Court File No. CV-10-403688

ONTARIO
SUPERIOR COURT OF JUSTICE

B E T W E E N:

JENNIFER TANUDJAJA, JANICE ARSENAULT, ANSAR MAHMOOD, BRIAN DUBOURDIEU, CENTRE FOR EQUALITY RIGHTS IN ACCOMMODATION

Applicants

\- and -

HER MAJESTY THE QUEEN IN RIGHT OF CANADA, HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO, ATTORNEYGENERAL OF CANADA and ATTORNEY GENERAL OF ONTARIO

Respondents

APPLICATION UNDER Rule 14.05(3)(g.1) of the *Rules of Civil Procedure*, R.R.O. 1990, O. Reg. 194 and under the *Canadian Charter of Rights and Freedoms*

AFFIDAVIT OF STEPHEN HWANG

I, **DR. STEPHEN HWANG**, of the City of Toronto, in the Province of Ontario, **AFFIRM AS FOLLOWS**:

1. I am a staff physician at St. Michael's Hospital and the director of the Division of General Internal Medicine in the Department of Medicine at the University of Toronto. I am also a research scientist with the Centre for Research on Inner City Health at the Keenan Research Centre of the Li Ka Shing Knowledge Institute, St Michael's Hospital. My research focuses on understanding the relationship between homelessness, housing, and health through epidemiological studies, health services research, and longitudinal

cohort studies. I maintain expertise in those areas. I also maintain a clinical practice at Seaton House in Toronto, one of the largest homeless shelters in Canada.

2. I received my medical degree from John Hopkins University School of Medicine in Baltimore, Maryland in 1988 and obtained the degree of Master of Public Health from the Harvard School of Public Health in 1996. I have been on the faculty of the University of Toronto since 1996. My research into the relationship between homelessness, housing, and health has resulted in nearly a hundred peer-reviewed articles, abstracts and book chapters. I have lectured extensively on a broad range of topics relating to homelessness and health and have received numerous Canadian and international awards for my work, including the Canadian Institutes of Health Research New Investigator Award and the Career Scientist Award from the Ontario Ministry of Health and Long Term Care. I am frequently invited to speak on the subject of homelessness and health by various groups, including government agencies and ministries at the municipal, provincial and federal levels. A true copy of my curriculum vitae is attached as **Exhibit “A”** to this affidavit.

3. I have been asked to describe how homelessness and inadequate housing affect health, including the extent to which they create risks of various medical problems and increased mortality. I understand that my evidence will relate to the issue of how homelessness and inadequate housing affect a person’s life and security of the person, and also to the issue of what subgroups disproportionately experience homelessness and inadequate housing.

4. As detailed below, I have generally found that homelessness and inadequate housing have profound negative effects on health. The effects persist even after controlling for poverty, implying that lack of adequate housing in itself is a substantial risk factor for many medical problems and for increased mortality.

5. The facts and opinions contained in this affidavit are based on my own research and also on other reliable research in this area.

6. Terms such as “homeless”, “inadequately housed”, and “marginally housed” are terms that are defined slightly differently by different researchers in the area. Virtually all researchers would agree that the term “homeless” certainly includes all individuals who do not have a fixed, regular residence because they lack adequate alternative accommodation. Most such individuals live in emergency or transitional shelters or in places not intended for human habitation such as cars, parks, public spaces, abandoned buildings and bus and train stations. I generally use the term “marginally-housed” to refer to somewhat less disadvantaged individuals who live in low-cost collective dwellings such as YMCA/YWCA facilities, rooming houses and single-room occupancy hotels which have shared access to washroom facilities. In each of my studies concerning the health of homeless or marginally-housed people, I specify the criteria that were used in determining the group of people whose health is being studied.

