of two previous reports showing high prevalence of asthma in adult homeless people in Dublin, 2005, and homeless children in US (Cutuli, Herbers, Rinaldi, Masten, & Oberg, 2010; McLean et al., 2004; O'Carroll & O'Reilly, 2008). This could be the result of a possibly higher rate of respiratory infections, smoking or exposure to second-hand smoke pollution in unfavorable housing condition, all amongst proposed risk factors for asthma (Jie, Isa, Jie, Ju, & Ismail, 2013; Vernon, Wiklund, Bell, Dale, & Chapman, 2012).

Finally, cardiovascular disease, one of the leading causes of mortality in the homeless community, was reported in about 1/5 of surveyed people in this study (Stephen W Hwang, et al., 2009; Page, et al., 2012). Although high prevalence of hypertension in the homeless population has not been a consistent finding, poorly controlled hypertension is a common finding (Kim et al., 2008; T. C. Lee et al., 2005; Oliveira, Pereira, Azevedo, & Lunet, 2012). While emotional stress increases the risk of cardiovascular disease, high frequency of smoking in the homeless population can also augment their cardiovascular-related mortality (Kim, et al., 2008; Kubisová et al., 2007; Oliveira, et al., 2012).

This study evaluated the self-reported frequency of a comprehensive list of chronic physical health conditions in a unique sample of homeless individuals including a significant proportion of women, Aboriginal people, and youth subpopulations of homeless individuals that could often be underrepresented in surveys. Additionally, this unique sample consists of subpopulations of homeless people living in shelter as well as those living on the streets, which add to the generalizability of the reported findings to physical health condition of all the homeless population in general.

Compared to current prevalence of physical health conditions in general population, our survey revealed 2 times more arthritis and back pain, 3.5 times more migraine headaches, 3 times more asthma, 4 times more chronic obstructive pulmonary disease, 38 times more HIV infection, 70 times more chronic hepatitis B or C, 1000 times more Tuberculosis exposure (Bath, Trask, McCrosky, & Lawson, 2014; "Estimates of HIV Prevalence and Incidence in Canada, 2011," 2012; "Health Fact Sheets – Arthritis, 2013," 2014; "Health Fact Sheets – Asthma, 2013," 2014;

"Health Fact Sheets – Chronic obstructive pulmonary disease in Canadians, 2009 to 2011," 2012; Rotermann, Langlois, Andonov, & Trubnikov, 2013; "Tuberculosis in Canada 2012 - Pre-Release," 2014). These findings of high prevalence of treatable chronic health conditions has very strong implications for advocacy, policy making and healthcare provision priority setting as well as service delivery to homeless population regardless of the severity of their homelessness.

Interestingly, reported Diabetes Mellitus (DM) in our survey was half of the reported DM in general population. As well, Cancer was reported one eight as common as its prevalence in general population in Canada. Meanwhile, the prevalence of hypertension was similar to its prevalence in general population ("Health Fact Sheets – Diabetes, 2013," 2014; "Canadian Cancer Statistics publication," 2013; "Health Fact Sheets – High blood pressure, 2013," 2014). These revealed low prevalence chronic physical health conditions could be a result of lower prevalence of obesity and its metabolic, carcinogenic and atherosclerotic consequences in homeless population. The irony of food instability after all has played some role that is in favor of the vulnerable homeless population.

Factors associated with increased frequency of self-reported chronic health conditions:

A high proportion of youth in our sample (89.3%) reported having one or more chronic health conditions. This is in line with the reported 74% prevalence of one or more chronic medical condition in homeless youth of British Columbia (Goldberg & Planning, 2005). This highlights the significant healthcare needs of homeless youth, which is the fastest growing homeless subpopulation in Canada (Boivin, Roy, Haley, & Galbaud du Fort, 2005; Edidin, Ganim, Hunter, & Karnik, 2012; Frankish, Hwang, & Quantz, 2005).

Comparing for gender, or education level, this study could not find any difference in prevalence of various categories of chronic health conditions. This finding is supported with the study from Los Angeles about 385 male and 144 female homeless participants (L. Gelberg & Linn, 1992). On the other hand, the study of 1,704 homeless from Stockholm; 1,364 males (80%) and 340 female, reported higher risk of diseases of blood, genitourinary system, eye, skin, as well as neoplasm and infections in homeless women. However women were reported to be at lower risk of injury/poisoning, diseases of the circulatory, digestive, respiratory system and ear (Beijer & Andreasson, 2009). This suggests the possibility of finding gender difference in chronic health conditions in a larger population of homeless people.

In this study, 95 % (189) of aboriginal participants reported at least one chronic condition; 17.1 % (34) had one, 22.6% (45) had two and 50.3% (100) had 3 or more chronic health conditions. This shows a significantly higher prevalence of chronic health conditions compared to previous studies on health status of different aboriginal subpopulations in Canada (("Inuit health: Selected findings from the 2012 Aboriginal Peoples Survey," 2014,"Aboriginal Peoples Survey, 2006: An overview of the health of the Métis population," 2006,Aboriginal Peoples Survey 2001 - Initial Findings: Well-being of the Non-reserve Aboriginal Population, 2001). This indicates the association of homelessness with multiple chronic health conditions.

The three most common chronic health condition categories in aboriginal subpopulation in our study were neurologic (71.4%), musculoskeletal (51.8%) and infectious disease (47.2%). Also, compared to white and non-aboriginal ethnicities, participants with reported aboriginal ethnicity had a significantly higher prevalence of infectious disease. This could be explained by higher vulnerability to infectious disease reported in previous studies in aboriginal population. (Reading, 2009; Ryan, 2008).

Living on streets was associated with increased frequency of all categories of chronic health conditions except infectious and respiratory tract conditions. This is in agreement with

previous studies demonstrating poorer physical health as well as less medical service use by the people living on streets compared to their sheltered counterparts (Lillian Gelberg & Linn, 1989; Nyamathi, Leake, & Gelberg, 2000). Poorer hygiene, more severe malnourishment, more engagement in risky sexual behavior and drug use are possible factors in increasing frequency of chronic health conditions among homeless people living on streets compared to sheltered homeless individuals. Supportive housing programs could play a significant role in improving physical health of homeless population (Stephen W Hwang, Tolomiczenko, Kouyoumdjian, & Garner, 2005).

