

# TORONTO PUBLIC HEALTH



## The Toronto Bed Bug Project

# HISTORY

- Bed Bugs have been around since caveman days.
- Bed Bugs were prevalent in societies prior to and during World War II
- Bed bugs have developed resistance to pesticides
- Move to more health protective types of pesticides.
- Researchers state bed bugs return in a cyclical manner, re-emerging every 40 years.

# WHY ARE THEY BACK?

- Greater human mobility and travel
- Increase in high density living
- Lifestyle practices (curb-side shopping, acquiring second-hand household items)
- Infestations are difficult to manage and need time to eradicate
- Increased insecticide resistance

# INSECT IDENTIFICATION

- Accurate insect identification is key to an effective bed bug control plan
- Flat, oval shaped insect, grows up to 5mm in length
- Wingless and cannot fly or jump



# INSECT IDENTIFICATION

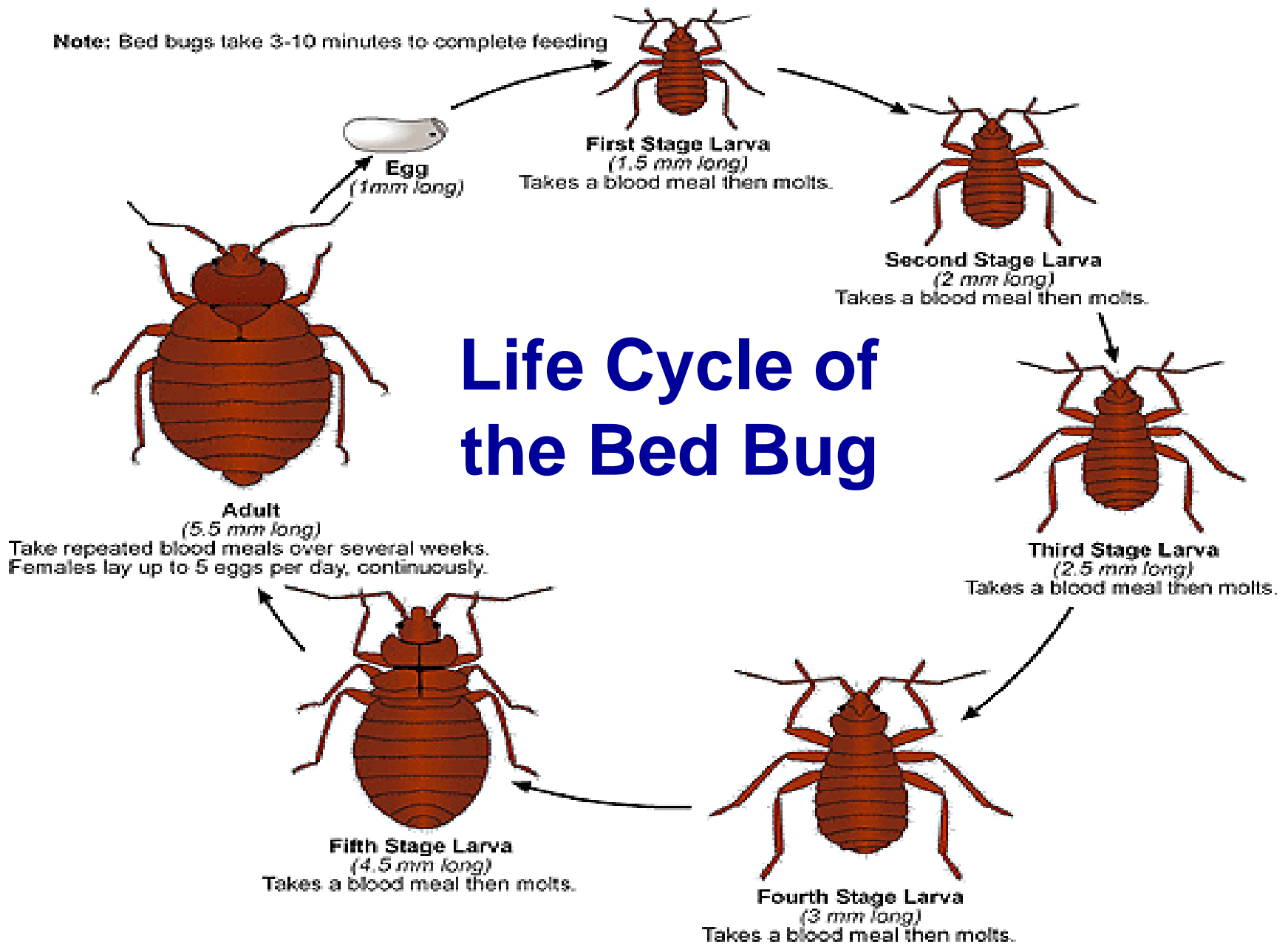
- Mahogany brown in colour before feeding
- Reddish brown in colour after feeding
- Eggs are pear-shaped and whitish in colour
- Excrement when sprayed with water will turn red



