



CCPA

CANADIAN CENTRE
for POLICY ALTERNATIVES
CENTRE CANADIEN
de POLITIQUES ALTERNATIVES

What Happens When the Bed Bugs *Do* Bite? The Social Impacts of a Bed Bug Infestation on Winnipeg's Inner-City Residents

Elizabeth Comack and James Lyons

About the Authors

Elizabeth Comack is a Professor of Sociology at the University of Manitoba and a Research Associate with the Canadian Centre for Policy Alternatives–Manitoba (CCPA-MB).

James Lyons holds a Master's degree in Sociology from the University of Manitoba.

Acknowledgements

Funding to support this research was provided by a Social Sciences and Humanities Research Council (SSHRC) Community-University Research Alliance (CURA) grant to the Canadian Centre for Policy Alternatives–Manitoba (CCPA-MB) for a project entitled “Transforming Aboriginal and Inner-city Communities.” The authors would like to thank Pat Macklem

(who was the Rental Safety Co-ordinator at the Spence Neighbourhood Association when the project was being conducted) for his invaluable assistance. The report has also benefited from the helpful feedback of two anonymous reviewers. We are especially grateful to the people who took the time to meet with us and participate in this study.



Manitoba Research Alliance

Transforming Inner-city &
Aboriginal Communities



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada

*This report is available free of charge from the CCPA website at <http://www.policyalternatives.ca>.
Printed copies may be ordered through the Manitoba Office for a \$10 fee.*

What Happens When the Bed Bugs Do Bite?

The Social Impacts of a Bed Bug Infestation on Winnipeg's Inner-City Residents¹

The Report in Brief

Bed bugs (*Cimex lectularius*) are making an international comeback, to the point where a global “bed bug pandemic” is being predicted. The City of Winnipeg has not been exempted from this scourge, with one local extermination company reporting 2,800 bed bug calls in 2010, compared with only a handful of calls in the previous six years.

To its credit, the Government of Manitoba has recently announced a plan for responding to the bed bug problem. The plan includes a bed bug phone line that will offer information and track infestations, grants to community-based organizations to support their education and prevention efforts, the provision of bed bug prevention materials, a public education campaign focusing on prevention and eradication, and establishing a multi-stakeholder committee.

Nevertheless, how a problem like bed bugs is framed will inform the steps taken to resolve it. Because bed bugs have not yet been proven to transmit disease, they are often classified simply as a ‘nuisance’ or a ‘pest.’ As a result, there is resistance to framing the problem of bed bugs as a public health threat. By adopting a Social Determinants of Health approach—which focuses on the social and economic conditions that contour the health of a population—we make the case that bed bugs *do* constitute a public health hazard and

that policies and practices aimed at addressing the problem of bed bugs need to be framed within this context.

Contrary to the prevailing misconception that cleanliness and personal hygiene are the cause of infestations, bed bugs do not discriminate. They are attracted to a human host by a combination of body temperature and carbon dioxide. While *anyone* can be at risk of a bed bug infestation, the social impacts of bed bugs can be especially devastating for people on low incomes. Reliance on second-hand furniture and clothing, lack of access to affordable, quality housing, and lack of control over the maintenance of rental units make low-income residents vulnerable to infestations. Once infested, the costs associated with treatment (laundering, vacuuming, replacing mattresses and furniture) can be overwhelming for those with limited financial resources. When the prevailing social stigma that bed bug sufferers encounter is added into the mix, the result is stress, anxiety, sleeplessness, and social isolation—all of which compromise people’s health and well being.

In order to explore the social impacts of a bed bug infestation on inner-city residents, we draw upon interviews conducted with 16 residents, 5 workers at inner-city agencies, 3 landlords, and 2 public health inspectors. The stories told by residents testify to the dev-

1. While the title of this report is based on a line in the children’s bedtime rhyme, “Don’t let the bed bugs bite,” it should be noted that bed bugs don’t actually bite but rather feed on their host.

astating impact that dealing with a bed bug infestation has had on their daily lives, their social relationships, their identity, and their physical and mental health. Informed by the interview data as well as the approach taken by the City of Toronto in its struggle with the bed bug problem, we map out strategies that should be included in a comprehensive bed bug plan for the City of Winnipeg.

Using the Social Determinants of Health approach to frame the problem of bed bugs as a threat to public health—as opposed to simply a ‘nuisance’ or a ‘pest’—offers a holistic way of dealing with this issue. Not only are the negative health outcomes that can result from the experience of dealing with an infestation acknowledged, but so too are the social determinants of the problem.

What Happens When the Bed Bugs Do Bite?

The Social Impacts of a Bed Bug Infestation on Winnipeg's Inner-City Residents

Elizabeth Comack and James Lyons

The thought of being fed on in the night by tiny, blood-sucking creatures is enough to make anyone cringe. But bed bugs (*Cimex lectularius*) are making an international comeback—to the point where a global “bed bug pandemic” is predicted (Lederman & Morrow, 2010). The increase in international travel, modern heating and air conditioning systems that provide more stable environments for the bugs to flourish, the banning of chemicals such as DDT, and greater resistance to chemicals being used have meant that hotel rooms, apartments, houses, dormitories, libraries, stores, and movie theatres are all now sites of bed bug infestations. The City of Winnipeg has not been exempted from this scourge. One local extermination company has reported that it received 2,800 bed bug calls in 2010, compared with only a handful of calls in the previous six years (Owen, 2010).

The government of Manitoba has recently announced a plan for responding to the bed bug problem. In making the announcement, Manitoba Healthy Living Minister Jim Rondeau compared bed bug infestations to the common cold: “You could catch a cold by going outside today, but that doesn’t stop you from going outside. But when you do catch your cold and get your sniffles, you take vitamin C and get more rest. Bedbugs are no different from the common cold” (Borkowsky, 2011). The Minister was also quoted as saying that bed bugs are “not exclusive to one area or group of people. Everyone in our communities will have a role to play in finding affordable solutions” (Borkowsky, 2011).

While the government’s announcement has been well received by Manitobans, the Minister’s comments should give us pause to reflect on how this problem is being framed, since how we frame a problem like bed bugs will inform the steps taken to resolve it. On the one hand, the Minister’s comment that bed bugs “are not exclusive to one area or group of people” addresses one of the misconceptions that prevails regarding bed bugs; that is, that cleanliness and personal hygiene are the cause of infestations. This misconception has led to negative stereotyping and social stigma for those unfortunate enough to experience bed bugs. However, bed bugs do not discriminate. They are attracted to a human host by a combination of body temperature and carbon dioxide, meaning that *anyone* can be at risk of a bed bug infestation. By suggesting that “bed bugs are no different from the common cold,” the Minister further reinforces the normality of the experience, since succumbing to the common cold is something that everyone can relate to. At the same time, however, his comment inadvertently raises the issue of whether bed bugs constitute a threat to public health. Because bed bugs have not yet been proven to transmit disease,² they are often classified simply as a ‘nuisance’ or a ‘pest.’ As a result, there is resistance to framing the problem of bed bugs as a public health threat.

The Manitoba *Public Health Act* defines a health hazard as “(a) a condition of place or premises; (b) a plant, animal or other organism; (c) a substance or thing; (d) a solid, liquid or gas, or any combination of them; or (e) an

2. A recent report suggests that bed bugs have been found to carry antibiotic-resistant bacteria (Stobbe, 2011).

activity, condition or process; that presents or might present a threat to public health.” By adopting a Social Determinants of Health approach (Marmot & Wilkinson, 2006; Raphael, 2001 & 2009), with its focus on the social and economic conditions that contour the health of a population, we make the case that bed bugs *do* constitute a public health hazard and that policies and practices aimed at addressing the problem of bed bugs need to be framed in this context. While anyone can be at risk of experiencing a bed bug infestation, the social impacts of bed bugs can be especially devastating for people on low incomes. Reliance on second-hand furniture and clothing, lack of access to affordable, quality housing, and lack of control over the maintenance of rental units make low-income residents especially vulnerable to infestations. Once infested, the costs associated with treatment (laundering, vacuuming, replacing mattresses and furniture) can be overwhelming for those with limited financial resources. When the prevailing social stigma that bed bug sufferers encounter is added into the mix, the result is stress, anxiety, sleeplessness, and social isolation—all of which compromise people’s health and well being. Framing the problem of bed bugs as a threat to public health—as opposed to simply a ‘nuisance’ or a ‘pest’—not only acknowledges the negative health outcomes that can result from the experience of dealing with an infestation, it calls attention to the social determinants of the problem and legitimates the need for concerted and co-ordinated action to address it.

In order to explore the social impacts of a bed bug infestation, we conducted interviews in the winter of 2009 with 16 inner-city residents,

5 workers at inner-city agencies, 3 landlords, and 2 public health inspectors.³ In the discussion which follows we present the results of this study. We begin by describing the Social Determinants of Health approach in more detail. We then relate some of the stories told to us by inner-city residents that testify to the devastating impact that dealing with a bed bug infestation has had on their daily lives, their social relationships, their identity, and their physical and mental health. Finally, drawing on the interview data, as well as the approach taken by the City of Toronto in its struggle with the bed bug problem, we map out strategies that should be included in a comprehensive bed bug plan for the City of Winnipeg.