Limitations:

While including three cities strengthens the reliability of results by not narrowing our scope to only one location, it may limit the generalizability of the findings to homeless populations from other Canadian provinces or countries. Secondly, the self-reported nature of this data introduces reporting bias and recall bias, calling for an objective assessment of the physical health status of the homeless in future studies. Thirdly, selecting a representative sample of the homeless population is always difficult to achieve and possible resultant bias should be considered while interpreting results considering our purposive sampling. Finally, because the aim of this study was to determine the prevalence of all possible self-reported, chronic, physical health conditions in one survey, the questionnaire covered a broadly categorized, all-inclusive but non-exhaustive list of chronic physical conditions. This led to the inevitable formation of categories of physical health conditions, lacking in adequate details and accuracy of diagnosis for the self-reported health conditions. Hence, we suggest that future studies evaluate a more detailed, objective and specific questionnaire, to detect common medical conditions of concern within the homeless population.

CONCLUSION

Neurological, musculoskeletal, infectious and respiratory diseases were frequent self-reported physical conditions among homeless people surveyed. There was a notable prevalence of neurological conditions, especially migraine headache, and also musculoskeletal disorders, in those surveyed. These findings, call for awareness on the part of primary healthcare physicians who are in the first line of treatment. Additionally, the risk factors for many of these conditions, such as precarious living conditions, poor nutrition, psychosocial stress, smoking and substance use, can be addressed towards improving the health status of this population within different levels of the healthcare system.

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TAB 15

Court File No. CV-25-00000750-0000

ONTARIO

SUPERIOR COURT OF JUSTICE

BETWEEN:

THE REGIONAL MUNICIPALITY OF WATERLOO

Applicant

and

PERSONS UNKNOWN AND TO BE ASCERTAINED

Respondents

APPLICATION UNDER Rule 14.05 of the *Rules of Civil Procedure*

This is the Cross-Examination of **Peter Sweeney** on his affidavits dated June 6, 2025, July 2, 2025, July 31, 2025, and September 16, 2025, taken via Zoom video-conference on consent of the parties on December 11, 2025.

APPEARANCES:

ANDREW LOKAN, Mr. GRETA HOAKEN, Ms.	Counsel for the Applicant
ASHLEY SCHIUTEMA, Ms. JOANNA MULLEN, Ms. SHANNON DOWN, Ms.	Counsel for the Respondents
CHARLOTTE CAHILL, Ms.	Student-at-law
MERCEDES PEREZ, Ms.	Amicus Curiae

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DECEMBER 11, 2025

PETER SWEENEY, AFFIRMED

CROSS-EXAMINATION BY MS. DOWN:

1. Q. So, good afternoon, Peter.

A. Good afternoon, Shannon. How are you?

2. Q. I'm good. How are you?

A. I'm all good, thanks.

3. Q. Good. Before we get into the questions, I just want to confirm that you have a copy of your affidavit. So I think there's four affidavits?

A. Yeah. That's all I have in front of me are the four printed out so I can reference them or you can point me in the right direction.

4. Q. Okay, and so you're saying you don't have any other documents with you that you're referring to at this time?

A. That's correct. That's correct.

5. Q. Okay. If you happen to, you know, need access to another document, as long as you just let me know.

A. Okay.

6. Q. I just want to also confirm that you understand that once we start your cross-examination,

that you are not to communicate with your legal counsel ---

A. I understand.

7. Q. --- while you're -- during the cross-examination. Okay. And that includes if we adjourn, that you're not to communicate with them during the period of time that we're adjourned.

A. Yeah, I understand that, too.

8. Q. Okay. And yeah, if you need a break, just let me know. But I think we'll just have a short amount of time right now. And then we'll be adjourning and starting again tomorrow because I have to stop at 3:30.

A. Oh, okay, that's fine. I only have until 4:00 so I'm in your hands until you're good.

9. Q. Okay. So I am going to start with a couple of paragraphs from your third affidavit.

A. Great.

10. Q. So I'll let you get that in front of you.

A. Sure. If you can just tell me the number, the Paragraph number, that would be helpful.

11. Q. Yeah, so I am going to start with the Paragraphs 42 and 43.

A. I am going to grab my glasses, just to

make sure. Can you say that again?

12. Q. Paragraph 42 and 43.

A. Yes, around Exhibit A, let me just make sure I have Exhibit A which is going to be a municipal document, correct?

13. Q. Yes.

A. Sorry, hang on.

MS. CAHILL: Shannon, would you like me to put that up on the screen?

THE WITNESS: No, I've got it. So 42 to 43, Shannon?

MS. DOWN: Yeah, that's fine.

THE WITNESS: Okay. Sorry.

MR. LOKAN: Can I ask --can I ask that it go up. I seem to not have the third affidavit.

MS. DOWN: Okay, we can put it on -- we can put the -- you want the affidavit put on the screen?

MR. LOKAN: The document from the third affidavit, if you don't mind.

MS. DOWN: Okay, sure.

MS. CAHILL: Sorry, do you want Exhibit A?

MS. DOWN: Yes.

MS. CAHILL: Okay.

--- SCREENSHARE

BY MS. DOWN:

14. Q. Okay, so you're familiar with this document, Peter?

A. I am.

15. Q. Okay, and in your third affidavit at Paragraph 42 and 43 ---

A. Yeah.

16. Q. --- you state that:

"… Encampments are not safe or sustainable and should not be understood as a solution to homelessness …"

And you reference the wording in this document as guidance for that statement?

A. So I am reading in Section 43, Shannon, a direct quote?

17. Q. Yes.

A. Yeah, so 42 just points to the exhibit and 43 pulls a quote that I then say on behalf of the Region we agree with. That's what we're talking about?