A. THE SCIENTIFIC STANDARD OF PROOF

7. Homelessness is associated with a range of serious health risks and increased mortality. The task of scientific researchers is to isolate homelessness as the factor

responsible for this harm. The strongest evidence in the scientific field is a randomized, controlled trial. However, it is not possible to have such evidence in evaluating the relationship between homelessness and health, for a variety of practical and ethical reasons. We cannot take a group of people and randomize some to homelessness and others to housing, and then track their health and mortality over a period of time. Instead, we must look at those who are homeless and examine their health while accounting for other factors.

8. In 2002, I wrote an article entitled "Is Homelessness Hazardous to Your Health?" that described this challenge. A true copy of that article is attached to this affidavit as **Exhibit "B"**. From my experience as a clinician, I was aware of the damaging effects of homelessness on the health of my patients. In my research, I found that there was a growing body of evidence to show that adequate housing improved health. I argued that more research should be conducted to provide the kind of scientific evidence required by the scientific community to support this connection.

9. Over the past eight years, I and others have conducted further research, and more sophisticated data has now been obtained than was available at 2002. As described below, there is now good evidence to support a scientific finding that homelessness causes harm to health and increases the risk of death. This is consistent with both my clinical experience and with all of my scientific research.

B. HOMELESSNESS AND RISK OF DEATH

10. I am the co-principal author of a large, national cohort study into the mortality rates of homeless people in Canada. A copy of the study, entitled "Mortality among residents of shelters, rooming houses, and hotels in Canada: 11 year follow-up study", is attached to this affidavit as **Exhibit "C"**. For the purposes of our study, we included only those living in shelters, rooming houses, or hotels. We did not include homeless people sleeping on the street because they were not enumerated by the 1991 census which formed the basis for our analyses. However, previous studies have shown that individuals sleeping on the street have extremely high mortality rates, even higher than those of shelter residents.

11. In this study, we considered three different groups of people enumerated in the 1991 census: those living in shelters, hostels or missions ("**shelters**"), those living in YMCA/YWCA facilities, rooming and lodging houses ("**rooming houses**"), and those living in hotels, motels and tourist homes ("**hotels**"). Our study showed that all of these people have much higher mortality and shorter life expectancy than could be explained on the basis of low income alone. In order to exclude poverty as a factor, we compared mortality rates between these persons and those in the poorest fifth of the population, in addition to a comparison with the general population.

12. The study showed that the probability that a 25-year-old man living in shelters, rooming houses, or hotels would survive to age 75 was only 32%. This is compared with 51% for men in the lowest income fifth of the population, and 64% in the general population.

13. Amongst women, the study found that 60% would survive to 75, compared with 72% of women in the lowest income fifth, and 79% in the entire cohort.

14. For men, remaining life expectancy in the combined shelter, rooming house, and hotel category was 10 years lower than in the entire population, 13 years lower than in the richest income 5th, and 6 years lower than in the lowest income 5th. For men in the subcategory of shelters, remaining life expectancy was another 3 years lower than for the combined category.

15. For women, remaining life expectancy in the combined shelter, rooming house, and hotel category was 7 years lower than in the entire population, 9 years lower than in the richest income 5th, and 5 years lower than in the poorest income 5th. For women in the subcategory of rooming houses, remaining life expectancy was another 3 years lower than for the combined category.

16. Compared with the entire population, life expectancy was shorter by 13 years for men and 8 years for women living in shelters; 11 and 9 years, respectively, for those living in rooming houses; and 8 and 5 years, respectively, for those living in hotels.

17. A large part of the premature mortality in people living in shelters, rooming houses, and hotels was potentially avoidable. Many excess deaths were related to mental disorders and suicides. Other research suggests that expanding the implementation of recent innovations in supportive housing programmes for people with addictions and mental illness could be instrumental in reducing the number of excess deaths.