The Social Determinants of Health Approach

In contrast to the traditional approach to health, which focuses primarily on biomedical and behavioural risk factors (such as cholesterol levels, body weight, physical activity, diet, and tobacco and alcohol use), the Social Determinants of Health (SDH) approach focuses on “the social and economic factors that shape the health and incidence of illness among individuals and groups of individuals” (Raphael, 2010, p. 10). Social determinants of health are about the quantity and quality of a variety of resources that a society makes available to its members. SDH researchers have focused attention on the ways in which social determinants such as income, access to education, employment security, working conditions, early childhood development, food security, housing, and the experience of social exclusion produce health inequalities in

3. Inner-city residents were recruited for this study through advertising and word of mouth. Posters were also placed in various inner-city community centres to advertise the study. All of the interviews were digitally recorded and later transcribed. The transcriptions were then analysed with a view to determining the main themes regarding the social impacts of a bed bug infestation, particularly the social, economic, and human health costs associated with an infestation, as well as strategies for combating the problem. Pseudonyms have been used in the reporting of the findings to respect the confidentiality of the participants.

a population (Galabuzi, 2009; Raphael, 2010). In short, these researchers maintain that it is the standards of our living conditions—as opposed to simply unhealthy lifestyle choices or individual risk factors—that primarily determine the health of individuals, communities, and societies.

While higher levels of social inequality will produce poorer health outcomes for everyone in a society, those who are economically marginalized will be most at risk (Marmot, 2006; Raphael, 2001). Access to affordable housing, for instance, is a risk condition that impacts on people's ability to lead a healthy life. As Toba Bryant (2003, p. 54) explains, "housing costs are critical because they are one of the largest monthly expenditures most people face. When housing costs eat up the majority of a person's income, it affects other aspects of their lives." As well, access to quality housing not only provides a basis for self-identity and self-expression (Raphael, 2010, p. 89), it also means that people can avoid exposure to unhealthy environmental factors such as mould, dampness, pest infestations, overcrowding, and neighbourhood crime and violence (Dunn, 2000; Shaw, 2004).

Social exclusion is also an important determinant of health. As Grace-Edward Galabuzi (2009, p. 253) notes, "social exclusion is used to broadly describe the structures and the dynamic processes of inequality among groups in society, which, over time, structure access to critical resources that determine the quality of membership in society and ultimately produce and reproduce unequal outcomes. Groups in society experiencing some form of social exclusion tend to have poorer health status and sustain higher health risks." In the Canadian context, "social exclusion defines the inability of certain subgroups to participate fully in Canadian life due to structural inequalities in access to social, economic, political, and cultural resources arising out of the

often intersecting experiences of oppression relating to race, class, gender, disability, sexual orientation, immigrant status, and the like" (Galabuzi, 2009, p. 254). Social exclusion is not only centred around socio-economic and political inequalities; it is "also characterized by processes of group or individual isolation within and from Canadian societal institutions such as the school system, criminal justice system, health care system, as well as spatial isolation or neighbourhood segregation" (Galabuzi, 2009, p. 254).

Poverty is both a product and a cause of social exclusion. In the Winnipeg context, poverty is spatially concentrated in the inner city, where the poverty rate in 2006 was 39.6 percent, compared with 20.2 percent for the city as a whole (MacKinnon, 2009). This poverty is also racialized, as Aboriginal people are especially vulnerable. While Aboriginal people make up approximately 10 percent of Winnipeg's population, they constitute 25 percent of those living in poverty (MacKinnon, 2009, p. 30). As Galabuzi (2009, p. 252) notes, the negative health outcomes of racialized poverty are not only connected to material deprivation, the psychological effects of social exclusion also play a key role as "racialized community members ... experience the psychosocial stress of discrimination and racism, which contribute to such health problems as hypertension, mental health, and behavioural problems such as substance abuse."

Other SDH researchers have elaborated on the negative health outcomes that are produced by social exclusion and impoverished material conditions. As Dennis Raphael (2010, p. 35-36) reports, "accumulating evidence shows that individuals who experience constantly difficult or stressful living circumstances come to have maladaptive responses to stress, a weakened immunity to infections and disease, and a greater likelihood of metabolic disorders." Eric Brunner and Michael Marmot (2006) argue that

social inequalities create psychological consequences that can seriously damage health in the long term. “Chronic anxiety, insecurity, low self-esteem, social isolation, and lack of control over home and work weaken mental and physical health. The human body has evolved to react to emergencies. This reaction triggers a whole range of stress hormones that affect the cardiovascular and immune systems” (Bryant, 2009, p. 243). If this biological stress-reaction system is triggered too often and for too long, as it often is for people living in impoverished circumstances, it can produce considerable health damage.

While SDH researchers have drawn attention to a host of factors that affect people’s quality of life and thereby compromise their health, to date little attention has been devoted to the social impacts of a bed bug infestation on people’s health and well being. It is time, therefore, that we brought bed bugs into the picture.

Bringing Bed Bugs into the Picture

Much like other health-related factors singled out in the SDH literature, the social impacts of a bed bug infestation can differ depending upon people’s social and economic circumstances. While anyone can encounter bed bugs in their travels, in a variety of public spaces, and in their homes, the problem of bed bugs does not affect all people equally.

The condition of living accommodations is one factor that puts some people at greater risk of an infestation. In Winnipeg’s inner-city communities, much of the housing stock is in need of repair (Skelton et al., 2007, p. 55). Cracks in walls, loose floorboards, and other flaws in older infrastructure provide harbourage for the bugs to flourish. Those who rent their accommodation—as is the case for 61 percent of inner-city residents (MacKinnon, 2009)—are

therefore reliant on landlords to ensure that buildings are properly maintained.

In Manitoba the primary legislation that governs the relationship between landlords and tenants is *Residential Tenancies Act*. The province’s Residential Tenancies Branch (RTB) is responsible for administering the act and has the power to mediate and make rulings on disputes that arise between landlords and tenants (including issuing an order to the landlord to remedy a problem and terminating tenants’ rental agreements if they do not comply with their obligations). Under the *Residential Tenancies Act* (Section 4 Subsection 4.7), landlords are responsible for the extermination and elimination of a pest infestation without reasonable delay and to make any necessary repairs to prevent pests from getting into a unit or complex. Tenants, on the other hand, are obligated to notify the landlord of a pest problem and to cooperate in the treatment process. If either party does not live up to its obligations, the RTB can take action. For instance, landlords who do not respond to a bed bug complaint can be ordered to do so. If tenants have to get rid of personal property because of bed bugs and it can be shown that this was the result of the landlord’s negligence in treating the problem, the landlord may be responsible for the tenant’s financial loss. If tenants do not co-operate and further extermination treatments are required as a result, the landlord can file a claim against the tenant for the extra costs.

Bed bugs are extremely difficult to treat as they “shelter in a variety of dark locations, mostly close to where people sleep. These include under mattresses, floorboards, paintings, and carpets, behind skirting, in various cracks and crevices of walls, within bed frames and other furniture, and behind loose wallpaper” (Doggett et al., 2004, p. 35). As such, the treatment required when bed bugs are detected in a dwelling is a laborious—and stress-produc-

ing—process. During the treatment process, all furniture and belongings where the bugs can hide must be inspected for signs of an infestation, and then either steam cleaned or wrapped in plastic and then discarded. All bedding, clothing, and any other washable fabrics must be transported in plastic bags and then placed in a dryer for at least twenty minutes on high temperature. All areas of the dwelling must be vacuumed thoroughly, and the vacuum bag double wrapped and discarded after use. The economic costs that stem from infestations include cleaning supplies, mattress covers and other bed bug prevention supplies, and staying at alternate locations while extermination is underway (Bonney et al., 2008; Woodgreen, 2008). While these costs can be a financial burden for most people, they can be overwhelming for individuals and families on a restricted budget. As well, the social stigma associated with having bed bugs can cause “intense feelings of shame (often leading victims to isolate themselves from others), anxiety, stress, and insomnia” (Brody, 2008, p. 1).

Learning from Inner-City Residents

The stories told by inner-city residents provide compelling accounts of the social impacts that a bed bug infestation has had on their lives. For the inner-city residents we interviewed, bed bugs were one more trouble that they had to deal with in an already difficult and complicated life. In combination, experiences of racialized poverty and social exclusion—including inadequate housing and limited financial resources—and the social stigma attached to bed bug sufferers set the stage for increased stress, anxiety, and sleeplessness for those dealing with an infestation. The net effect of a bed bug infestation was to compromise people’s already precarious physical and mental health.

Margaret’s Story

Margaret is an Aboriginal woman in her fifties who moved from Northern Manitoba to Winnipeg in 2005 with her two young grandchildren. She moved to the city to be close to the hospital as one of her grandchildren had a health condition that required frequent medical attention. While Margaret had worked a variety of jobs back home, she was relying on social assistance at the time of the interview. Having few supports in Winnipeg and a limited income, she was on her own raising two small children.

Margaret has had very little success with housing in Winnipeg; she has lived in three apartments since moving to the city, all in significant states of disrepair. She moved from her first apartment because it was badly infested with mice. As Margaret explained, “My cupboard was just like a barn.” Her second apartment was where she encountered bed bugs. This apartment was also in very poor condition, but she was desperate to find more liveable accommodation. When she first moved in the unit was not clean, and the fridge was full of mould. Her new landlord took advantage of her desperate circumstances, paying Margaret \$150 out of her own damage deposit to do the cleaning herself.

Soon after moving into the apartment, Margaret discovered small bites on the body of her youngest grandson, which she initially thought were mosquito bites. “The landlord came in and then he said he had a screen. There were no screens in there. And then he said, ‘Are you sure those are mosquito bites?’ ... I said, ‘Okay, what are you talking about? Are you trying to tell me that there’s bed bugs here?’” It was at this point that the landlord informed Margaret that the apartment block was infested with bed bugs. Shortly after that Margaret started seeing bed bugs throughout the apartment at night and noticing bites on herself as well as her grandchildren. She had

itchy reactions to the bites—which she described as comparable to a cigarette burn—that have left her with permanent scars.

Unfortunately, Margaret's landlord was uncooperative in dealing with the situation. Instead of calling an exterminator, he gave her a can of *Raid* to spray around the apartment (which only makes the bugs disperse). When Margaret contacted the Health Department to complain, her landlord responded by becoming very confrontational and calling her a "troublemaker." Margaret's concern for her grandchildren's health, coupled with her own personal fears (her landlord was rumoured to have a history of violence towards women), made her decide that the best course of action was to move.