18. Q. Yes.

A. Okay. Sure.

19. Q. So in that quote, part of that quote states that:

"… Encampments do not satisfy the requirements of a human right to housing …"

A. It says, "rarely satisfy" to be accurate.

20. Q. Correct.

A. Okay.

21. Q. Thank you. And so, first of all, I guess we agree based on that statement I think that people have a human right to housing?

MR. LOKAN: That's for the court whether there is or isn't a human right and where it comes from.

MS. DOWN: Well, I'm asking Mr. Sweeney because he references this and says that the Region agrees with it.

MR. LOKAN: What's the paragraph that he ---

MS. DOWN: Paragraph 43.

THE WITNESS: Forty-three.

MR. LOKAN: And what -- I don't have that before me, I'm sorry.

MS. DOWN: Well, I can read it to you.

MR. LOKAN: That would help, I'm sorry.

MS. DOWN: On Page 4 of that document under the heading "Basic principle": the engagement guide explains that "homeless" -- and this is in quotes:

> "… Homeless encampments will rarely satisfy the requirement of the human right to housing and thus should not be understood as a solution to homelessness and should not be permanent.
>
> The Region agrees with the NWGHE on this point which is why it does not favour the establishment of an alternative site for the encampment and instead is prioritizing finding suitable alternative shelter for those currently living at the encampment …"

MR. LOKAN: Okay.

MS. DOWN: So I am asking Mr. Sweeney to confirm that the Region agrees and that we agree, that people have a human right to housing.

MR. LOKAN: I am going to say that that's a

question for the courts to determine. But you're free to ask Mr. Sweeney about the establishment of alternatives and what it's prioritizing. And so on and so forth.

MS. DOWN: So is he -- are you going to strike that part of his affidavit?

MR. LOKAN: This affidavit does not say that there is a human right to housing as a matter of Mr. Sweeney's opinion.

MS. DOWN: It seems to say that in this paragraph. It says:

"… The Region agrees with the NWGHE on this point …"

And that point being that:

"… Homeless encampments will rarely satisfy the requirements of the human right to housing …"

And that:

"… Should not be understood as a solution to homelessness …"

I think it's implicit in that, that there is a human right to housing.

MR. LOKAN: Well, you can ask him if that statement is -- it's implicit in that statement or not because that statement

covers more than one thing.

MS. DOWN: Sure.

BY MS. DOWN:

22. Q. So, Peter, when you say in your affidavit the Region agrees with the NWGHE on this point, is it implicit that you agree that human -- people have a human right to housing?

MR. LOKAN: I am going to -- okay, we'll get his answer on the record first. As you know, there are cases from Ontario Court of Appeal and elsewhere that talk about whether there is or isn't a human right to housing.

There's the international law perspective, there's whatever the Charter does or doesn't say. It's not really for a lay witness to get drawn into the human rights debate.

MS. DOWN: Okay. My point is that if Mr. Sweeney is relying on this statement as part of his evidence in this hearing, he's making -- he's made an opinion on it already in this affidavit.

MR. LOKAN: That's a point I am sure you can argue at the hearing.

MS. DOWN: Well ---
MR. LOKAN: I said if you want to ask him if he's referring to the first half or the second half or both, then ---
MS. DOWN: Okay.
MR. LOKAN: --- you can get an answer on record that -- look, it's a question of law for the court. That's my fundamental point.
MS. DOWN: Okay, well you've kind of led him to some way of answering it anyways right now, Andrew. So I appreciate that maybe just let me ask my question.
MR. LOKAN: If they're not about human rights, absolutely. Go ahead.
MS. DOWN: Well if his affidavit references human rights, then I am going to ask him about that.
MR. LOKAN: As I said, you can ask the question.

BY MS. DOWN:

23. Q. So, Peter, do we agree that people have a human right to housing based on the statement that you've made in the -- in your affidavit?

A. Thanks for the question. Yeah, the

statement that we reference has a couple of points. And I will say certainly the approach that we take at the Region is that we believe that everybody in this community should have a safe place to call home.

You know, to my external counsel's comment, I am not technical human rights expert but I do believe that what we are trying to accomplish is to ensure that everybody in this community -- and I've stated that many times -- has a safe place to call home.

And that the other part of that quote from the report, that a large encampment such as 100 Vic, given that it's not something that we would -- we would see solve some of the challenges that we know people are facing which is why we are focusing on alternative shelter for those who are currently living rough in the Waterloo Region.

24. Q. Okay, so as Commissioner of Social Services, are you recommending to Council that a budget be passed that would provide enough funding to have shelter, transitional housing, supportive housing or permanent housing for all of the people living unsheltered in Waterloo Region?

A. So the way our budget works, Shannon, is the Regional Council sets the budget parameters.

And we, and as the Commissioner of Community Services, which includes housing and homelessness, we communicate to Council what level of service we can provide within that funding envelope which is what we do.

And over the last number of years, we have put forward additional budget requests that have nearly tripled the overall housing/homelessness budget in the last four or five years.

25. Q. Okay, so I am not sure that you really answered my question. Is the budget that's being discussed, would it provide enough funding to have shelter, transitional housing, supportive housing or permanent housing for all people living unsheltered in the Regin?

A. The budget request from Regional Council, the direction from Reginal Council, is to bring forward a budget motion which will go forward to Regional Council next week to bring that budget motion in for a tax increase of less than five percent.

Within that envelope and the envelope that we have, we are agreed that there are currently -- there's more demand on the system than we have supply to meet the needs of everybody that we are aware of that is experiencing homelessness.

26. Q. Okay, so can we agree that in the present and probably for the foreseeable future, there will be people in the Region who cannot -- or people for whom the Region cannot provide accommodation for shelter?

A. I can comment that on -- based on the current demands on the system, the homelessness system, the housing stability system, there are currently more people who are experiencing homelessness than the Region has funding for -- that's across that system. Yes.