# LIFE CYCLE

- Each female can produce about 200 eggs
- The female lays 3 to 4 eggs following mating and a feeding
- Eggs attach onto surfaces
- Eggs hatch within 10 days to 14 days
- Adult bed bugs can survive for more than a year without feeding
- All stages (except for eggs) feed on blood of the host

Note: Bed bugs take 3-10 minutes to complete feeding



# What to Look For ?

- Live bed bugs
- Dead bed bugs
- Fecal Matter
- Blood Spots
- Bites on client
- Eggs
- Cast skins, sheddings



# BED BUG BITES

- Bite is painless and will occur during predawn hours and may resemble bites from other insects
- Travel over 15-20 ft. nightly to feed
- Feed every few days if host is available



# HEALTH EFFECTS

- No known cases of infectious disease associated with bed bugs
- No substantial scientific evidence of transmission of disease
- Viral antigens have been detected, however bed bugs lack the required proteins necessary for viral replication
- Research into health effects ongoing

# HEALTH EFFECTS

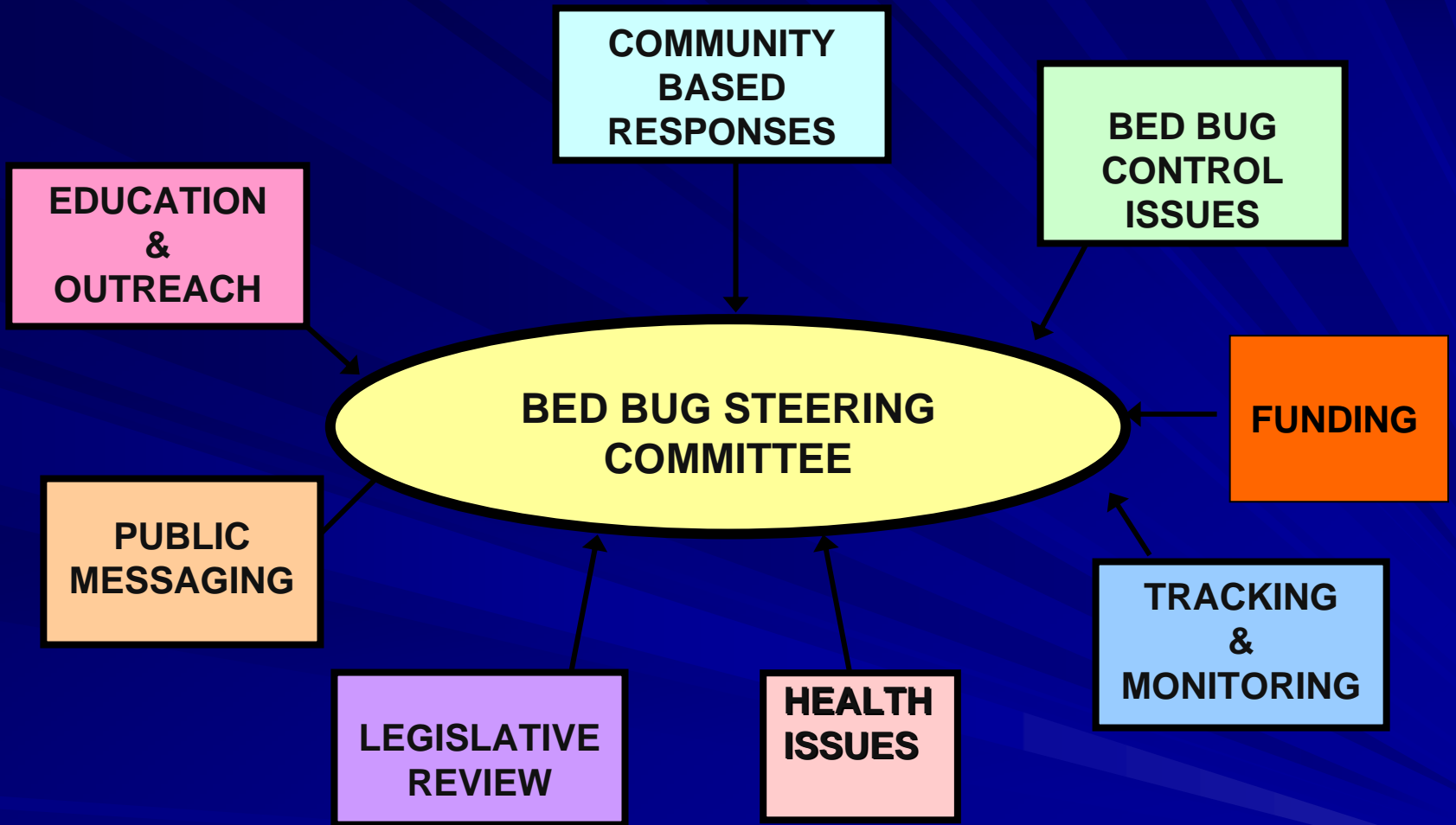
- Bites result in allergic reaction to varying degrees (no reaction/delayed/immediate)
- Reactions are due to salivary proteins
- Secondary bacterial infections and scar formation can occur through vigorous scratching
- Severe reactions may require medical attention
- **Serious social stigma and isolation associated with having bed bugs**

# The Issue in Toronto

- Over the last couple of years, complaints regarding bed bugs began to increase dramatically. In some cases, City Councillors became involved
- November 2007- Toronto Board of Health requests the Medical Officer of Health to investigate and report back on the issue of bed bugs