Margaret then sought the help of a counsellor, who immediately phoned her social assistance worker. She was given \$300 to replace all of her beds, and was told to go to the Salvation Army for more clothes. When Margaret moved out of the infested apartment, the family left all of their possessions behind, including their furniture and beds, bringing with them only the clothes on their back. As she explained:

I lost everything in there. I didn't want to take nothing because it was too much, eh, too much stress, frustration, anger. Because now I just moved in there and I lost all my money in there.

Being on a limited budget, Margaret was forced to buy replacement furniture and bedding second hand. Because social assistance gave her very little money, she was not able to replace everything she had lost. She also had to spend her own money to launder all of the second-hand clothing she purchased out of fear of bringing bed bugs into her new apartment. She was unable to afford adequate beds for herself and the children, which made sleeping arrangements difficult:

My grandson and me, my little one, we

slept on a single bed, just one part, box spring. That's what we slept on. And my eight-year-old one, he had only two pillows and a comforter. That's how we moved into that other place. ... When you lose something like that it's really, really bad and then when you have good beds and then you go and sleep on welfare beds, like, springs and that.

Margaret estimates that bed bugs cost her around \$2,000. Clothes and bedding were not the only items left behind in escaping from the bed bugs. She lost other important items such as her old photo albums, volunteer certificates, and her grandchildren's school certificates. To make matters worse, when she returned to her old apartment to retrieve some of her belongings, Margaret was confronted by her landlord:

My grandson said, 'Look, he's wearing your shoes.' And I saw him wearing them, and he came, you know, 'What the hell,' I said, 'I didn't even give you my notice or anything. I still have my key and this place is paid for 'til the end of the month.' And he said 'You want your stuff? You can't go in there. You're not allowed to go in there. That's not your place anymore.' And then he went running into his apartment, you know, and he came out with one of my baskets, and he just slid it out, threw it out in the hallway at us. And then he had my stuff in his apartment, lots of stuff already. I said, 'You can have them all.'

The apartment Margaret is living in now is not much better. The sink leaks, the bath fixtures are broken, and the windows leak. When asked about her new landlord she replied: "The only problem that I have in there is he doesn't fix anything. ... And it's almost been two years. I told him and I quit bothering him." Although the apartment she currently lives in has problems, Margaret is happier because at least there are no mice or bed bugs.

The experience of dealing with bed bugs had a major impact on Margaret's health and personal well being. Sleeplessness was one factor:

It's so hard to deal with them, like, it's so hard, too hard to live in a place where there's bed bugs because you can't sleep at night. And then it's hard for you to sleep when you have to leave the lights on at night.

Stress was another factor. Given that she was caring for a sick grandchild, dealing with bed bugs made an already stressful situation much worse for Margaret. As she remarked:

I had to go back and forth to the hospitals. My head was just going and then, like, those mice and bed bugs could have given me a nervous breakdown because, like, still today I can't sleep right.

Margaret was also aware of the impact that the bed bugs have had on her sense of self: "I felt really, really dirty because of those bites all over." Her way of coping with this impact was to attend sharing circles where she could talk about her experience: "At first I was ashamed but after it was all over, it's better to come out in the open, and talk about it to other people." Reflecting on her experience, Margaret wishes she could have taken action against her landlord, but it was just too difficult with two young children to look after; "it's hard to take kids around when they're small." She also commented:

They are very hard to deal with these landlords, and especially when you don't know how to talk for yourself, especially when you don't know how to stick up for yourself, your rights and everything. Yeah. They just want to give you a hard time or fight with you on that.

Samantha's Story

Samantha is a forty-something Aboriginal woman who has lived in Winnipeg for about 16 years. She grew up in a small community in Northern Manitoba, graduated high school, and went on to study social work. Three years into her program she left university to start a family. Although she currently has a steady boyfriend, Samantha chooses to live on her own as she prepares to finish her university degree.

The previous two years had been difficult ones for Samantha. Before she moved into her current apartment she spent three months in the hospital (as she required an invasive surgery), followed by three months in a rooming house as she awaited a fairly large residential school settlement. She works part time at a women's resource centre, and her other main source of income comes from disability assistance.

Bed bugs were not something Samantha had in mind when she moved into a new apartment. Before moving in Samantha bought all new furnishings. Two months later she started noticing small bites on her body that she initially thought were from mosquitoes. Samantha mentioned the bites while visiting a friend in a neighbouring apartment block and her friend suggested that she might have bed bugs as her building had just been fumigated. This confirmed Samantha's suspicions, as she had seen an extermination vehicle outside and had smelled chemicals in the hallways.

Samantha's caretaker was not very accommodating when she informed her about the bites, telling her that she did not have bed bug bites and that she would need proof for the rental agency to do anything about it. Samantha explained, "She gave me a little jar, [and I'm] thinking 'Well, I'm supposed to catch a little bug, and put it in this jar?' 'Cause they wanted to see the evidence. And I thought that was so ridiculous." Samantha was eventually able

to catch a bed bug with a piece of tape in her clothes closet. Her apartment was sprayed by exterminators a week later. Unfortunately, chemical extermination had very little impact and she was still suffering from bed bugs at the time of the interview.

The experience has had a tremendous impact on Samantha's life, and in many ways. First, having to deal with bed bugs has been very expensive. Samantha had to discard all of her new possessions—her bed, a dresser, as well as much of her clothing—which she estimated cost her over \$6,000 dollars:

All the money I spent, like, I just, I felt so bad, I just cried. Because all that money I had, you know, all in the garbage. I don't have nothing. My son gave me a futon ... Now that's infested.

Her son has also provided her with an air mattress to sleep on as she cannot afford to buy a replacement bed. She also spends over \$30 a week on laundry, which has become a compulsive ritual for her:

See, I'm becoming obsessed too, like, I'm washing, continually washing clothes—with money I don't have—all the time, over and over again. Because I, when I put them on, you feel the clothes you're wearing, they're on.

The response of the rental agency has made things worse. Samantha had never encountered bed bugs prior to moving into this apartment, yet her rental agency was not willing to admit that they have had any bed bugs in the building, opting to blame her instead.

I think they have a tendency to blame the tenant. Because when I had told them the second time that I had bed bugs, they said, 'Well, what are you doing, isn't the place clean or are you bringing people over?' And that's, none of it is true. Like, they just came out and they made me feel like shit... Oh yeah. And they came, the

second time they sprayed they said, 'The third time, if they have to come and spray again you're paying for it.' I was like, 'I never brought them here. It's your apartment block. It's your property, and it's your responsibility.' And she said, 'Well, you have to pay seventy-five dollars.' I said, 'I'm not paying for it.' 'You'll get evicted.' I said, 'Please,' you know.

Unaware of her rights, Samantha did not know what to do, but she believes that the rental agency was responsible for her desperate situation:

You know, I just don't have the energy anymore because I just live without ... and yet I hate that, too. 'Cause just, I'm not the type of person to lie down and just let it happen. But I just feel cornered.

Bed bugs have also affected Samantha's relationships. Her boyfriend will not stay overnight at her apartment, and although he is in denial, she believes that she has already transferred bed bugs to his place. She does not have anyone over, and has not told many of her friends. When she does meet up with people, it is at other locations. Bed bugs have led to social isolation for Samantha: "Sometimes I choose not to come out or socialize with friends."

Bed bugs have also had a significant impact on Samantha's psychological well being. She has trouble sleeping, which is having an impact on her grades at school as well as her performance at work:

You know what, I can't remember the last good night's sleep I've had all night. 'Cause I'm always turning the light on, always looking like this, getting up or looking like that, or – There's not one good night's sleep I've ever had, ever.

The psychological impact of bed bugs follows Samantha everywhere, even at work where she finds herself inspecting for bugs. She also

feels that she is now at risk of losing her job and failing her courses:

I'm very lethargic. I just don't have, I don't have the energy or the motivation. I just, it just sucks out of me. Like, where I'm staying, I want to get out of there but I need the money, you know, and ... I can't move.

Samantha's physical health has also been affected. When asked if bed bugs were affecting her healing from her recent surgery she replied: "Yes, very much, because you need rest, you need sleep." Samantha has also had reactions to the bed bug bites. She developed an infection from the bites that required antibiotics and the bites have led to permanent scarring. Also, the chemicals used during the exterminations have irritated her medical condition, causing her much discomfort.

Samantha's bed bug experience has left her suffering from depression: "I'm taking something to sleep now. I'm taking Xanyx at night and in the afternoon." One of her coping strategies—which adds to the financial cost of the infestation—is to go to a hotel for the evening, just to leave everything behind for a good night's sleep.

Samantha is waiting for another payout from the residential schools survivors' fund, and hoping then she can move out of her apartment. Her plan was to start afresh, leaving with only the clothes on her back.

Bill's Story

Bill is a professional auto body technician. He is currently married with two teen-aged children. Approximately one year before our interview, Bill was a victim of criminal violence that left his leg severely burned. He required reconstructive surgery and skin grafts and was bedridden for many months. Bill has been unable to work as a result of his injury. Being out of work for an extended period of time hurt

Bill's family financially. While his wife does work for wages, Bill's income was his family's main source of economic support.

Eight months before our interview Bill and his family moved into a duplex suite. The suite was supposed to have been fully cleaned and painted before they moved in. None of this, however, was done.

We walked into a disgusting house. ... Nothing was cleaned, nothing. Oh, the place was like really gross and disgusting. Like, if you would have seen it you would have looked and told the guy basically to 'take it and stick it where the sun don't shine' and walked away. But we had no choice, basically. That was because of my burn and everything. I'm constantly moving around in fear that these guys will catch me one day. So I'm always on the move. So when that happened, we had no choice.