I can't comment on the future state. I can tell you that in the last year, we have seen through the efforts of the Region and our partners, a decrease in overall homelessness in Waterloo Region by eight percent. And we reported that to Council back about a month ago.

27. Q. Okay, so I think at the 2024 Point in Time count, there was approximately 1,000 people or so who were living unsheltered. And you're saying that that number is eight percent less now?

A. No, I'm saying the overall -- what we reported to Regional Council and, Shannon, we can -- I think there's an undertaking process.

I won't get ahead of myself here but there's

a public report that clearly outlines. I don't have that in front of me. And what we reported to Council is the overall rate of homelessness has decreased by eight percent from '24 to '25.

28. Q. Okay, but we're still dealing with a very large group of people, let's say somewhere around 1,000 people who are living unsheltered in the Region.

A. The Point in Time count was November of last year. It's exactly that, a Point in Time count. We rely more accurately on our HIFIS system which is a federal system I believe you are aware of.

I don't have the HIFIS numbers in front of me. So I don't have the exact number relative to the Point in Time count from last year.

29. Q. Okay, can you provide an undertaking to get us the numbers for, I guess, December, November from the HIFIS system on the number of people who are living unsheltered in the Region?

MR. LOKAN: We'll give that undertaking.

MS. DOWN: Okay.

UNDERTAKING

BY MS. DOWN:

30. Q. And would it be fair to say that Waterloo Region, in fact, has one of the highest proportions of its homeless population who live

unsheltered or in encampments in Ontario?

A. No, I have no data to affirm or deny that statement.

31. Q. Okay, I am going to ask, Charlotte, can you put up the exhibit. I think it's entitled, "Francisco Truong" and it's a LinkedIn post. Can you put that up on the screen?

--- SCREENSHARE

32. Q. Now, I don't know if you've seen this post. Francisco, I understand is -- works for the Region in the housing support group?

A. That's correct.

33. Q. Okay, I'll give you a moment if you like to read what he has written here.

A. Okay, I am assuming Fran's pulling this from the PiT count? I don't understand what -- I am not sure what the source is.

34. Q. Well, it seems like he ---

A. (Indiscernible).

35. Q. Because he does reference it.

A. Okay. So that looks like it's public data, Shannon. So …

36. Q. Okay. So this chart seems to be

showing that Waterloo Region, 43 percent of the people who are homeless are living unsheltered. That would be that 1,000 or so people.

A. Relative to the November 2024 Point in Time count?

37. Q. Yeah.

A. That appears to be what this is, yes.

38. Q. Okay, and it seems to be suggesting that Waterloo Region is -- has got the highest percentage of these municipalities. So it references Niagara, Hamilton, Simcoe, Middlesex, Halton, Ottawa, Toronto and Peel.

A. Yeah, I can see it.

39. Q. Okay. And so you agree that this is the percentage, at least on the face of it, looks like we have an extremely large percentage of people, amongst the people who are counted as homeless who are living unsheltered.

MR. LOKAN: Just to be clear, Shannon. You're putting to him an article he doesn't recognize and he has no idea whether the facts here reported are true or not. And there was no effort by your clients to put forward this evidence. So you're giving him a random LinkedIn post that he doesn't know

if this is accurate or not.

MS. DOWN: Let's ask him about that. I'll ask him about that.

BY MS. DOWN:

40. Q. Do you have any -- do you have reason to think that Francisco's post in not accurate, Peter?

A. No, I work with Fran. I would have no reason to believe that the data that you're presenting to me here today appears to be pulled from the November 2024 Point in Time count. Which is one dataset set that attempts to enumerate the level of homelessness in communities across Ontario.

41. Q. Okay, and it's an important dataset. Like it's one that the Region relies on fairly heavily?

A. It is a -- it is a dataset that we use. I would suggest that given that it happens every four years, we take it seriously. And there are other datasets that we continue to use on a more daily basis.

42. Q. Okay, but was there another Point in Time count that happened this fall?

A. A federal Point in Time count? No, I don't have ---

43. Q. No, a local ---

A. (Indiscernible).

44. Q. A local one. Sorry, a local one.

A. I am not aware of a formal Point in Time count. There may have been -- again, actually I don't. I am not familiar with a formal Point in Time count being conducted. That's every four years that's called ---

45. Q. Okay.

A. --- the PiT count.

46. Q. So when you say the HIFIS numbers, you would rely on those as well. How do the HIFIS numbers relate to the Point in Time count? So are they updating the Point in Time count, are they -- do they start with the Point in Time count as the basis for the numbers in HIFIS?

A. No, my understanding, Shannon, is that the HIFIS is a real-time count of individuals that are connected in with the Region's service system manager role for whom we have information about -- and there's personal information obviously there.

And this data is inputted by providers and shelter operators as the such. And so it is a -- as real-time picture of the individuals that are requiring service in our community at any given time.

Whereas the Point in Time count is exactly that, it's a span of a couple days and every four years.

47. Q. Okay. With the HIFIS -- would you say HIFIS would be as extensive or as inclusive as the Point in Time count in terms of the effort to get the broadest picture of homelessness in the Region?

A. I would say from my understanding, HIFIS is a more timely picture. Is about as a real-time picture of housing and homelessness in our community that we have.

48. Q. But it would employ a different methodology than the Point in Time count. Is that correct?

A. That's my understanding, yes.

49. Q. So it doesn't really replace the Point in Time count per se. Because it might not reach some of the people. So, for example, my understanding of the Point in Time count is that on those days that are being counted, there's a group of people who are out in the Region who are connecting with a variety of individuals.

You know, as many settings as possible to gather data on the -- whether or not they are experiencing homelessness and what they are -- whether they are accessing shelter, they're living

unsheltered, etcetera.

A. Mm-hmm.

50. Q. Sorry, you're saying HIFIS is more people who are connecting with the system.

A. Yes.

51. Q. And the data, the data from those connections?

A. Yes, what I'm -- can you form that in a question so that I can help you here?

52. Q. Yeah, so I'm just -- you see, my understanding is that the Point in Time count is a much more comprehensive, broader sort of look at homelessness at a particular point in time.