- January 2008-various city departments ( public health, shelter, support & housing, MLS, TCHC, social services etc) met to discuss issue of bed bugs
- February 2008-Board of Health report recommends an action committee on bed bugs be created, consisting of members from city departments, housing providers, community agencies, landlords, tenants etc
- March 2008-bed bug forum hosted by City of Toronto is held with 50 attendees from diverse backgrounds to discuss bed bug issues, develop principles of Bed Bug Action Committee, establish members,& identify key issues
- April 2008-bed bug action committee renamed “The Toronto Bed Bug Project”, members of steering committee selected, and 8 workgroups created.

# The Toronto Bed Bug Project Structure

- A report submitted by Toronto's Medical Officer of Health to the Board of Health on bed bugs recommended the development of a strategy to manage bed bug infestations in the city of Toronto :
- This resulted in the creation of the "The Toronto Bed Bug Project" consisting of a steering committee and 8 workgroups with representation from various Toronto Public Health Divisions, other city departments and several external stakeholders .
- Each workgroup will address specific issues such as:
  - Health Issues,
  - Legislative Review,
  - Education/Outreach,
  - Community Based Responses,
  - Bed Bug Control Issues,
  - Tracking and Monitoring
  - Public Messaging
  - Funding
- Workgroups members attend monthly meetings
- The Steering Committee meets on a monthly basis as well and receives discussion notes from all workgroups.
- All work completed by the Workgroups will be reviewed by the Steering Committee who will then report back to the Toronto Board of Health providing recommendations and strategies to manage bed bug infestations.