Unfortunately, having to clean a badly maintained suite was the least of Bill's problems. The family did not know that the unit they were moving into was severely infested with bed bugs until one night, shortly after moving in, Bill woke up to find bed bugs crawling all over him:

I was sleeping at night and, all of a sudden, I just feel like little bites all over my back and on my legs and I was wondering why. I lift my blanket, couldn't see anything with the lights off. Turned the lights on. Then, all of a sudden, there's these little flat brown and red bugs all over underneath my body and biting me.

The infestation was so severe that in a very short time all of Bill's possessions were fully infested with what appeared to be thousands of bed bugs. The whole family had to live with bed bugs crawling on them throughout the night. Bill recalled that they were everywhere, in the couches, beds, clothing, and even underneath the carpeting.

On one occasion Bill and his wife were babysitting his young niece. When his wife went to check on the baby she lifted the blanket to find hundreds of bed bugs attacking the infant. They then flipped the mattress to find that “there were thousands of them all in between the mattresses.”

Bill was also still in the early processes of recovering from the assault, which meant he spent much of the day in bed.

Because of the operations and everything I was going through, most of my leg was still all unhealed. The skin grafts would still constantly be bleeding. And a couple of times I looked when I changed my dressings. I’d find them in my dressings. Like, I actually found bed bugs inside the dressing! And I’m like, euwww. They’re going straight after the blood that was dripping out of my leg!

Bill had promptly contacted his rental agency and informed them of the infestation, but received no assistance or cooperation—even after a third complaint:

Honestly, they were completely frustrating. They did not want to deal with this. They were giving us the run around when we went to them... Each time he sloughed us off. ‘Well, we’ll do it next week’ or ‘We’ll do it next month.’ And I couldn’t deal with it anymore. I couldn’t sleep. I was basically sleeping on just a white sheet in the middle of the carpet floor, just so I can see if there’s any bugs climbing on me or coming near me.

Frustrated by the landlord’s response, Bill contacted the Residential Tenancies Branch as well as workers at the Health Department, who informed Bill of his rights and advised him on the appropriate course of action. The Health Department issued his rental agency three written warnings to fumigate the apartment, which the rental agency ignored. The

property manager was then informed that if he continued to refuse to act, Bill’s rent would be forwarded directly to the Residential Tenancies Branch to cover the cost of extermination. After this final warning, Bill’s property manager decided to take action.

It took over three months from the time Bill’s family learned of the infestation for the house to be fumigated by a local extermination company. The chemicals used made Bill’s family ill: “We weren’t allowed in the house for three days. And upon entering the house we got sick from the fumes. Like, there was nausea, vomiting.”

The infestation took a massive financial toll on Bill and his family. Most of their belongings were so badly infested that they had to be thrown away: “four beds, a loveseat, chair, couch. If it had upholstery it was thrown out. Anything they could hide or lay their eggs in we had to get rid of it.” Bill estimated that this loss cost him \$5,000—a steep figure for someone who is not able to work for wages. He has only been able to replace the lost furniture by buying from second-hand stores on credit

The impact on the family was severe in other ways as well. Like many of the other people we interviewed, sleep deprivation was a problem: “All of us, we couldn’t sleep. We were lucky to get two hours of sleep a night, just worrying about getting sick or being bitten constantly. And those things are disgusting.” Being at risk of a nervous breakdown, Bill’s doctor prescribed a sedative to calm him down so that he could sleep at night. His wife was also prescribed a muscle relaxant so that she could sleep.

Given the social stigma attached to people who encounter a bed bug infestation in their home, relations with friends and family often suffer. Bill was very forthright with his friends in telling them about the bed bugs, but nonetheless found it a frustrating situation to deal with:

Yeah. I told them about it and that if they come over basically they have to really be careful 'cause if they go on you they can transfer from one home to another just by going on to another person. I even told them, you know, 'Guys, we got bed bugs. When you come in, if you're going to come and visit, fine, we'll check you before you leave. That way, you're not going to be taking nothing home with you.' And that's pretty frustrating when you're telling your friends and you got to check them, like, check their back and get them to go in the washroom and check, like, you have wood ticks when you check for those ... That's basically what they were going through every time they have to leave my place and that's really frustrating. Like, your friends start to say, 'Oh I'm not going over there anymore.' I had that happen for a while. ... A lot of people are 'Ugh, I'm not going there. The guy's got bed bugs.'

The experience affected Bill's friendships to the point where he even got into a physical altercation with one friend over the bed bugs. His friend had been over for a visit, and when he got up to leave, Bill noticed a bed bug on his shoulder. When Bill went to remove it, the man got upset and angry and ended up trying to punch him. As Bill put it, it was "all over stupid bed bugs."

The stigma of being infested with bed bugs continued even after the duplex had been treated, as Bill said his friends would not come for a visit:

They're scared that they're going to get bed bugs on them, and they're going to bring it to their house. And I keep telling them, I says, you know, 'It has been dealt with, Landlord and Tenants dealt with it, we had the Health Board down here, we had them fumigate everything. Whatever we had is all discarded, we destroyed and,

like, got rid of everything that we had. You guys can come and visit now. It's all clean, even the Health Board approved it. Like what else do you need?'

Bill's teen-aged children also encountered stigma from their friends. Before his family experienced bed bugs, the household was always full of kids: "Aw, man. I couldn't keep the kids out of my house. I had, like, thirty kids everyday in my house." Living with the infestation meant that his children's friends "won't even come around." Instead, his children were being ostracized:

Constantly being bugged every day, 'Hey bed bugs, hey bed bugs,' kids calling them down, belittling them. It got to the point where my kid was starting to cry and I'd come home 'Dad, dad, dad,' I'm like 'Oh, okay, that's enough.' And then when I go to the school, talk to the, the principal, the vice principal, I says, 'You know, why don't you guys sit these people down and explain to them bed bugs are everywhere. Even though you're a clean person it just takes one person just to carry just the, the one bug or the egg into another home. Like, it goes anywhere. It's just like lice.'

As a result of the stigma, Bill's children began to blame him for the situation, which placed a serious strain on their relationship.

And my daughter, even a couple times we got into a few words me and her. And I told her, I said, 'You know, it's not my fault.' 'Well you guys should have checked the place out. You guys should.' 'Well how are we supposed to know that there's, the place is infested with bed bugs? Were we supposed to get a magnifying glass, rip the carpets apart and look through everything?' ... They're saying that we could have done a better job finding a place with no bugs. And we

did a good job for finding a place but we didn't know if there was bugs or not. So, it's hard to know.

Bed bugs were also an issue that "constantly caused conflict" between Bill and his wife. According to Bill, the bed bugs created a "serious strain" for his family. In his words, "it got to the point where we were almost at a complete family breakdown." Given what else was going on in his life—especially the assault and resulting injuries—the bed bug infestation was the last straw. As Bill recalled:

I was basically ready to give up. I was going to honestly even commit myself. Like, I was at the end of the rope. I didn't see nothing anymore, when I'm being eaten alive by these bugs in my own bed and that. I was almost at the point of giving completely up.

For Bill, if it wasn't for the Residential Tenancies Branch, his family would still be, as he put it, "living in bed bug city." In his estimation, "They did a heck of a job. They helped us out really good." Bill wants to get back to work, but his doctors estimate that the experience with the bed bug infestation has prolonged his healing process by at least six months. He summed up his experience in this way:

This has been one heck of a learning experience, how to deal with this. And even though you get help through Landlord and Tenants or the Health Board, it's still just affected, you know, you're being eaten alive by these bugs and your family is being destroyed. Your kids can't sleep. Your wife can't sleep. You have to get rid of all your furniture and start everything over again. And you get hard times from your landlord. It's just so stressing. I think I've like I grown at least a hundred white hairs this year alone.

Christine's Story

Christine is a young, single mother who is working towards her grade 12 and has plans to go to college. Before moving into a Manitoba Housing complex in October of 2008, she had been renting from a private rental agency for over four years. It was in April of 2008 when she first became aware of bed bugs in her apartment. Noticing a bug on her young daughter's stomach, Christine killed the bug and placed it in a zip lock bag. Upon conducting some research on the Internet, she determined it to be a bed bug. Christine contacted the property manager of her building the next morning.

Christine's troubles with the rental agency began with her first contact with her property manager. The woman took her into a small room and began asking her if she shopped at Value Village or other thrift stores, and if she was on social assistance. Christine responded to the property manager by saying: "Why does social assistance have anything to do with me getting bed bugs?" The manager replied: "Well, if you're on social assistance you can get bed bugs from the office because you can get them from the chairs." Christine told the manager that she doesn't go to the welfare office, as she communicates with her worker over the phone. Nevertheless, the property manager claimed that if other suites did not have bed bugs, then she would be liable for the cost of extermination plus subject to an eviction. Christine left the office in tears.

Exterminators were called in soon after. A week later the rental agency sent Christine a bill for \$1,300. This amount was to pay for the fumigation of her apartment, the adjacent apartments, the common area, and the laundry room. The property manager told Christine to ask her welfare worker for a cheque for \$1,000 as an initial payment. Christine sought advice from the local women's resource centre, where she was informed of her rights. Nevertheless,

the rental agency put in a claim through the Residential Tenancies Branch, and Christine ended up in court.

Christine was certain that she was not responsible for the infestation. She had bought new furniture when she moved in, and had lived in the building for four years without seeing a bed bug. Christine was also under the impression that other people in the building had been suffering from bed bugs for quite some time.

