

## **Bed Bug Issues in Toronto**

<b>Date:</b>	February 14, 2008
<b>To:</b>	Board of Health
<b>From:</b>	Medical Officer of Health
<b>Wards:</b>	All
<b>Reference Number:</b>	

### **SUMMARY**

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This report responds to a Board of Health request at its meeting of November 12, 2007 that the Medical Officer of Health investigate and report back on a number of issues related to the spread of bed bugs in Toronto. The report provides a brief overview of the epidemiology, health impacts, the extent of bed bug infestations in Toronto, control strategies and outlines a plan to deal with this resurgent pest.

Bed bug infestations occur in all neighbourhoods and communities in the City and most households deal with the problem without assistance from the Municipality. This is not the case with the most vulnerable populations in our community. In recent months, Toronto Public Health has devoted significant resources to deal with severe infestations impacting on the health of the elderly, those living with physical and mental health issues and people living in poverty. This report is intended to focus primarily on strategies to ensure that vulnerable people get the assistance they need to lead independent, pest free lives.

### **RECOMMENDATIONS**

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**The Medical Officer of Health recommends that:**

1. the Medical Officer of Health establish an action committee comprised of city divisions, housing providers, health care organizations, social services, community groups, representatives of landlords and tenants, and other appropriate stakeholders to develop a comprehensive action plan to reduce bed bug infestations in the City of Toronto with particular emphasis on vulnerable populations;
2. the Medical Officer of Health report on the progress of the action committee within six months;

3. the Board of Health request the government of Ontario to incorporate the issue of bed bug infestations in their poverty reduction strategy; and
4. this report to be referred to the Municipal Licensing and Standards Committee and the Community Development and Recreation Committee for information.

### **Financial Impact**

There are no financial implications resulting directly from the adoption of this report.

### **DECISION HISTORY**

At its November 12, 2007 meeting, the Board of Health requested the Medical Officer of Health to investigate measures to deal with the spread of bed bugs, in response to a letter from Councillor Paula Fletcher (see Attachment 1). While this report deals with most of the issues in Councillor Fletcher's letter, issues relating to by-law enforcement and municipal legislative authority will be addressed in a follow-up report later in the year.

### **ISSUE BACKGROUND**

Bed bugs are nocturnal bloodsucking insects that attack humans and other mammals. Adult bed bugs are oval-shaped, wingless insects that prior to feeding are about ¼ inch long and flat as paper. After feeding, they turn dark red and become bloated. Bed bugs have a lifespan of approximately one year and during this time an adult female can lay between 200 to 400 eggs.

These insects can be found almost anywhere in the world where humans have established homes and cities. They thrive at temperatures and levels of humidity that humans find comfortable and they tend to gather and nest in bedding, clothing, and upholstered furniture where they are likely to come into frequent contact with humans for their blood meals.

### **COMMENTS**

#### **Epidemiology**

After the Second World War, bed bug infestations became a rarity in the industrialized world. The reduction in the incidence of infestations was attributed to improved sanitation, intolerance towards indoor pests and the associated widespread use of very effective, broad spectrum, synthetic pesticides.

In recent years, governmental agencies and private organizations have reported a resurgence in bed bug infestations. The reasons for this resurgence are thought to be increased international travel, bed bug resistance to pesticides, the increasing urban population density, and the move away from the use of broad spectrum pesticides to chemical controls which are more species specific and safer for use in residential settings.

#### **Bed Bug Resurgence in Toronto**

Prior to 2003, bed bugs were not considered a common problem by Toronto Public Health (TPH) and only sporadic, mild infestations were being reported. In 2003, anecdotal reports of

greater numbers and more severe infestations began to trickle in. It soon became apparent to TPH that there was an increase in reported infestations in multi-occupancy premises across the City.

In order to assess the level of infestation, TPH conducted a two year survey to collect base line data on the number and intensity of reported infestations. In 2005, a total of 197 requests for service were received and in the following year this number dropped to 147. Bed bug infestations were reported in a range of residences including single family homes, student residences, condominiums, apartment buildings, hostels, rooming houses and shelters. Apartment units were the most commonly infested type of residence, making up 78% of all complaints/requests for service.