# Key Results to Date

- The Toronto Bed Bug Project has received local, and international recognition for the work that is ongoing.
- Improved communications—information on City of Toronto website has been enhanced. [www.toronto.ca/health/bedbugs](http://www.toronto.ca/health/bedbugs).
- The bed bug website will soon have a survey to gather information on how bed bugs has affected people's lives
- 17 Fact sheets have been developed on a variety of topics: Basic bed bug entomology, how to avoid hitchhikers, myths and facts about bed bugs, how to submit an insect for identification, what to do if your building has bed bugs for both landlords and tenants etc.
- Bed Bug fact sheet now available in 13 different languages: Hindi, Urdu, Chinese, Korean, Somali, Bengali, French, Arabic., Polish, Russian, Italian , Portuguese, Spanish
- Development of minimum treatment standard for pest control industry in conjunction with Structural Pest Management Association of Ontario.

# Key Results

- **Development of a preparation protocol in conjunction with the Structural Pest Management Association of Ontario.**
- **Promotion of the Integrated Pest Management (IPM) approach.**
- **Coordinating case management of difficult cases with Public Health Inspectors, City Departments and external agencies.**
- **Financial assistance provided to create bed bug manual for service providers and housing managers.**
- **Collaborated with OW/ODSP (social assistance agencies in Ontario) representatives have jointly developed protocols and established working relationships when seeking supports to assist clients who have been affected by bed bugs.**
- **Developed education days in which community agencies/ general public can attend education seminars on bed bugs hosted by Toronto Public Health**
- **To date staff have presented bed bug educational / training sessions to over 2000 people.**

# Ongoing work

- 5 pilot projects currently underway to investigate methods to control, reduce, manage and prevent bed bug infestations in their buildings.
- Development of public messaging campaign to reduce stigma (“anyone can get bed bugs”) and increase awareness to reduce infestations
- Assisting Solid Waste Division in the development of protocols for managing bed bug infested furniture, mattresses for the new “re-use” centers.
- Development of Furniture and Mattress Re-use/Donation protocols.
- Developing various tracking surveys to assist in determining the levels of infestation within the city
- Developing a pest control reporting system/website to monitor control methods applied
- Conducting joint inspections with Bug and Scrub of Seaton House. Bug and Scrub is a social purpose enterprise modeled program developed by the City of Toronto SSHA Seaton House .

# Toronto Public Health's Response

- Ensure all calls regarding bed bugs are recorded on Toronto Public Health's information system and forwarded to the district Public Health Inspector for follow up
- The Public Health Inspector will contact the client in a timely manner, provide information on bed bug identification, preparation for treatment, control measures, Integrated Pest Management (IPM), etc
- Conduct site visits (determined on a case by case basis) when necessary
- Assess clients/tenant's ability to do preparatory work
- Liaise with building management and pest control professionals to ensure appropriate pest control is provided
- In severe infestations, or in cases where clients are unable to properly, prepare their unit for pest control treatment, Public Health Inspectors may liaise with external agencies in an attempt to get the client the necessary assistance to properly prepare their unit, clean, launder clothing and dispose of infested items, etc.
- Public Health Inspector's will issue Orders under the Health Protection and Promotion Act as a last resort in situations where compliance with pest control is an issue with tenant or landlord.
- Follow up with client after treatment

# MYTHS AND FACTS

- **Myth:** Bed bugs are too small to see.

**Fact:** Although they may be difficult to find because they hide well, bed bugs are big enough to be seen with the naked eye. Bed bugs look similar to an apple seed in size and appearance.

- **Myth:** Walking into a room that has bed bugs means you will get bed bugs.

**Fact:** Bed bugs do not jump. They spend 90% of their time hiding and are usually active at night. Bed bugs avoid light and do not like to be disturbed.

- **Myth:** Bed bugs are only found in shelters; only poor people or dirty people get them.