C. HOMELESSNESS AND HEALTH

18. The following is an overview of some of the health concerns facing homeless people. Copies of some of my publications on these issues are attached as the following Exhibits to this affidavit; **Exhibit "D"**, "Handbook of Urban Health Populations, Methods and Practice"; **Exhibit "E"**, "Homeless People's Trust and Interactions With Police and Paramedics"; **Exhibit "F"**, "Homeless People's Perceptions of Welcomeness and Unwelcomeness in Healthcare Encounters"; **Exhibit "G"**, "Drug problems among homeless individuals in Toronto, Canada: prevalence, drugs of choice, and relation to health status"; **Exhibit "H"**, "Homelessness and Health in Canada".

19. I have relied on the information contained in these above-listed publications (which includes data referenced in these publications from studies by others) and on my personal knowledge for the facts and opinions expressed below. In this section of my affidavit, I generally use the word "homeless" to refer to people who live in emergency or transitional shelters or in places not intended for human habitation such as cars, parks, public spaces, abandoned buildings and bus and train stations.

i) Tuberculosis

20. Homeless people are at increased risk of contracting tuberculosis ("**TB**"). Conditions favouring TB outbreaks in shelters include crowding, large transient populations, and inadequate ventilation. More than half of all TB cases among homeless people represent clusters of primary tuberculosis rather than reactivation of old disease.

The incidence of active TB among homeless people in Toronto is 71 per 100,000 – about 10 times the average Ontario rate.

ii) Violence and Injury

21. Homeless people experience high rates of injury of all types and are frequently victims of assault. A survey in Toronto found that 40% of homeless individuals had been assaulted and 21% of homeless women had been raped in the previous year. Homeless men are about 9 times more likely to be murdered than their counterparts in the general population.

22. Unintentional injuries are a leading cause of morbidity and mortality, especially among homeless men. Injuries are often the result of falls or being struck by a motor vehicle.

iii) Exposure to the Elements

23. Exposure to the elements is a major hazard for the homeless. In hot weather, severe sunburn and heatstroke can occur. In cold weather, the risk of frostbite and hypothermia is substantial. Homeless people are at a particularly high risk of death from hypothermia, and half of all such deaths occur when the air temperature is above freezing. Recent research has shown that exposure to the cold also increases the risk of developing respiratory tract infections, which are a major health problem among people experiencing homelessness.

iv) Bed Bugs

24. Bed bug infestations can have an adverse effect on health and quality of life, particularly among homeless persons living in shelters. In one study, my fellow researchers and I contacted all 65 homeless shelters in Toronto and found that 20 (31%) shelters reported previous or current bed bug infestations. Our data suggest that bed bugs can spread from shelter to shelter, presumably transported in the personal belongings of residents. Given the constant turnover of shelter residents, bed bugs could potentially affect a large number of homeless people over the course of a year.

25. The clinical manifestations of bed bugs can include small clusters of extremely pruritic, erythematous papules or wheals that represent repeated feeding by a single bed bug as well as, less common but more severe, grouped vesicles, giant urticaria, and hemorrhagic bullous eruptions. In my clinical experience and that of my colleagues, homeless persons with bed bug bites suffer a substantial degree of emotional distress.

26. Attached to this affidavit as **Exhibit "I"** is an article entitled "Bed Bug Infestations in an Urban Environment" that I co-authored that is specifically about the problem of bedbugs in shelters.

v) Skin and Foot problems

27. Skin and foot problems are frequently seen among the homeless. People living on the street are particularly prone to develop skin diseases such as cellulitis, impetigo, venous stasis disease, scabies and body lice. Foot disorders such as onychomycosis, tinea pedis, corns and callouses, and immersion foot are usually the result of inadequate

footwear, prolonged exposure to moisture, long periods of walking and standing, and repetitive minor trauma.