A recent TPH survey of the major pest control companies operating in the city provided further information. TPH surveyed twelve pest control companies in December 2007, and received six responses. All six companies reported an increase in numbers of inquires and calls related to bed bugs from 2006 to 2007. The majority of calls were in apartment buildings. One company estimated 1200 treatments for bed bugs in 2007, and another company provided 400 to 450 treatments every month for bed bug infestations. The cost of each treatment ranged from \$200 to \$450, depending on the size of the home or apartment. Usually two to three weeks after the initial treatment, a follow-up treatment was required.

During the last six months of 2007, Public Health Inspectors reported a significant increase in requests for service in the South Region of the City. This is roughly the area south of Bloor Street bounded by Parkdale in the west and the Beach in the east. Public Health Inspectors also reported that a significant number of requests for action were being received from the most vulnerable people in our community including residents living with physical and mental disabilities, the elderly and those living in poverty. Many of these people do not have the capacity and/or the financial resources to combat bed bug infestations. There is currently no organization that provides sufficient appropriate assistance and/or funding to help these individuals cope with severe bed bug infestation problems.

## **Health Effects**

Bed bug bites can cause physical and psychological discomfort. In the majority of cases, individuals bitten by bed bugs experience no more than an almost undetectable reddish bite that disappears within 24 hours. In rare cases, allergic reactions may develop with itchy raised and inflamed reddish wheals at the site of bites. In extremely rare situations, severe haemorrhagic skin lesions can occur. Secondary infections can occur through extensive scratching and contamination of the bite site. 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. Currently there is no evidence that bed bugs can transmit blood born infectious diseases such as hepatitis B, hepatitis C or HIV. It has been determined that these viruses do not replicate inside the insect's body, and animal model studies have never been able to demonstrate insect to animal transmission.

## **Control of Bed Bugs**

Bed bug infestations can occur in any community and can infest almost any type of building. The single most effective approach in controlling this problem is public education with emphasis on identification, prevention and control strategies. Addressing infestation in a specific building requires a detailed inspection, detection and assessment process by a qualified pest control specialist. Bed bug control strategies can include both chemical and non-chemical approaches, but non-chemical techniques alone cannot effectively control or eliminate established infestations.

The integrated pest management (IPM) approach is viewed as the best practice for most bed bug infestations today. This involves the application of both non-chemical and chemical techniques with an emphasis on those methods and products that will have the least impact on human health and the environment. Non-chemical controls include the use of vacuuming, steam cleaning, controlling indoor temperatures and exclusion strategies. Chemical approaches in Canada are restricted largely to synthetic pyrethroids which are available in liquid or powder forms.

In residential settings, the education and cooperation of unit occupants is a key component in any bed bug control strategy. Typically, occupants of infested areas should be educated on how to maintain sanitary living environments, eliminate clutter, launder clothing and bedding, undertake vacuuming and move furniture in preparation for chemical treatments.

Without the cooperation of an occupant, chemical treatments tend to be less effective and more treatments will be required to control an established infestation. The more treatments applied, the more likely pesticide resistance will occur in bed bugs. In addition, with more frequent pesticide applications, there is also an increase in the likelihood that residents will develop sensitivities to these chemicals.

## **Bed Bug Control in Toronto**

There is no single solution which will deal with the problem of bed bug infestations across the city. Cooperation between tenants, landlords, the pest control industry, government and community agencies is essential in working towards a meaningful and effective control strategy.

As a matter of internal City policy, Toronto Public Health takes the lead in the investigation of all bed bug infestations that are reported to the City. Toronto Public Health receives requests for service from only a very small percentage of Toronto residents who are struggling with this problem. Most bed bug infestations in Toronto are dealt with privately with impacted individuals working with landlords or consulting directly with pest control companies.

To assist the residents of the City, Toronto Public Health has developed and disseminated bed bug educational materials (see Attachment 2: *Bed Bug Fact Sheet*, Attachment 3: *Bed Bug Information for Tenants* and Attachment 4: *Bed Bug Information for Landlords and Property Managers*).

In addition, Public Health Inspectors provide advice, conduct inspections, undertake education seminars and participate in community outreach programs in an attempt to create greater

awareness and improve control strategies. Very often Public Health Inspectors provide a mediation or liaison role in bringing landlords and tenants together to participate in effective control programs.