But what you're telling me is HIFIS is a snapshot of what the Region's -- people who are connecting with the Region through your various services at any given time.

A. I am still not -- so I heard you make an assumption about PiT and then make an assumption about HIFIS. I'm ---

53. Q. Yeah, HIFIS -- HIFIS is more focused ---

A. Can you frame it in a question so I can help, so I can answer?

54. Q. So is HIFIS more focused than -- I

guess, you're saying HIFIS -- I am trying to understand whether HIFIS really encapsulates like updates to the Point in Time count or if it's just something completely different, the numbers, the data?

A. So the HIFIS system is the most up-to-date accurate representation of individuals in our community that we know of that are experiencing homelessness and, in some cases, where people are currently residing or not.

55. Q. Okay, would it miss people that the Point in Time count would catch?

A. I don't know. Potentially; potentially not. I can't say definitively that that is the case.

56. Q. Okay. We'll move on from there. I'd like to put up for an exhibit, the next exhibit. So I guess it would be Exhibit B.

MS. SCHIUTEMA: So I don't think this one was marked. Sorry to interrupt you.

MS. DOWN: Okay. Sorry, so we'll mark the first one I guess Exhibit 1?

MR. LOKAN: No, it's Exhibit A.

MS. DOWN: Sorry, Exhibit A.

EXHIBIT NO. A: LinkedIn post

EXHIBIT NO. B: Region's winter-warming package

MS. DOWN: And, Charlotte, if you could put up on the screen Exhibit A from Sara Escobar's second affidavit from the reply motion record?

BY MS. DOWN:

57. Q. And so I'll give you a second just to take a look at this. I can tell you it's -- this is a press release from the Region talking about winter-warming packages and the program that the Region funds related to that.

A. In 2022?

58. Q. Yes.

A. Okay.

59. Q. Is this a program that still exists?

A. Winter-warming?

60. Q. Winter-warming packages, yes.

A. Yeah, we have a winter-warming -- I believe the packages are still distributed. I don't know how they relate off-hand between now and 2022.

61. Q. Okay.

A. It's still something that we're doing.

62. Q. Okay. And, Charlotte, if you can

scroll down to Exhibit B. Just keep scrolling because it's the chart that I am mostly interested in.

Sorry, this is a series of emails about the program. But I just want to show you there's a document. There we go. Winter-warming package. So this is an example of the winter-warming packages that get handed out to people?

A. Mm-hmm.

MR. LOKAN: To help us figure out where we were later, is it possible to give a page number either from the PDF or the -- or the reply record?

MS. DOWN: Charlotte, do you have the page number there?

MS. CAHILL: This is -- it looks like Page 30 on the PDF.

MR. LOKAN: Thank you.

BY MS. DOWN:

63. Q. Okay, so this is a document that just talks about some of the equipment that the Region provides in these winter-warming packages. And my understanding -- and maybe you can confirm or deny this -- is that this is still -- this program is still happening.

The Region funds a variety of organizations to hand out these packages to people who are living unsheltered. And it provides them with a number of pieces of survival equipment essentially, candles, tarps, bungy cords, socks, boots.

And my understanding is that it also includes that the Region has provided tents to people. Is that -- can you confirm whether that's still the case?

A. So can I just ask, is this list from 2022 or is it from -- is it this year?

64. Q. It might be from 2022; I don't have an updated one. But if it's not, I guess I would ask for an undertaking that we get a copy of what is provided to people in 2025.

A. Yeah, we can certainly do that ---

MR. LOKAN: Yes, we'll give an undertaking.

THE WITNESS: Okay.

UNDERTAKING

BY MS. DOWN:

65. Q. Can you tell me a little bit about this program, Peter?

A. Yeah, what would you like to know, specifically?

66. Q. Yeah, so it provides people with this

survival equipment, it's funded by the Region and people are handed out these packages with this equipment.

So is it -- are people given tents as well?

A. I don't know, I'd have to confirm whether that's -- whether those are available or not.

67. Q. Okay.

A. So we fund -- we fund the agencies to put together and I'll -- the Working Centre is an example -- to put these together and distribute them. So I would have to -- I would have to confirm with staff what the most up-to-date contents of those are for this ---

68. Q. Okay.

A. --- current time. Yes, happy to do that.

69. Q. Thank you. And what is the purpose of the program?

A. So the purpose of the program is to work with our partners who are in the community to provide those that are sleeping rough or unsheltered in some way, shape or form with some items relative to staying warm if they're still outside.

70. Q. Okay. So ---

A. Hence (indiscernible) winter-warming.

71. Q. Okay, so these items, you know, boots, sleeping bags, tarps are considered important survival equipment for those people?

A. Yes, so the program has been updated -- again, I'd have to go back and check for you, Shannon -- in the last few years to respond to partners indicating what, in their experience, would be most useful in these kits.

And so what is provided is a representation of what our partners are telling us that would be most useful for the individuals that they are connecting with who are -- who are, unfortunately, outside.

72. Q. Okay. And so if tents are one of the things that are provided, I mean, can we -- would you agree that tents would be an important piece of survival equipment for those people who are living unsheltered in the winter time?

A. So first of all, can I just ask a qualifying question, technically? Is -- if I can confirm on the tenting piece is that something I can come back to you for tomorrow or do we have to do an undertaking? I don't know what the ---

73. Q. You can come back to me tomorrow. If you can get an answer to that, that would be great.

A. I can certainly do that.

MR. LOKAN: Shannon, normally, the caution on evidence is not discuss your evidence with anyone. But you are I think suggesting that you're fine with Peter talking to staff in the Region to find out the answer to this question?

MS. DOWN: This specific question, yes, I'm fine with that because I think it would assist us.

MR. LOKAN: Okay.

BY MS. DOWN:

74. Q. Okay. So I'm going to jump a little bit around here. In your second affidavit, if you can pull that up.

A. Yeah. Okay, go ahead.

75. Q. If you want to take to a look at Paragraph 13. Charlotte, you can stop the screensharing, we can just -- I can just ask him about this.