**Fact:** Bed bugs can be found in hotels, motels, dormitories, apartments, condos, private homes, and even in some public places, such as businesses and offices. Anyone can get bed bugs.

# MYTHS AND FACTS

- **Myth:** Chemicals/pesticides will kill bed bugs.

**Fact:** Pesticide application alone will not kill bed bugs at all stages. Successful treatment depends on an Integrated Pest Management approach to bed bug control which involves, vacuuming, and steaming, laundering belongings, sealing areas and gaps where bed bugs can hide. Do not use over the counter pest control products or home remedies such as kerosene

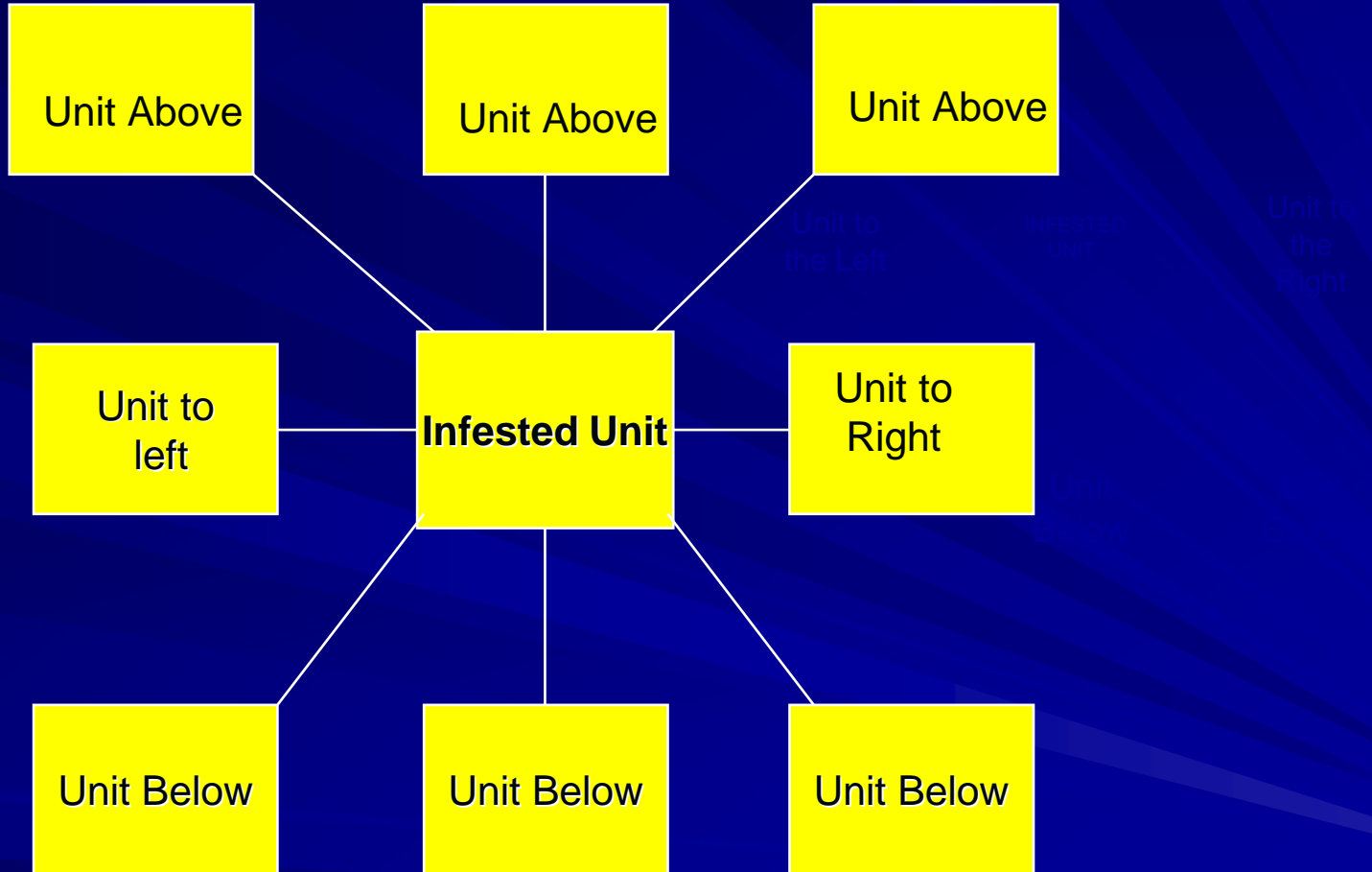
- **Myth:** Bed bugs cause disease.