28. Prolonged exposure to cold and dampness increases the risk of skin breakdown and skin infections, particularly in the feet. In homeless people, exposure of the feet to wet and cold conditions can lead to immersion foot or trench foot, a serious condition that was first described among soldiers serving in the trenches during World War I.

vi) Sleep

29. Homeless people often suffer from sleep deprivation due to an inadequate number of hours of sleep and to disturbed or fragmented sleep. For homeless people sleeping outside, sleep fragmentation is often related to external stimuli, such as bright lights, loud noises, and intentional efforts by other people to awaken or disturb them. A large body of research evidence has shown that sleep deprivation has numerous adverse health effects, including increased risks of diabetes, cardiovascular disease, obesity, depression, and injuries, in addition to the more commonly recognized problems of impaired alertness, attention, and concentration.

vii) Homeless Immigrants

30. I co-authored a study examining the association between immigrant status and health amongst the homeless. The study looked at a representative sample of 1189 homeless people in Toronto and the findings were published in the Journal of

Epidemiology and Community Health in August 2009. The study is attached as **Exhibit "J"** to this affidavit.

31. For this study, we defined homelessness as living within the last seven days at a shelter, public place, vehicle, abandoned building or someone else's home, and not having a home of one's own. Based on a pilot study, we determined that about 90% of homeless people in Toronto slept at shelters, and that 10% did not use shelters but used meal programs. We therefore recruited 90% of our study participants at shelters and 10% at meal programs.

32. We considered the subgroups of recent immigrants, non-recent immigrants, and Canadian-born individuals. We defined "recent immigrants" as those people who had moved to Canada at most ten years ago. We found recent immigrants to be a distinct group amongst the homeless in terms of their health status and healthcare needs. Recent immigrants were significantly less likely to have chronic conditions, mental health problems, alcohol problems and drug problems than non-recent immigrants and Canadian-born individuals. Recent immigrants were also generally healthier in terms of both mental and physical health status. In particular, prevalence of mental health problems was 23% among recent immigrants, 35% among non-recent immigrants, and 40% among Canadian born individuals.

33. Moreover, we found that the length of time since immigration is a critical factor. The health status of homeless individuals who immigrated more than 10 years ago was not significantly different from that of homeless non-immigrants.

34. In addition to these findings, we also noted a number of demographic findings. Nearly one third of Toronto's homeless are immigrants. Also, homeless immigrants were more likely to be female, accompanied by dependent children, married and to have non-Caucasian racial status. Recent immigrants were also more highly educated and had a somewhat shorter duration of homelessness.

35. There are limitations to this study that one should bear in mind:

- Refugees and refugee claimants were excluded from the study, and previous research has found that refugees generally have poorer physical and mental health than other immigrants because of their experiences prior to arrival and the less stringent screening process which they undergo.37 38 Thus, our study's findings should not be generalized to homeless refugees;
- Our findings may not be generalizable to undocumented immigrants, who constitute a very small proportion of immigrants in Canada and who were also excluded from this study; and,
- Homeless people who were unable to communicate in English were not enrolled in this study; however, these individuals accounted for only 4% of those screened for eligibility.

viii) Homelessness and Mental Illness

36. The prevalence of mental illness and substance abuse is much higher among homeless adults than among the general population.

37. Contrary to popular misconceptions, only a small proportion of the homeless population suffers from schizophrenia; the lifetime prevalence of schizophrenia is about

6% among Toronto's homeless. Affective disorders are more common, with lifetime prevalence rates of between 20% and 40%. Alcohol use disorders are widespread, with lifetime prevalence rates of about 60% among homeless men. Patterns of substance abuse and mental illness vary across subgroups of homeless people; single women are more likely to have mental illness and less likely to have substance use disorders than single men. Female heads of homeless families have far lower rates of both substance abuse and mental illness than other homeless people.

ix) Homelessness, the Vulnerably Housed, and Health

38. I am the principal author of "Housing Vulnerability and Health: Canada's Hidden Emergency", a report on the Research Alliance for Canadian Homelessness, Housing and Health (the "**REACH3**") Health and Housing in Transition Study (the "**HHiT**"), published in November 2010. REACH3 is a national, interdisciplinary alliance of research partners that share a commitment to research that improves the health of Canadians experiencing housing vulnerability and homelessness. A copy of the report is attached and marked as **Exhibit "K"**.