So at Paragraph 13 you mention the Code of Use By-law and state that it applies to regional properties, you know, broadly. Though it -- and the Region still is enforcing that presumably?

A. Yes, again, I don't have any

responsibility in my portfolio for enforcement but there is a Code of Use By-law which I reference. And it's right there and it applies to all other regional lands. That's my -- that's correct.

76. Q. Okay, okay.

A. I have no area of responsibility on enforcement.

77. Q. Okay, but this touches on areas that relate to the work that you do because it involves people who are experiencing homelessness. I am assuming that you have some base level of knowledge about how this works.

A. About the Code of Use By-law?

78. Q. Yes, how it applies to the homeless population that you serve?

A. Well, yeah, I mean, it's right there. So again, can you help me by asking something ---

79. Q. Sure.

A. --- specifically?

80. Q. Would you agree that ---

A. The By-law is in place, that's all I have. Yes, okay.

81. Q. Okay, would you agree that the By-law prohibits erecting a tent on regional property?

A. If somebody could put the By-law up on

the screen; I don't have the By-law memorized.

82. Q. Yes, we can put it up on the screen. Do you need help finding it, Charlotte?

MS. CAHILL: Yes, please.

MS. DOWN: Sorry, I mean I (indiscernible) though we were going to have this (indiscernible) ---

MS. CAHILL: That's okay.

MS. DOWN: I assumed that this would be non-controversial. I got ---

MR. LOKAN: So I'm actually just ---

MS. DOWN: Just a second.

MR. LOKAN: I am actually just finding it for you to sort of cut through -- the Page 39 of the affidavit, 49 of the record, Schedule B, Prohibited Activities number 2(2)(t) says:

"… Erecting without authorization any tent, any structured tent or temporary shelter …"

That's the reference you're looking for?

MS. DOWN: Yeah.

MR. LOKAN: So that's what the Code of Use By-law says in that provision.

BY MS. DOWN:

83. Q. Okay, so, can you confirm, Peter, that that's your understanding that the By-law prohibits erecting a tent on regional property?

A. My understanding.

84. Q. Okay. So just in terms of once -- let's just imagine hypothetically that 100 Victoria Street is closed. Is there anywhere where people would be able to legally set up a tent on regional property based on your understanding of this By-law?

A. So my understanding of the By-law based on what I just said, is that absent any changes in the By-law, setting up a tent or a structure on any regional land would be in contravention of the current By-law.

85. Q. Okay.

MR. LOKAN: And, Shannon ---

MS. DOWN: But that ---

MR. LOKAN: Sorry, you put that in terms of is there anywhere someone legally could erect a tent? It is of course always possible but there's a higher authority than the Code of Use By-law that might make it legal. But if ---

MS. DOWN: I'm asking him with referencing

the Code of Use By-law.

MR. LOKAN: Okay, great. Thank you.

MS. DOWN: Okay.

BY MS. DOWN:

86. Q. And I know that you work for the Region but I am assuming that you have some familiarity as Commissioner of Social Services with sort of the second-tier municipalities, the way they approach these issues.

And is it fair to say that there would be similar by-laws, whether it's the City of Kitchener, Waterloo or Cambridge in terms of -- people can't just put up a tent on properties that are belonging to those municipalities either?

A. Yeah, I can qualify by saying I don't have chapter and verse of specific municipal by-laws. But my broad understanding working in this space is those provisions such as that exist at the area municipality level as well.

87. Q. Okay. And I think we would agree that, I mean, people can be removed by the police if they camp on private property. So if it's, you know, property owned by a business or an individual, they could call the police and they can have someone

removed?

A. That's what ---

88. Q. Is that what your ---

A. --- (indiscernible) through the TPA, is my understanding.

89. Q. Correct. And so really, 100 Victoria Street right now, is the only place that they have some protection, some legal protection because of the previous *Valente* decision on that property if they want to set up a tent?

A. My understanding of the *Valente* decision and what's been in practice since that time is that the Code of Use -- the current Code of Use By-law is not enforceable at 100 Victoria. That's my understanding, correct.

90. Q. Okay. So once 100 Victoria Street is closed presumably at some point for the Metrolinx or the Kitchener Transit Hub, what is the plan for the people who are living outdoors? Like what is the -- your group's plan for those people?

A. Well, the plan as it's stated is the plan to end chronic homelessness by 2030. And so the work and the activities that are in the plan to end chronic homelessness, is the plan to support all individuals who are experiencing homelessness in

Waterloo Region, whether they be at 100 Victoria or elsewhere.

91. Q. But that's like a long-term plan, right? Like that talks about ending chronic homelessness by 2030 and working towards that goal between now and then. But I'm talking about like the next day, what is the -- what is the Region of Waterloo's plan for those people on the day after the encampment closes?

A. So ---

92. Q. Where do they go, what are their options?

A. So with the resources that we have available, our plan is to -- for all the resources that are provided to us through the provincial government, the federal government and our municipal council, to continue to work directly with individuals who are experiencing chronic homelessness.

And to the best of our ability, find them alternative indoor shelter where we can, within the confines of the resources that we have available to us.

93. Q. But we know that there's a thousand people who are not sheltered who are living outside who don't have access to the emergency shelter system.

Where do they go?

A. So I think that's the challenge of this work, Shannon, in that we are in a situation where chronic homelessness in this community, in this province and in this country, is at significant levels. And in communities across the country, the demands for space outstrips supply and Waterloo Region is no different.

And so we will continue to support people as best we can with the budget that we have significantly increased much more so than many other municipalities across Ontario, to support as many people as we can with the limited resources we have.

94. Q. Okay, so when you're supporting those people, let's look at somebody, you know, a person who's got a tent and has been moved off of the encampment site. But can't -- there is no shelter space for them. If they're asking one of the unsheltered workers, like where do I go? The shelters are full. Where can I go? What is the Region's response?