**Fact:** Bed bugs are not considered a health hazard and do not transmit disease. Bed bug bites, however, can cause allergic reaction in some people similar to a mosquito bite. Frequent scratching of the bite marks or picking the scabs can cause infections. And people with severe and/or repeated infestations can feel anxious, worried or ashamed.

# Our Current Approach to Infestations

- **Block Inspections are vital! All units surrounding infested unit should be inspected to determine if infestation is also present ( see diagram)**
- **Block treatments are important. Units surrounding infested unit should be sealed and caulked, preventative treatment conducted to prevent migration. (preventative treatment may include dusting not application of pesticides)**
- **A minimum of two treatments of pesticides is required. A 2<sup>nd</sup> treatment is required 14-21 days after initial treatment to kill eggs.**
- **Furniture disposal should be a last resort.**
- **There is NO benefit to disposing of belongings and/or furniture during an infestation! Replacement items will only become infested.**
- **It is more beneficial to vacuum, steam treat and encase mattresses, box springs during infestations.**
- **Treating a unit that is only partially prepared for pest control is not practical as you will receive minimal results( some pest control companies will still treat. Reputable ones will not)**
- **It is illegal to apply pesticides in a unit that is not infested or as a “pre-caution” .**
- **Over the counter products do not work! In fact, they make the problem worse by forcing bugs into voids and helping bugs build resistance to pesticides.**
- **Home remedies and products available from the internet do not work!**

# Block Inspections



# TREATMENT PROCESS

There are 6 key points to a successful and efficient treatment :

- 1) **Inspect / Assess** - Before any pesticide is discharged for the control of bed bugs a pre-inspection must be done to determine whether there are in fact bed bugs. It is recommended that all units surrounding the infested one be inspected and determined if infestation exists. Infested units should be treated together.
- 2) **Identify** – Correctly identify the pest.
- 3) **Preparation** – Clean all items within infested area. Reduce any and all clutter where bed bugs can hide through storage and / or disposal.
- 4) **Treatment** – Consist of 2 steps:
  - a) Mechanical Cleaning
  - b) Residual Insecticides
- 5) **Tenant Follow Up** – Throughout this process raising awareness and educating the resident on reoccurrences, monitoring and prevention is recommended.
- 6) **Follow Up Inspection** – Thorough on-going inspections of the infested unit to ensure that no signs of re infestation is evident. In some case's follow up block inspections may be required.

# **DISPOSAL THE LAST RESORT**

Furniture that is infested with bed bugs that cannot be salvaged needs to be disposed of in a manner that will prevent the further spread of bed bugs. In the process of removing a piece of furniture bed bugs can escape into hallways and make their way into new apartments spreading the problem to new areas. Precautions need to be taken.

If you decide to throw out bed bug infested furniture:

- 1) Take apart, make sure it can not be used, deface or damage- in the case of mattresses; these can be slashed or otherwise damaged as to be made unusable
- 2) Wrap in plastic so bed bugs can not escape. This should be done in the unit before it is removed
- 3) Post a warning sign “Do Not Take”
- 4) Put in trash shortly before pick-up, so it doesn't sit for a long time