I was living in that apartment for four years and a lot of people around me were constantly moving in and out. And in those moves there were always, like, mattresses and box springs in the hallways, right? I was there for so long and living in that apartment and people were moving in constantly, in and out of the, of the building. ... Maybe someone had bed bugs but didn't want to say and didn't want to come out and say, like, you know, 'I have bed bugs.' You know, they tried to remedy it themselves. 'Cause I know that I've seen a lot of *Raid* cans and the smell of bleach, you know, coming from apartments. And I think that maybe some of the residents in that apartment building were trying to remedy the bed bugs themselves. And then somehow they managed their way to my apartment.

While Christine was likely not the first person to have bed bugs in the building, she was most likely the first person to come forward. "That's why I got the \$1300 invoice is because I was the first one to come out and say, 'Look, I've got bed bugs.'"

Before the claim against her was heard in court, Christine did a great deal of research on the Internet to prepare for her case. When she arrived at the RTB for her hearing she was asked three separate times if, rather than going to court, she would like to enter mediation, to which she repeatedly replied, "No." Christine

felt that "it was almost like as though they were trying to force me into mediation." She was very opposed to mediation, since "to me mediation is like accepting part of the blame."

With the help of the workers from the local women's resource centre and neighbourhood association, Christine prepared her case for court, arguing that there was no way of proving she introduced bed bugs into the building. She also provided photographs of her baseboards and other areas of the apartment to show avenues where bed bugs could have entered her apartment. Christine won her case but unfortunately her battle did not end there, as her rental agency appealed the RTB decision. When she arrived for her second court appearance, the rental agency withdrew from the proceedings at the last minute.

Throughout this process, Christine experienced harassment from both her rental agency as well as their lawyer. Prior to the hearing, she was approached by her rental agency's lawyer:

Oh yeah, he, the guy who represented [the rental agency] was there in the hallway, like, in the lobby area, and he came and he sat down beside me while I was waiting for my lawyer to show up before our court date. And he came to sit beside me and he's like, 'All we wanted was three to four hundred dollars for you to help us out with the bill.' And I just sat there and I looked at him and I didn't say anything to him because why should I have to pay three, four hundred dollars? And then he also mentioned that he said that 'I have so much information against you and your lawyer that I could have blown your lawyer out of the water with all the information that I have, but I just don't want to bother.' I was like, 'Oh.' I didn't want to say anything to him, you know.

Her rental agency then began sending her threatening calls, claiming she owed money for services she did not utilize:

The property manager had called me up a few times and left a few nasty messages on my voicemail, coming up with ridiculous amounts of money she said that I owed the company but due to past parking fees. I didn't have a parking spot until I requested one in 2007. I have all those papers at home to show that I was never charged for those years from 2005 to 2007. But all of a sudden, she's calling me and telling me that I owe back payments.

While Christine had the tenacity to deal with the legal ramifications of the infestation, it certainly added extra stress to an already stressful situation. Fortunately, Christine was able to move to an apartment in a Manitoba Housing complex, where she had been on the waiting list for quite some time. Unfortunately, she has experienced bed bugs at her new place of residence as well, but during the interview acknowledged that Manitoba Housing has handled the situation much better than her previous rental agency. Even though her relationship with Manitoba Housing has been positive, she says that because of what happened at her previous rental address, "I'm really paranoid... It's definitely made an impact on me, you know... I am trying to follow the guidelines as best as I can when it comes to the treatments and stuff like that."

Bed Bugs are a Public Health Threat

It opened my eyes a hundred percent. Like, I never really thought of it before, these tiny little bugs, how they could just bug you so much, well no, they can destroy your life. They can destroy your family. They can get you sick. (Bill)

As revealed in these residents' stories, bed

bugs can have a devastating impact on people's lives. Economically, many have lost important belongings and some have had to start over. This has caused immense stress and challenges for citizens with marginal economic resources. The experience of bed bugs has also led to disruptions in people's social spheres, including carrying out daily responsibilities related to parenting, education, and employment. The stress and general lack of sleep, coupled with the psychological impact (depression, anxiety) these residents experienced from bed bugs made it difficult for them to cope within their daily tasks, which had a definite effect on their health and well being. It is important, therefore, to locate the experience of a bed bug infestation as a public health threat.

The personal toll that comes along with an infestation came across strongly in the other interviews we conducted with inner-city residents. Similar to Margaret, Samantha, Bill, and Christine, other residents spoke about the impact of losing all of their belongings:

It's just like a house fire, you know, where you have to start all over.

I had to throw everything out. And it was, like, really hard—and really stressful.

I was down to no furniture. I was down to nothing. Nothing in the living room, couple of chairs, coffee table, a lamp. No bed, sleeping on the floor.

The word is out on us, hey, that if I put on there that I've been three years in Manitoba Housing, most rental agencies know that we have bed bugs now. So they'll tell you, 'If you move in here you can't bring anything with you. You got to buy totally new stuff.

Residents also spoke about the social stigma—and the shame and embarrassment—that accompanies an infestation. There is a definite silencing around the issue of bed bugs. People

are afraid to tell their friends and family and fellow tenants:

When I told my friends that I had bed bugs and, like, they didn't want to come over because of the bed bugs.

I think if a person is to talk to somebody else they'd say, 'Oh, don't let that guy in the house. He's got bed bugs. Don't let him in.' That's why I don't think people are talking. That's what I fear.

I hate being marked, like, blacklisted. Like, people think we're going to infect you or something.

This stigma results in increased social isolation, and hinders the ability to deal with the problem:

I was always afraid to go somewhere, because what if I drop a bed bug somewhere?

I don't want people to come to my house, 'cause I'm scared to get them.

I didn't realize how much it has an impact on you. It isolates you. It damages relationships.

Believe it or not, it's caused feuds between people in my building. It's caused fights. Actually there are people that are not talking to each other, that don't talk to each other anymore.

The experience of a bed bug infestation also has an impact on people's identities or sense of self. Several residents talked about how "dirty" they felt in having to deal with bed bugs. Reflecting an awareness of the negative stereotype associated with those who are unfortunate enough to encounter bed bugs in their homes, the statement "I'm a clean person" was heard many times throughout the interviews. Residents also commented:

I felt really, really dirty because of those bites all over.

I felt degraded. I felt sick. I felt just, like, burn everything. Just burn it and get rid of it.

People ask me, 'Do you got AIDs or something? Do you got bugs? You got bites and you got marks all over you.' Think about that. All the stigma that comes with that. I'll tell you the truth. It really bothers me.

Residents also spoke about the health problems that come with the lack of sleep and the stress associated with an infestation, and with bites that become infected:

I couldn't sleep, eat, or nothing. ... And I lost weight. My girlfriend is really worried about my weight now.

I can't remember the last good night's sleep I've had.

When they bite me I get an allergic reaction on my body.

I developed an infection. I had to get antibiotics. They were all over me and they were just, like, really infected. Now I've got scars all over.

Every time they spray certain people get sick in my building. They get headaches, they get breathing problems, and they get really sick for about four days.

Almost all of the inner-city residents reported suffering from increased stress as well as an alarming amount of sleep deprivation as a result of an infestation. There is much well-supported research that documents the significant impacts of both stress and lack of sleep on people's ability to undertake everyday activities such as work, school, and raising families, which can create further stress and health-related outcomes. These two factors are also interrelated. Stress can have a significant impact on sleep duration and sleep duration can have a significant impact on stress.

Sleep deprivation has been linked to a host of health issues, including heart and circulatory conditions, hypertension, weight gain, diabetes, psychological problems, and a weakened immune system (Gottlieb et al., 2006; Zee & Turek, 2006). For example, Tara W. Strine and Daniel P. Chapman (2005, p. 25) found that their results “corroborate previous research indicating that insufficient sleep is a major public health problem.” Therefore, if sleep deprivation is considered a major public health problem, and bed bugs drastically affect the amount sleep people receive, then experiencing a bed bug infestation should be considered a major public health problem as well. Lack of sleep can also have detrimental effects on education and learning, transportation safety, and work behaviour (Carskadon, 2004).

Stress has many of the same implications for health as sleep deprivation, especially in influencing heart and circulatory problems. As SDH researchers have emphasized, people who are economically marginalized already suffer from higher levels of chronic stress, which impacts their health (Brunner & Marmot, 2006; Kelly, Hertzman, & Daniels, 1997; Siegrist & Marmot, 2004). Adding the experience of bed bugs into the mix makes life tougher for people who already have it tough as it is.

One of the sources of stress encountered by inner-city residents in their battle with bed bugs was the response of their landlord or property manager. Recall, for instance, that Margaret’s landlord labelled her a “trouble-maker” when she complained to the Health Department about his refusal to call in an exterminator. Samantha’s landlord blamed her for the infestation in the apartment complex, and threatened her with eviction. It took three written notices from the Health Department before Bill’s landlord took action to deal with the infestation. Christine’s rental agency took her to court in an effort to force her to pay the costs of extermination. We interviewed three

landlords—all of whom had encountered bed bugs in their properties—to access their standpoint on this issue.

The Standpoint of Landlords

One of the findings to emerge from our interviews is that while there are certainly uncooperative landlords, there are others who are very willing to do what they can to deal with the problem of bed bugs.

The three landlords we interviewed were mindful of the difficulties that some of their more vulnerable tenants encounter. As one commented:

The biggest issue we have with tenants is when they have health problems and they have nowhere to go when it’s being treated ... A lot of our tenants are either old or on a mental disability or physical disability, that often they don’t have a lot of social supports, so typically if they have to be out of their place for eight hours, eight to twenty-four hours, they have nowhere to go.

The landlords were also very much aware of the social stigma associated with a bed bug infestation. As one landlord remarked, his tenants response

.... tends to be fairly meek, apologetic, and as if they’re feeling embarrassed about letting us know. So at first contact I assure them that it has nothing to do with them, it’s a worldwide problem, it’s becoming a bigger problem in Winnipeg ... that it’s not any indication of whether they’re good people or dirty people, it’s just a bug that comes and something needs to be done about it once it’s there.