A. The Region's response in a situation like that, is an unfortunate one that we are dealing with in Waterloo Region and across the province and across the country. There are occasions where there

are -- that we are at a full capacity.

I will tell you that in our experience, generally-speaking, there are -- there is capacity within our housing stability system, almost every night. Some nights less so than others.

But we also know that sometimes for some folks what we have to offer is not what they're willing to accept. And people -- people make those decisions in those cases to -- to continue to find their own way through sleeping rough, finding a place where they can. And do what they need to do. And so -- yeah that's ---

95. Q. So are there nights when the system is completely full?

A. There -- it's -- it's conceivable that the system is conceivably full. I don't remember the last time we had 100 percent. We do have a winter surge capacity and so we're in that now. And so as of November 1st, we've added winter-warming overnight spaces both in Kitchener and Cambridge. And we do know that the system gets -- gets strained.

96. Q. Okay, so when the system is full and somebody is, you know, walking around, they've got their tent, their backpack, they're looking for somewhere to go, I am asking you what is the USW going

to say to them?

A. So USW is either going to say, I have -- based on the system, we have a shelter bed, a motel or something available for you through the housing stability system, if they have that.

And if there's a scenario where there is zero bed capacity, they will continue to try and do our best. We have occasions where we go over-capacity, and there are occasions, Shannon, as you know, where there is no capacity and people are forced through circumstance to make alternative arrangements. And that often is people that would be sleeping rough in this community.

97. Q. So we have already established that there's really -- there's nowhere for them to legally put up a tent. Because the Code of Use By-law covers the Region's properties, the lower-tier municipalities have similar by-laws, private property is off limits because people could just call the police.

So where could -- you know, I guess my point is you're saying encampments -- we don't -- we don't support an alternative encampment site but we also -- there's nowhere for people to go if the system is full. Does that not seem like you're creating a situation where people have zero option?

A. So ---

98. Q. In that, you know, in that circumstance.

A. Yeah, and we also know quite pragmatically that despite the scenario that you've just described in this community and in other communities where by-laws exist, people do choose to tent in places that are sometimes more visible than others. But we know that that happens.

99. Q. Okay. I think I'm going to have to take a break there because I have another meeting I have to get to. But we'll start again tomorrow. So I think the plan is to start tomorrow at 10:00.

As I said, if you want to reach out to your staff to find out if tents are provided, I would appreciate that.

But other than that, I would ask that you not discuss anything with your counsel or with other members of regional staff, other than that specific item.

A. Understood.

MR. LOKAN: We've explained to Peter he should not be discussing his evidence already given with anyone and he certainly will not be discussing his evidence with

counsel.

MS. DOWN: Okay, thank you. Appreciate that and I will see you tomorrow at 10:00.

THE WITNESS: See you tomorrow at 10:00. Thank you.

MS. DOWN: Thank, you.

THE WITNESS: Bye-bye.

MS. DOWN: Sorry, Barbara, we'll adjourn for today.

MADAM REPORTER: All right, we'll see you in the morning, 10:00.

MS. DOWN: Thank you.

MS. CAHILL: Thank you.

--- ADJOURNED

THIS IS TO CERTIFY that the foregoing is a true and accurate transcription of my recordings and notes, to the best of my skill and ability.

_____

Barbara A. Pollard
Certified Court Reporter

Photostatic copies of this transcript are not certified and have not been paid for unless they bear the original signature of Barbara A. Pollard, C.C.R., and accordingly are in direct violation of Ontario Regulation 587/91, Courts of Justice Act, January 1, 1990.

EXHIBIT “A”

Francisco Truong MSW, RSW • 2nd
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3w • Edited •

WOW! 43% of Waterloo's homeless population live OUTSIDE IN ENCAMPMENTS & UNSHELTERED, the HIGHEST in Ontario, with Toronto at 10% (PiT count data, focused on large municipalities over 500,000).

Waterloo Region also had one of the highest total enumeration of people living unsheltered and in encampments at 1,009 people, eclipsed only by Toronto with 1,615, however Toronto had much more total homelessness (15,418) compared to Waterloo (2,371) but also had a much larger population (3.2 million in 2024) compared to Waterloo (706,875 in 2024).

Smaller Regions and Municipalities (under 500,000) are more challenging to compare given the significantly smaller total enumerations. Taking the Region of Wellington-Guelph (265,513 population in 2024), this smaller population counted only 335 experiencing homelessness but had 44% unsheltered which is about 100 people. Every Region and Municipality is difficult to compare with another due to so many unique social and political challenges, whether looking at Toronto with its massive population and dense urban core, or Peel with its proximity to the airport and support provided to asylum claimants or rural areas where small municipal populations and large distances from resources create nuances uncomparable to larger Municipalities.

Why is it important to highlight the Unsheltered populations such as those living in Encampments? They have much more unique experiences and needs, often requiring greater focus on basic needs, dignity, safety and thus, HUMAN RIGHTS, in addition to their housing needs and preferences.

In Waterloo Region, the needs of unsheltered folks are so significant and pressing for the Housing Stability System, that there is a team dedicated specifically to the unsheltered population, which is distinct but complimentary to the existing Street Outreach teams. The work of the Unsheltered Support Team has become vital and critical to the needs of what is reported as 43% of the homelessness population or, 1,009 individuals.

What is the experience of unsheltered homelessness in your community? How significant and pressing are the challenges for your Housing Stability System?

With all the data posted on my feed regarding PiT counts, it might be time to talk about how Housing First approaches can supercharge Housing and Homelessness systems.

Stay Tuned...

Data is reported from published Point in Time (PiT) Count numbers ONLY for larger Regional areas and Municipalities where there is a population of 500,000 people or greater AND where those Region's published their data breakdowns inclusive of "Unsheltered and in Encampments".

Population data from: StatsCan and PiT data from publicly reported 2024 Municipal PiT counts.