**For more information please contact Toronto Public Health at 416-338-7600**

# **BARRIERS TO SUCCESSFUL** **TREATMENT**

- **Lack of Preparation of Unit**
- **Clutter**
- **Hoarding**
- **Physical Challenges**
- **Mental Health Issues**
- **Access to Unit**
- **Lack of Compliance by Tenant**
- **Misinformed tenant/landlord**
- **Inappropriate Pest Control**

# Vulnerable Clients

- Majority of onsite bed bug investigations will be to assist vulnerable clients
- Cases are likely extremely complicated and time-consuming
- Predominantly, other issues are involved, commonly mental health, physical disabilities
- Clients are often socially isolated from family friends, other tenants, community
- Clients often may not have any support from family, friends or community agencies
- Clients usually do not have resources to pay for cleaning, preparation services
- Financial barriers are most common.

# Vulnerable Clients

- Typically in Toronto, a vulnerable client is identified through landlords, tenants, community agencies, etc.
- They may contact Toronto Public Health or SSHA - Bug and Scrub directly through various means.
- A joint visit to client is conducted with TPH and SSHA - Bug and Scrub.
- Bed bug infestation is confirmed, often along with other conditions such as unsanitary conditions, hoarding, clutter, roaches etc.
- Work to be conducted is evaluated. This may include; de-cluttering, extreme cleaning, laundering, sealing and caulking unit (and surrounding units), preparation work etc
- Who pays? Assessment of finances is completed
- City Divisions may investigate alternate funding options in cases where funding is not available.
- What if client is not on social assistance or is retired? CPP and Old Age Pension does not provide any funding to support their clients.
- Toronto Board of Health approved an emergency fund (November 2008) of \$75,000 that is shared between Toronto Public Health, Social Services, and Shelter, support and Housing Administration to assist clients who are most in need.

# **BUG AND SCRUB PROGRAM**


- **Bug and Scrub is a SPE modeled program that was created by the City of Toronto's Seaton House.**
- **The program creates real employment opportunities for homeless individuals and assists them to overcome the barriers that restrict their ability to gain employment and reintegrate successfully back into their community.**
- **Bug and Scrub provides responsible, reliable, and cost effective assistance to members of the community to respond to growing numbers of bed bug infestations across the City of Toronto**
- **Bug and Scrub is currently the only initiative of its kind in Toronto, which provides much needed support to those who are unable to prepare their units so that effective Pest Control measures can take place.**
- **Bug and Scrub has implemented a comprehensive steam treatment component to its service which enhances the odds of a successful Pest Control Treatment.**
- **The Bug and Scrub Supervisor also works with Public Health Inspectors and Landlord's to develop long term plans for buildings and communities which include Tenant and Staff Education Programs.**

# **BUG AND SCRUB RESPONSE**

- **Removal of all infested belongings and furnishings where disposal is necessary.**
- **Steam treatment of complete unit. Steam treatment of all furnishings deemed to have minimal infestation levels.**
- **Complete cleaning of kitchen and washrooms.**
- **Calking of all baseboards and crevasses where infestation is evident.**
- **Hand washing of all walls, baseboards, and floors**
- **Collection and removal of all clothing and linens. Wash, dry, fold, bag and return to resident within 24hours.**
- **Assess and report all maintenance/safety issues found to the tenant and caseworker on completion of contract.**
- **Follow up inspection to be completed within 15 Business days of completion.**
- **Tenant and Staff Education Programs**

# Bug and Scrub Successes

- Bug and Scrub has a 90 % success rate.
- Since Bug and Scrub was created in 2008 they have assisted 200 clients.
- The Bug and Scrub Supervisor along with Public Health Inspectors have visited and inspected over 2000 residential units so far in 2009 who are dealing with bed bugs or related issues.
- Bug and Scrub Supervisor is recognised as a bed bug expert
- Bug and Scrub's crew will extreme clean under any conditions, they understand mental illness, addictions and do not judge how one lives.



If you require further advice managing  
bed bug infestations

Contact :

Lead Specialists Toronto Bed Bug Project

Cathy Loik 416-338-8690

Alicia Lowe 416-338-8699

- Questions??????