Currently, some of the largest reservoirs of bed bugs appear to occur in the most vulnerable communities in the City and these are proving difficult to control. Psycho-social issues and lack of social supports complicate efforts to control bed bug infestations in this population. To overcome this, Toronto Public Health has collaborated with a number of agencies and established a number of small local pilot initiatives. The St. Jamestown project is an example of one of these initiatives. In this case, TPH has worked with Community Resource Connection of Toronto (CRCT) to deal with problematic psycho-social and environmental issues. They are supported by a number of other organizations including St. Michael's Hospital. While this pilot project is in its infancy and is resource intensive, it may serve as a template in other similar high density communities across the city.

A number of agencies have been working on the bed bug problem in Toronto for some time and have had some success in controlling the problem. Toronto Shelter, Support & Housing Administration provides guidance and assistance to shelter operators about infestation control. The key steps they have outlined in controlling bed bugs include screening clients at intake, early identification of infestations and the application of control and prevention strategies (see Attachment 5: *A Handbook for Shelter Operators*).

Toronto Community Housing Corporation is currently in the process of implementing an enhanced integrated pest management program. This program focuses on all pest management issues and includes approaches that support and educate staff, supports to tenants, more frequent monitoring and more effective infestation identification and control processes (see Attachment 6: *Pest Management Program*, Toronto Community Housing Corporation).

Many of the bed bug control initiatives currently underway are being developed on an ad-hoc basis by different City Divisions. In most cases, this work is undertaken with limited inter-Divisional coordination and within existing limited divisional budgets. In moving forward in the development of a comprehensive approach to bed bugs, it is essential that the City coordinate its efforts to ensure a comprehensive, city-wide strategy is in place.

### **Best Practices in Other Jurisdictions**

TPH conducted an initial review of how public health jurisdictions in Ontario and the United States have responded to bed bugs. In general, practices are similar to that of Toronto Public Health. Most jurisdictions focus on the provision of information and advice, although some take a more active role. The City of Hamilton uses the power of the City's pesticide by-law, and inspects all hotels, motels and rental units if a complaint is made. Health departments in California respond to bed bug complaints as a public health nuisance under state legislation.

The City of Vancouver successfully implemented and evaluated a pilot project to systematically treat bed bug infestations. This project involved a variety of community partners from the City of Vancouver and the provincial government. The activities included tenant and owner education meetings, public education workshops, health and safety protocols, use of pesticides

as appropriate, as well as an evaluation. The pilot project resulted in a reduction in the number of infested rooms. A peer-to-peer education model was a key factor in the success of the project. Tenant assistants were trained to help with education meetings, preparation for treatment and consultation with tenants. The next steps for this pilot project are to secure funding to continue and expand the project, and to develop a comprehensive, community-wide strategy for bed bug control.

### **Action Committee**

In late January 2008 at the request of the Medical Officer of Health, an inter-Divisional meeting was convened to identify current bed bug control initiatives underway in the City and to identify individuals and organizations who would be appropriate to participate in an action committee.

The committee should include:

- City divisions (Toronto Public Health, Shelter, Support and Housing Administration, Social Services, Municipal Licensing and Standards);
- Housing providers (e.g. Toronto Community Housing Corporation);
- Health care organizations;
- Social Services;
- Community groups; and
- Landlord and Tenant representatives.

It is anticipated that the mandate of the action committee will include the following:

- Development of bed bug control strategies (immediate interventions and longer term maintenance);
- Identification of resource and funding requirements (internal and external);
- Development of an infestation tracking / reporting system;
- Development of public education and outreach strategies;
- A review of available corporate legislative tools that can be applied in bed bug control initiatives;
- Development of advocacy strategies (internal and external funding demands); and
- Establishing monitoring and evaluation processes.

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### **SIGNATURE**

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Medical Officer of Health

## ATTACHMENTS

- Attachment 1: Councillor Paula Fletcher's Letter, November 12, 2007  
(<http://www.toronto.ca/legdocs/mmis/2007/hl/bgrd/backgroundfile-8477.pdf>)
- Attachment 2: *Bed Bug Fact Sheet*, Toronto Public Health
- Attachment 3: *Bed Bug Information for Tenants*, Toronto Public Health
- Attachment 4: *Bed Bug Information for Landlords and Property Managers*, Toronto Public Health
- Attachment 5: *Bed Bug – A Handbook for Shelter Operators*, Toronto Shelter, Support & Housing Administration
- Attachment 6: *Pest Management Program*, Toronto Community Housing Corporation, November 16, 2007

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