#homelessness, #housing, #pitcount, #unsheltered, #encampments, #waterlooregion, #toronto

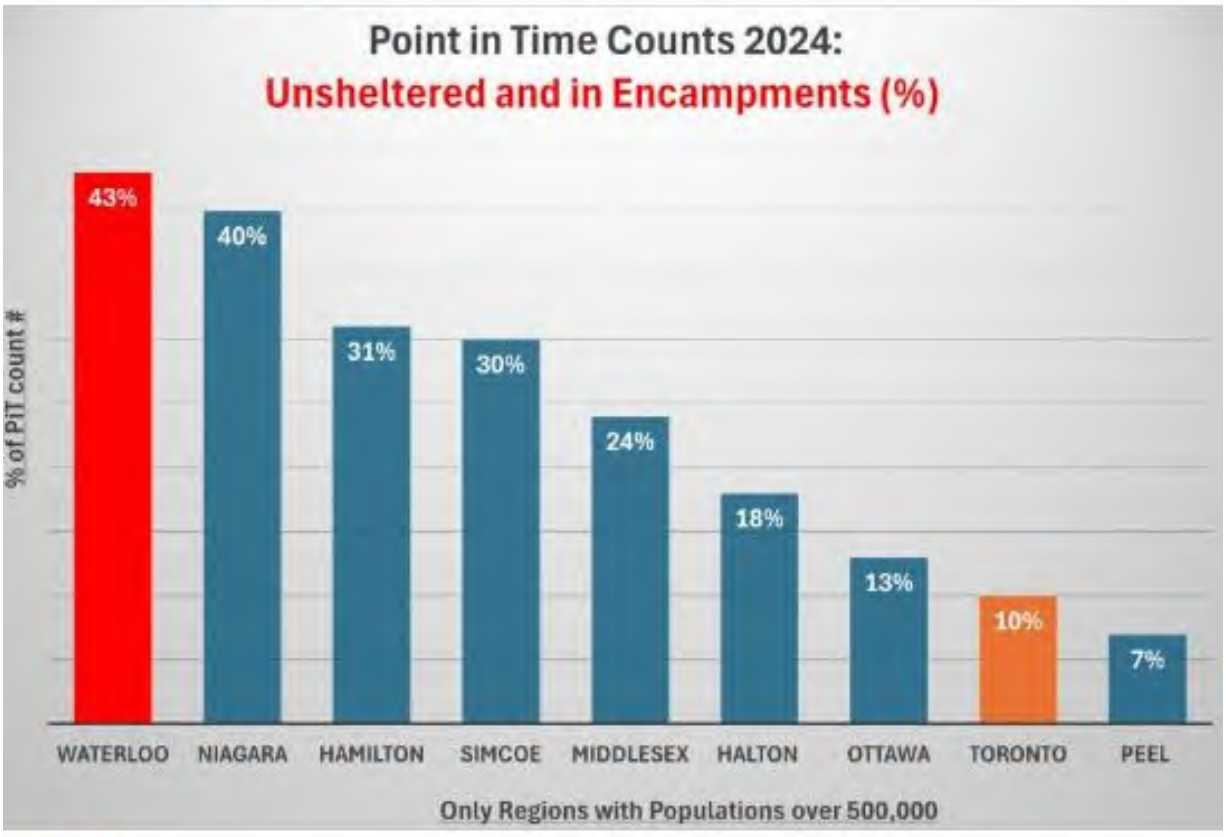

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EXHIBIT “B”

Region of Waterloo

Region to Provide Winter Warming Packages

Posted on Wednesday December 14, 2022 Subscribe

Waterloo Region – With colder temperatures approaching, the Region of Waterloo is partnering with The Working Centre to provide Winter Warming Packages for people experiencing unsheltered homelessness.

“Our first priority is always to connect individuals to safer indoor shelter spaces and support services,” said Councillor Jim Erb, Chair of the Community and Health Services Committee, Region of Waterloo. “Extreme winter weather conditions pose serious risks for those experiencing unsheltered homelessness. The Winter Warming Packages will provide cold weather supplies and a connection to support services as we continue work to transition people into housing.”

The Working Centre and other community partners are working hard to sign people up and order the supplies as quickly as possible. The limited number of packages will include winter clothing, a warm sleeping bag, an insulated sleeping pad, and other outdoor winter supplies. Packages will be given to individuals staying in encampments or living rough in Kitchener, Waterloo and Cambridge while supplies last.

“Responding to health and safety concerns, the Region hosted community partners exploring a plan to support people living outdoors during the winter months,” said Stephanie Mancini, co-founder of The Working Centre. “We have been working with Mountain Equipment Company, whose expertise is outdoor living to create the Winter Warming Packages. This is a combined effort to keep people as safe as possible, while we still work forwards on finding more indoor sheltering/housing options."

The Region recognizes the support of Mountain Equipment Company, the City of Kitchener and the Cambridge Food Bank for this project.

The Region has an extreme weather protocol. It provides support to emergency shelters and drop-in programs to adjust services and expand hours of operation during periods of extreme cold, adhering to health and safety processes and protocols, and depending on the program staffing ability.

Chat

460

The Interim Housing Solutions strategy is workin Chat ıallenge of unsheltered homelessness across Waterloo Regic isit,

engagewr.ca/interim-housing-solutions.

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Chat

Winter Warming Package

To help keep warmer while in encampments this winter, a package is being prepared.

Items available:

Artic Lantern

Artic Candles

Gloves

Toque

Tarps

Space Blankets

Bungee cords

Tuck Tape

Hand Warmers

Socks

Winter Boots

Long Johns

Please circle which of the above items that would be useful for you.

Please fill out the below form for sizing and requests for items not listed.

Your Name				
Encampment Location				
Contact Info				
Boot Size	Women's Size		Men's Size	
Glove Size	Small	Medium	Large	X-Large
Other Items requested				
Notes				

Court File No. CV-25-00000750-0000

THE REGIONAL MUNICIPALITY OF WATERLOO Applicant	-and-	PERSONS UNKNOWN AND TO BE ASCERTAINED Respondents

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JOINT TRANSCRIPT BRIEF (VOLUME 3 OF 5)

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