Another commented, “People don’t want to tell me, and they’ll tell me when they become desperate.” The third landlord said: “People will not come forward and tell you. They feel

embarrassed. They feel uninformed. They think it is a hygiene problem which we know it's not. Some people unfortunately feel that you will look at them, upon them, you know, in a disrespectful or shameful manner."

One of the reasons that landlords are concerned about this issue is because of the financial expense. Bed bugs are costing them anywhere from \$1500 to \$10,000 a year, depending on the size of their rental operation. As one landlord said, "It's a very expensive issue to deal with. It's almost becoming a line item on our expense and income statements."

Unfortunately, the social stigma of bed bugs extends to people who are living in accommodation that is known for being bed bug infested. As one landlord said, "there are certain buildings I will not accept tenants from." And the cost of dealing with the problem is being transferred to tenants through rent increases. One of the landlords explained:

I don't raise my rent because the building is operating quite fine, but this last year I decided if bed bugs are going to cost that much, I'm raising my rent. A 2.5 percent increase to the rent was about \$4,000, which I figured would be about right.

To their credit, all three of the landlords we interviewed have taken a proactive approach in dealing with bed bugs. In addition to calling in exterminators to spray infested suites and surrounding apartments, landlords also: did their own research and consulted with entomologists; distributed pamphlets and other literature to their tenants; provided tenants with strategies for combating the problem (one landlord even supplies his tenants with mattress covers); made renovations so that bugs cannot travel between suites; maintained vigilance about discarded furniture in the alley ways; and conducted regular suite inspections.

While these landlords have been taking action on their own to deal with the problem, a coordinated bed bug plan is required. As SDH researchers have emphasized, governments and policy makers have an important role to play in shaping the social and economic factors that produce healthy individuals, communities, and societies. This is especially the case for more vulnerable citizens, as "they have less power and ability to influence the public policy process" (Raphael, 2010, p. 32). Framing the bed bug problem as a public health issue means that *all* stakeholders need to be recognized in addressing this issue.

What Should Be Done to Combat Bed Bugs?

In March of 2011 the province of Manitoba announced its intention support the battle against bed bugs, setting aside \$770,000 to finance the first year of the plan. Part of these monies will go toward a bed bug phone line that will offer information and track infestations. Grants will also be provided for community-based organizations to support their education and prevention efforts. The government also announced plans to build a coalition of municipalities, health authorities, business groups, and other key stakeholders to advance its province-wide approach. In addition to providing bed bug prevention materials (mattress covers, insect monitors, and laundry bags), a public education campaign focusing on prevention and eradication will be launched involving brochures, posters, fact sheets, and a bed bug website (News Release–Manitoba, 2011).

While Winnipeg Mayor Sam Katz has expressed his support for the province's bed bug initiatives, saying that "Our staff will work alongside the province and other organizations to ensure the most-effective response to this issue" (News Release–Manitoba, 2011), the municipal government will have an important role to play in ensuring the success of any provincial bed bug plan. In this regard, lessons can be learned from the City of Toronto. Experiencing a dramatic increase in bed bug infestations since 2003, Toronto has taken a comprehensive approach to dealing with bed bugs, named the Toronto Bed Bug Project.

The Toronto Bed Bug Project

Initiated in 2008 by the Toronto Board of Health, the Toronto Bed Bug Project is a multi-stakeholder, city-wide approach to bed bug control in that city. Comprised of an inclusive group that includes "city divisions, housing

providers, health care organizations, social services agencies, community groups, landlord and tenant representatives and other appropriate stakeholders" (McKeown, 2008, pp. 1-3), the purpose of the project is to develop a comprehensive action plan to reduce bed bug infestations in the city, with particular emphasis on vulnerable populations. The project is organized into a steering committee and seven workgroups that focus on bed bug control issues, public messaging, legislative review, education and outreach, community-based responses, tracking and monitoring, and health issues (McKeown, 2008). In addition to producing literature and a website to enhance public knowledge about bed bugs, these working groups have undertaken a legislative review to develop an appropriate strategy to support an integrated pest management approach, as well as pilot projects aimed at devising methods to control, reduce, and prevent bed bug infestations.

Two aspects of the Toronto approach are noteworthy. First, recognizing the social impacts of bed bugs, the problem has been framed as a public health issue. As Dr. McKeown, Toronto's Medical Officer of Health and a lead player in the project, notes:

Bed bug bites can cause physical and psychological discomfort... Individuals who are repeatedly bitten by bed bugs may show psychological symptoms of nervousness, agitation and sleeplessness. There is also an underlying social stigma that very often accompanies confirmation of bed bug infestations and this can result in isolation and withdrawal. (McKeown, 2008)

Second, while the project aims to combat the social stigma surrounding bed bugs with a public messaging campaign that emphasizes "anyone can get bed bugs" (Toronto, 2009), the

primary focus has been directed to those who are most vulnerable when infestations occur: the poor, the elderly, and those with disabilities and mental health issues. As such, the Toronto Bed Bug Project has advocated for disaster relief funding to assist vulnerable citizens to purchase services to prepare their residences for bed bug treatment. To provide these services a social service enterprise called “Bug and Scrub” has been created that provides employment to homeless Torontonians.

In their efforts to combat bed bugs, therefore, the Province of Manitoba and the City of Winnipeg would do well to follow the lead of the City of Toronto’s Bed Bug Project by framing the problem as a public health threat—especially for those most vulnerable in our communities. This means that the plans now underway in Manitoba—which include establishing a multi-stakeholder committee, providing resources for community-based agencies, undertaking a public education campaign, and providing bed bug prevention resources—will need to be enhanced and supplemented with other strategies in order to realize a comprehensive approach that acknowledges the variable social impacts of a bed bug infestation. What follows, therefore, is an elaboration of some of the components that will need to be addressed.

The Current Legislative and Policy Framework

While the primary legislation for dealing with landlord and tenant obligations is the provincial *Residential Tenancies Act* (discussed previously), “pest control” is also dealt with under municipal by-laws. Prior to November 2008, the main municipal by-law in Winnipeg to deal with bed bug infestations in rental accommodations was the *City of Winnipeg Maintenance and Occupancy By-Law*, which clearly identified the owner as the party responsible for dealing with an infestation. In November of 2008 this by-law was replaced by the *Neighbourhood*

Liveability By-Law, which considers bed bugs to be a “nuisance” and “unsanitary” and places the onus on both owners *and* occupants to prevent their existence in a dwelling. While occupants as well as owners are now tasked with responsibilities in responding to an infestation, it remains the case that the power and control that tenants can exercise over their living space is limited. This point was demonstrated by the experiences of several of our inner-city respondents in dealing with uncooperative landlords.

In addition, while Public Health Inspectors were previously responsible for responding to bed bug complaints, with the new *Neighbourhood Liveability By-Law* that role has now been largely taken up by By-Law Enforcement Officers. As one of the Public Health Inspectors we interviewed explained, By-Law Enforcement Officers “aren’t trained in the health component and health aspect or community component anymore ... so they’re only looking at the bed bug issue as ‘is it a violation of the [Neighbourhood Liveability] by-law?’” This change in policy has also limited the power that Public Health Inspectors and By-Law Enforcement Officers have in dealing with bed bug complaints. If landlords do not comply within a given time period, a written order and a timeline to complete extermination can be issued. If the landlord does not follow this order, he or she runs the risk of being issued a charge under the *Neighbourhood Liveability By-Law*. The inspectors we interviewed, however, said that they have never issued a charge for bed bugs under this new by-law. Another strategy allowed under the by-law when a severe infestation is present is to shut down a rental unit. But because bed bugs are considered to be more of a “nuisance” than a public health threat, it can be very difficult to get a closure order for a rental unit. At the time of our study, there had been no health hazard orders issued for bed bugs since the passage of the new by-law.

Several legislative and policy changes are therefore in order. First, bed bugs present a unique set of circumstances and should therefore constitute a separate section within the *Neighbourhood Liveability By-Law* (rather than being grouped with “other pests and vermin”).⁴ Second, the rights and responsibilities of landlords and tenants should be more clearly articulated. A good example is Christine’s experience, where her rental agency tried to pursue compensation for extermination costs. Had the landlord’s responsibility for extermination been indicated more clearly in the by-law, her rental agency may not have pursued legal action and Christine would have been saved the trauma of going through a legal battle. Third, recognizing bed bugs as a health hazard—as opposed to a nuisance—would expand the scope of powers that Public Health Inspectors have in dealing with infestations. As well, constituting bed bugs as a public health threat will legitimize the need to streamline the process of dealing with compliance issues by both landlords and tenants, which has proven to be a labourious and time consuming endeavour.

One strategy that received support from the landlords we interviewed was stronger enforcement of bed bug violations and the penalties for those that violate by-laws. One landlord felt that these penalties must be very harsh in order to be effective:

I believe that if the Health Department has to tell a landlord to treat a suite properly that he should receive an automatic \$3,000 fine. I also think that if a tenant doesn’t cooperate with the landlord he should also receive a \$3,000 fine.

Nevertheless, tougher law enforcement may not be the solution if it means that tenants are faced with fines they cannot afford to pay or left with no place to live when a rental unit

is shut down. As such, a more comprehensive approach is needed.

Safe, Adequate, and Affordable Housing

Bed bugs connect to the larger problem of a lack of safe, adequate, and affordable housing. As noted previously, the vast majority of inner-city residents rent their living accommodation. Renting limits the power and control that tenants have over their living space, as they are dependent on landlords to ensure that buildings are safe, healthy, and properly maintained. As such, addressing the quality of housing in Winnipeg’s inner-city communities must be a key part of an anti-bed bug strategy. Ian Skelton and his colleagues point out that 10 percent of Winnipeg dwellings are in need of major repair, which significantly exceeds the national average of 7 percent and is the highest percentage among Canada’s twenty-five metropolitan areas (Skelton et al., 2007, p. 55). Many of the residents we interviewed affirmed the poor quality of their housing. Poor quality housing can influence the spread of bed bugs and provide a site for them to flourish.