39. The HHiT is a longitudinal study of the health of 1,200 vulnerably housed and homeless adults in Vancouver, Toronto and Ottawa. Two hundred vulnerably housed adults and two hundred homeless adults from each city were recruited for the study.

40. We used the 2009 Shelter Capacity Report data on Canada's shelter bed capacity to estimate how many people may be homeless on any given night in Canada. This report is attached and marked as **Exhibit "L"**. However, it is important to note that shelter

counts do not include people who are sleeping on the street or couch surfing. The total number of homeless people in Canada is unknown.

41. We used Canada Mortgage and Housing Corporation data on low and moderate income renters who spent more than 50% of their income on rent to estimate how many people are vulnerably housed across Canada. When housing costs more than 50% of a low household income, tenants do not have enough money left over to meet basic needs like paying for food, clothing and medication. See the CMHC report attached and marked as **Exhibit "M"**.

42. In the study we defined a "vulnerably housed" person as someone who has living accommodations but has either been homeless or has moved at least twice over a twelve month period. "Homelessness" is defined as living in a shelter, on the street, or in other places not intended for human habitation. "Homelessness" also includes "couch surfing", or staying temporarily with family or friends.

43. We found that people who are vulnerably housed face the same severe health problems as people who are homeless. As a result, the number of people experiencing the devastating health outcomes associated with inadequate housing is potentially staggering. While across Canada there are about 17,000 shelter beds available on a regular basis, there are almost 400,000 people who are vulnerably housed. In other words, for every one person sleeping in a shelter, there are 23 more living with housing vulnerability.

44. Specifically we found that people who are homeless and vulnerably housed:

- Face the same severe health problems and danger of assault;

- Are at high risk of serious mental health problems;
- Have trouble getting enough to eat (33%);
- Are often unable to access the health care they need (40%); and/or,
- Often end up hospitalized or in the emergency department: 55% visited a hospital emergency department in the last year and 25% were hospitalized at least once over night.

45. The study confirmed earlier studies connecting devastating health outcomes with homelessness or inadequate housing. A consequence of the health problems and barriers to health care shared by people who are homeless and/or vulnerably housed is that they die much earlier than those who live in adequate and stable housing.

46. The results of the study showed that in many ways, the division between the two groups is false. The people we identified as "vulnerably housed" were not just at risk of homelessness; in the past two years they had spent almost as much time homeless (just under 5 months per year) as the homeless group did (6.5 months per year). Instead of two distinct groups, this is one large, severely disadvantaged group that transitions between the two housing states.

D. CONCLUSION

47. Living outdoors or in shelters, rooming houses or hotels significantly lowers life expectancy. People who become homeless often have physical and mental health problems which worsen over the period that they are homeless. This deterioration in health is related to numerous factors, including a lack of stable housing, an adverse social

environment, the near impossibility of maintaining health-promoting behaviors in the face of homelessness, and barriers to accessing appropriate health care. The state of being homeless also has direct adverse effects on health through increased exposure to infections and communicable diseases (e.g., tuberculosis and insect infestations such as bed bugs and scabies) and an increased risk of violence and victimization while living in shelters and on the street. For those living outside, exposure to the elements can lead to a number of serious and potentially life-threatening conditions. Homeless people are at risk of severe sunburn and heatstroke during the summer months. During cold weather, frostbite and hypothermia are major problems.

48. My acknowledgement of my duty to the Court on Form 53 is attached as **Exhibit "N"** to this affidavit.

49. I affirm this affidavit in order to provide evidence on the application herein and for no other or improper purpose.

AFFIRMED BEFORE ME at	)	
	)	
the City of Toronto, this day	)	______________________________
	)	**STEPHEN HWANG**
of , 2011	)	
	)	

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Harry Yeon Cho
A Commissioner, etc.

JENNIFER TANUDJAJA, *et al.* - and - **HER MAJESTY THE QUEEN IN RIGHT OF CANADA, *et al.***
Applicants Respondents

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Proceeding commenced at Toronto

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