With the level of revenue generated by inner-city housing, it is unlikely that the private rental market will invest in the resources necessary to improve housing conditions, and therefore some non-market solutions need to be explored. These should include strategies to encourage private landlords to improve housing conditions, which will require enforcement and/or subsidies to landlords to improve the overall conditions of rental housing. Also, a greater investment needs to be made in providing quality inner-city social housing stock, both government-run and co-operative community housing projects. The 2010 commitment by the Manitoba government to produce 300 new units of social housing per year

4. There is a precedent for this separation as termites, pigeons, and mosquitoes are each dealt with under separate sections in the *Neighbourhood Liveability By-Law*.

for each of the next five years is an important step in the right direction, although it is well known that a National Housing Strategy is an essential element in solving the low-income housing crisis across the country.

Integrated Pest Management (IPM)

According to *The Bed Bug Resource Manual* (Woodgreen, 2008), treatment for bed bugs involves a variety of methods, including the use of fumigation and pesticides, cleaning and vacuuming the infested space, laundering and drying clothing and bedding at high temperature, and regularly monitoring sleeping areas.

The use of chemical pesticides, however, is a contentious issue. Several of the residents interviewed for our study reported negative health effects (including nausea and vomiting) as a result of their exposure to pesticide treatments. Other less-toxic methods—such as the use of diatomaceous earth—have been advocated for the treatment of bed bugs. One of the more promising developments is the use of extreme heat. Modern heating equipment and technologies allow exterminators to isolate and heat an entire building or parts of a building to kill the bed bugs, while large ovens enable the treatment of infested mattresses and furniture, thus avoiding having to dispose of affected belongings. Trained dogs are also now being used as a quick and effective means of detecting the presence of bed bugs. The province and the City of Winnipeg therefore need to formulate a best practices IPM approach to be utilized in combating bed bugs. These best practices guidelines could assist landlords, tenants, inner-city agencies, and other stakeholders in responding to the epidemic.

Fighting Bed Bugs at the Community Level

There are many steps that can be taken at the

community level that could help to control the bed bug epidemic, as well as provide relief for those who are currently suffering.

Regular vacuuming is an essential part of a successful bed bug control strategy, but many of those living in Winnipeg's inner-city communities do not have access to a vacuum. As one of the Public Health Inspectors we interviewed noted:

Nobody has vacuums anymore. It's unbelievable. It's unbelievable because I started late eighties and I'd see people vacuum. I don't see anybody with a vacuum, almost never. So therefore you're not decreasing the small nymphs or vacuuming up some of the adults and stuff like that. You could probably take a general survey of this. If you ask all those people who have bed bugs 'Do you vacuum, or do you have a vacuum?' because I bet you would have a high percentage of people who have a continuous problem, and they don't vacuum.

Toronto's Bed Bug Project is providing vacuum cleaners on loan as part of their pilot projects. This strategy could be implemented in Winnipeg to provide vacuums to everyone who needs them.

The City of Toronto has also taken the lead with its "Bug and Scrub" program, which is a social enterprise created by the Seaton House Men's Shelter. The program offers assistance to tenants in preparing their household for bed bug treatment, while providing employment for homeless people. "The support is above and beyond that provided by traditional pest management companies. Bug and Scrub has been an integral part of successful case management approaches for vulnerable people facing bed bug infestations" (McKeown, 2008, p. 8).

In addition, direct funding to those suffering from bed bug infestations is also important, as

many residents are not able to afford the cost of replacing their possessions. Toronto has started to make progress on this front with the Ontario Works/Ontario Disability Support Program (OW/ODSP), a collaboration between Toronto Public Health, Bug and Scrub, Toronto Social Services, OW, and ODSP Toronto District offices that was set up to “develop protocols and establish working relationships when seeking funds to assist clients who may not have the financial resources to deal with their bed bug issues” (McKeown, 2008). The funding is provided on a case-by-case basis and is “required for furniture/mattress replacement and contracting services such as Bug and Scrub to conduct heavy cleaning, and any other necessary preparation work for successful bed bug treatment” (McKeown, 2008). This program benefits the community in two ways: by providing important services to those who cannot afford them, and providing employment opportunities for Bug and Scrub.

The Importance of Inner-City Agencies

Inner-city agencies provide vital resources to residents through various services, such as advocacy, providing an important social space within the community, shelter, charity and second hand goods, and programming and skills training. These agencies are essential to community building, and must be supported in their battles with bed bugs

Inner-city community agencies are a vital resource for residents to turn to when seeking advice and support in the event of infestations. Agencies often serve as the first point of contact for residents where they are given advice on how to handle the bed bug situation. These agencies can inform tenants about their rights and who they should contact, and community workers have even accompanied and supported inner-city residents through RTB hearings. Many of the respondents in this study utilized the services of local agencies to

cope with their experiences with bed bugs. Recall that Christine sought the support of workers at the local women’s resource centre and neighbourhood association. Bill’s family had a similar experience:

It’s like we were running into so many walls and we finally seen a friend of ours at the women’s centre down here. She showed us which way to go, take the proper steps and to do it. So I started contacting these people, letting them know. And I never knew that you could actually get help with bed bug situations. And then when I found that out I started contacting them, my wife started contacting them, dealing with them.

Agencies also provide an important social space for inner-city residents. Many respondents had some level of involvement with local agencies (such as women’s centres) where they volunteered, worked, or visited regularly. This involvement provided not only an avenue for people to speak to staff about their troubles, but also a space where they had an opportunity to talk to and share experiences with other residents in the community.

Bed bugs present a unique set of challenges to inner-city agencies, and can be very costly when they attack the agencies themselves. Financially, dealing with bed bugs has led to the redirection of funding from service provision to bed bug prevention. Also, provision of services such as clothing, furniture, and other second-hand items has been jeopardized because of bed bugs. Good employees have left their jobs because of the stress involved in dealing with a bed bug infestation at the agency office. This is why ensuring bed bug related funding to agencies working in the inner city is so important. As well, agencies need to begin working together to combat the bed bug problem. A co-ordinated strategy, similar to the Toronto Bed Bug Project, would unite inner-city agencies in their fight against this epidemic.

The Role of Social Assistance

Almost all the inner-city residents in this study were receiving some form of social assistance, and for almost all of these respondents this was their main (if not only) source of income. This reliance on social assistance has made them vulnerable during the event of bed bug infestations for two reasons.

First, dealing with a bed bug infestation creates extra expenses, and most residents were on a highly restrictive budget in the first place. Residents were often left covering the long-term cost of bed bugs out of their own pocket, as social assistance often did not adequately provide funds to cover the costs of an infestation. For example, some residents reported that they were only given \$300 to replace all of their family members' beds. This amount is barely enough to afford one bed—let alone provide for an entire family. As well, residents often reported that their social assistance workers did not fully reimburse them for their increased laundry costs, cleaning supplies, furniture, clothing, etc. Unable to come up with the money on their own limited budgets to replace these items, residents were often forced to rely on charity or gifts from family members, to buy second-hand items (which increases the potential for another infestation), or to live without.

Second, being on social assistance forces residents to live in housing that is in keeping with their meagre budgets. This often translates into either living in private housing that is of substandard condition or, if available, in a Manitoba Housing complex. As Christine noted, "I would have rather not moved into Manitoba Housing but the situation that I was in at the time I almost had no choice. ... I was looking for a place but I couldn't really afford anything with the income that I'm getting through social assistance." Several of those living in Manitoba Housing felt that moving to get away from bed bugs was too cost prohibitive. These respondents pointed out that if they

left Manitoba Housing, then they would be spending too much of their monthly incomes on rent. There are also many perks associated with living in Manitoba Housing, such as free laundry facilities, which result in lower monthly expenditures for these residents.

Also, residents stated that they had to apply for moving costs when they chose to leave their apartments to escape bed bugs. Another concern was that if their rent was higher at their new residence, Social Assistance did nothing to increase their allowance. One respondent, Lucy, pointed out that the rent at her new building went up so much that it almost eliminated all of the money Social Assistance gave her for food every month, which left Lucy wondering, "What am I going to eat now, bed bugs?"

Social assistance funding needs to be increased to an amount where bed bug victims can actually afford to replace beds and other important items after an outbreak. As one Public Health Inspector stated during our interview:

I don't think Social Services funding has changed since I've started. People get almost the same amount for their living expenses as they did, like, when I started twenty years ago.... That's brutal.... I have a hard time with what they do give people.

An increase in funding levels would go a long way toward alleviating the social impacts of a bed bug infestation.

Practicing Social Inclusion

One of the key determinants of health identified by SHD researchers is social exclusion. Individuals and groups who are socially excluded—as is the case for many inner-city residents confronted with racialized poverty—are deprived of the social supports they require, and experience a profound lack of control over their daily lives. For those already alienated

and disenfranchised, encountering a problem such as bed bugs can be a life-damaging experience. It is important, therefore, to ensure that policies and practices put in place to respond to the bed bug problem are inclusive—rather than exclusive—in nature.

By way of illustration, one of the interviews conducted with inner-city agencies took place at a local women's shelter. The shelter had encountered a bed bug outbreak. Given that the women and children who frequent the shelter were already in crisis—as they had left their homes to escape domestic violence—one might expect that having to deal with bed bugs would create even more difficulties. The shelter staff, however, had developed a protocol for dealing with the issue that involved the women in the process:

We included them in on the process. We helped them, they helped us. It was a group effort. I think it actually brought us closer together, like, as a group. Okay, we have this problem, now we have to deal with it. This is what we think we should do. We talked to them about it. ... Usually in their relationship, in their family, they don't have any control. And when this happened this was, like, they had some control. I can do this. So I can't think of anyone who was, you know, devastated.

Practicing social inclusion, then, includes ensuring that *all* stakeholders—including those most affected by an infestation—are represented on any committees designed to address the bed bug problem.

Dumpster Diving and Used Goods

A main topic of concern discussed by respondents in this study was issues surrounding “dumpster diving,” a term used to refer to the practice of scavenging articles of clothing, furniture, and the like from garbage contain-

ers found in the city's back lanes. All of the landlords reported dumpster diving as being a problem that they have witnessed, and many residents felt that this represented a major issue in their neighbourhoods.

In an area of concentrated poverty, it can be expected that out of desperation, people will collect perfectly good-looking beds or other furniture and bring it back to their apartments; however, these items may be infested with bed bugs. One strategy to combat this practice is to slash, spray paint, or use some method of destruction to ensure that people do not pick up infested items. One landlord commented:

Well, there's a number of things that can be done, one is the furniture that piles up in the alleys is prime pickings and you often see people dragging them down the lane into other people's buildings. Fortunately it doesn't happen in mine, so one, the City of Winnipeg should be picking up that furniture quicker. They will pick it up if you call within five business days and that's fine, but people should be required to call in and they don't. Most people will just dump it in the alley and hope it goes away. I think there should be penalties for doing so.

In addition to identifying these strategies in any educational awareness or public education campaigns, the City of Winnipeg needs to implement more effective protocols for the collection and disposal of bed-bug infested articles.

Also, many local agencies and charities distribute furniture and clothing to those living in the inner-city. These essential services are under threat because of bed bugs. Therefore, anti-bed bug protocols need to be in place in all businesses, charities, and agencies that distribute used goods to prevent the spread of bed bugs.

Concluding Remarks

Bed bugs are a growing international problem that requires a co-ordinated response from the various levels of government. While the Province of Manitoba is to be credited for initiating a plan to combat bed bugs, the success of this undertaking will be very much determined by how the problem is framed. Adopting a Social Determinants of Health approach enables us to understand the problem of bed bugs as a public health threat, as this approach directs our attention to the fact that while anyone is at risk of encountering bed bugs, the social impacts of a bed bug infestation can be especially damaging on the health of those most vulnerable in our communities.

As the stories of inner-city residents have amply demonstrated, dealing with a bed bug infestation has had a definite negative impact on their ability to lead healthy lives. Faced with limited financial resources, inadequate housing, and uncooperative landlords, a bed bug infestation became the “last straw” for many

residents. The experience of losing their belongings, the social isolation and social stigma, and the stress, anxiety, and sleeplessness they encountered harmed their relations with family and friends, their ability to undertake work, education, and family responsibilities, and even their identity or sense of self. For many residents, their already compromised health status was exacerbated by the physical reactions to the bed bug bites and the chemicals used to treat the problem.

Framing the bed bug problem as a public health threat therefore acknowledges the negative health outcomes that can result from dealing with an infestation. It also directs our attention to the social determinants that need to be addressed in developing effective policies and practices for responding to the bed bug epidemic and, just as important, providing adequate relief and resources—especially to those most vulnerable to incurring the social impacts of a bed bug infestation.

References Cited

- Bonifoy, X., Kampen, H., & Sweeney, K. (2008). *Public Health Significance of Urban Pests*. Copenhagen: The Regional Office for Europe of the World Health Organization.
- Borkowsky, K. (2011). Little Biters 'No Different' from Cold. *Winnipeg Free Press*, March 11, p. A1.
- Brody, J. (2008). The Scandalous Truth about Bed Bugs. *Fast Facts*. Winnipeg: Canadian Centre for Policy Alternatives–Manitoba (CCPA-MB).
- Brunner, E., & Marmot, M. (2006). Social Organization, Stress, and Health. In M. Marmot & R. G. Wilkinson (Eds.), *Social Determinants of Health*. New York: Oxford University Press.
- Bryant, T. (2003). The Current State of Housing in Canada as a Social Determinant of Health. *Policy Options*, 52-56.
- Bryant, T. (2009). Housing and Health: More than Bricks and Mortar. In D. Raphael (Ed.), *Social Determinants of Health: Canadian Perspectives* (2 ed.). Toronto: Canadian Scholars' Press.
- Carskadon, M. A. (2004). Sleep Deprivation: Health Consequences and Societal Impact. *Medical Clinics of North America* 88: 767–776.
- Doggett, S. L., Geary, M. J., & Russell, R. C. (2004). The Resurgence of Bed Bugs in Australia: With Notes on Their Ecology and Control. *Environmental Health*, 4(2): 30-38.
- Dunn, J. R. (2000). Housing and Health Inequalities: Review and Prospects for Research. *Housing Studies*, 15(3): 341-366.
- Galabuzi, G. E. (2009). Social Exclusion. In D. Raphael (Ed.), *Social Determinants of Health: Canadian Perspectives* (2 ed.). Toronto: Canadian Scholars' Press.
- Gottlieb, D. J., Redline, S., Nieto, F. J., Baldwin, C. M., Newman, A. B., Helaine E. Resnick, et al. (2006). Association of Usual Sleep Duration With Hypertension: The Sleep Heart Health Study. *Sleep* 29 (8): 1009-1014.
- Kelly, S., Hertzman, C., & Daniels, M. (1997). Searching for the Biological Pathways Between Stress and Health. *Annual Review of Public Health*, 18: 437-462.
- Lederman, M., & Morrow, A. (2010). Bedbug 'Pandemic' Predicted. *The Globe and Mail*, July 30, p. A3.
- MacKinnon, S. (2009). Tracking Poverty in Winnipeg's Inner City: 1996–2006. *It Takes All Day to be Poor: State of the Inner City 2009* Winnipeg: Canadian Centre for Policy Alternatives–Manitoba (CCPA-MB).
- Marmot, M. (2006). Introduction. In M. Marmot & R. G. Wilkinson (Eds.), *Social Determinants of Health* (2 ed.). New York: Oxford University Press.
- Marmot, M., & Wilkinson, R. G. (Eds.). (2006). *Social Determinants of Health* (2 ed.). New York: Oxford University Press.
- McKeown, D. (2008). *Toronto Bed Bug Project Update*. Toronto: Medical Officer of Health.
- News Release–Manitoba. (2011). "Province Funds Bedbug Strategy." (March 10) Retrieved May 10, 2011 from <http://news.gov.mb.ca/news/index.html?archive=2011-3-01&item=10986>.
- Owen, B. (2010, March 10). Province Declares War on Bedbugs. *Winnipeg Free Press*, p. A3.
- Raphael, D. (2010). *About Canada: Health and Illness*. Halifax: Fernwood Publishing.

- Raphael, D. (Ed.). (2009). *Social Determinants of Health: Canadian Perspectives*. Toronto: Canadian Scholars' Press.
- Raphael, D. (2001). From Increasing Poverty to Societal Disintegration: How Economic Inequality Affects the Health of Individuals and Communities In P. Armstrong, H. Armstrong & D. Coburn (Eds.), *Unhealthy Times: Political Economy Perspectives on Health and Health Care in Canada*. Toronto: Oxford University Press.
- Shaw, M. (2004). Housing and Public Health. *Annual Review of Public Health*, 25: 397-418.
- Siegrist, J., & Marmot, M. (2004). Health Inequalities and the Psychosocial Environment —Two Scientific Challenges. *Social Science & Medicine*, 58: 1463–1473.
- Skelton, I., Selig, C., & Deane, L. (2007). CED and Social Housing Initiatives in Inner-City Winnipeg. In J. Loxley, J. Silver & K. Sexsmith (Eds.), *Doing Community Economic Development*. Halifax and Winnipeg: Fernwood Publishing.
- Stobbe, M. (2011). "Bedbugs Carrying 'Superbugs' Found on Canadian Hospital Patients." [healthzone.ca](http://healthzone.ca/health/newsfeatures/article/989496--bedbugs-carrying-superbugs-found-on-canadian-hospital-patients?bn=1). Retrieved May 11, 2011 at: <http://www.healthzone.ca/health/newsfeatures/article/989496--bedbugs-carrying-superbugs-found-on-canadian-hospital-patients?bn=1>
- Strine, T. W., & Chapman, D. P. (2005). Associations of Frequent Sleep Insufficiency With Health-Related Quality of Life and Health Behaviors. *Sleep Medicine*, 6: 23–27.
- Toronto. (2009). *Bed Bugs: Toronto Public Health*. Retrieved April 15, 2010 from <http://www.toronto.ca/health/bedbugs/index.htm>
- Woodgreen. (2008). *The Bed Bug Resource Manual: A Guide to Preventing, Treating and Coping with Bed Bugs*. Toronto: The Community Bed Bug Committee and Woodgreen Community Services. Retrieved on May 6, 2011 from <http://www.woodgreen.org/LinkClick.aspx?fileticket=x983T664n8A%3d&tabid=11>
- Zee, P. C., & Turek, F. W. (2006). Sleep and Health: Everywhere and in Both Directions. *Archives of Internal Medicine*, 166: 1686-1688.

Legislation Cited:

- The City of Winnipeg Maintenance and Occupancy By-Law* No. 4903/88.
- The City of Winnipeg Neighbourhood Liveability By-Law* No. 1/2008 Retrieved May 6, 2011 from <http://www.winnipeg.ca/CLKDMIS/Documents/DocExt/BL/2008/2008.1.pdf>
- The Public Health Act*. C.C.S.M. c. P210 Retrieved May 6, 2011 from <http://web2.gov.mb.ca/laws/statutes/ccsm/p210e.php>.
- The Residential Tenancies Act* C.C.S.M. c. R119 Retrieved May 5, 2011 from <http://web2.gov.mb.ca/laws/statutes/ccsm/r119e.php>