

# Bed Bug Project Final Report 2012



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**Northwestern  
Health Unit**

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[www.nwhu.on.ca](http://www.nwhu.on.ca)

## INTRODUCTION

The purpose of this report is to provide evaluation and reflection on the activities implemented under the Ontario Ministry of Health and Long-Term Care (MOHLTC) Bed Bug Initiative funding. The report describes the process and results of each component of the approved proposal.

## BACKGROUND

Bed bugs are a small reddish-brown pest that is about the size of an apple seed. They are nocturnal and feed on the blood of humans and other mammals like dogs and cats. It is possible for a female bed bug to lay about 3 eggs every day. If not dealt with, infestations can explode rapidly. Although bed bugs have been shown to be possible carriers of “methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant Enterococcus faecium (VRE)”<sup>1</sup>, they are not known to transmit disease and are therefore considered a pest.

Bed bugs are found around the world and in the past were more common in developing countries. In the 1940s, bed bugs almost disappeared in Western countries due in part to the use of DDT<sup>2</sup>. Reports of bed bugs in developed countries are on the rise and it is believed that this resurgence is due to international travel and the resistance to insecticides and pesticides<sup>3</sup>.

In large population centers in Ontario, cases increased 600%<sup>4</sup>, from 2003-2005. Though everyone can get bed bugs, low income populations are more vulnerable. This is due to the use of second hand goods, quality housing issues, and ability to deal with the financial implications of an infestation.

Due to a rise in reported bed bug cases, MOHLTC acknowledged bed bugs as a growing health issue in the world, in Canada and in particular throughout Ontario. In 2011 the MOHLTC released \$5 million to the 36 health units in the province and launched a provincial website, [www.bedbugsinfo.ca](http://www.bedbugsinfo.ca). The website contains current information on best practices for prevention, treatment and elimination of bed bugs.

Health Units were invited to submit funding proposals for projects spanning one year to increase awareness on the identification and prevention of bed bugs.

## BED BUGS IN NORTHWESTERN HEALTH UNIT REGION

### Kenora Bed Bug Committee

The Northwestern Health Unit (NWHU) assisted with the creation of a Kenora Bed Bug Committee, established in January 2011. This Ad-Hoc Committee included representation from a variety of agencies within the community. Although local to Kenora, each member had regional networks and/or worked with the most vulnerable populations accessing health and social services, legal services, hospitality and property management.

In response to the MOHLTC Bed Bugs Initiative, the Kenora Bed Bugs Committee assisted the NWHU with their project funding proposal and was instrumental in the development of a bed bug information package and the first Bed Bug Information Session in April 2011.

### Funding for Bed Bug Initiative

The NWHU received MOHLTC bedbug funding to support projects on two streams: Education and Supports to Vulnerable Populations.

Components of the approved plan included:

- Assessing and reporting on the degree of infestation in the Kenora and Rainy River Districts;
- Holding community education sessions;
- Supporting vulnerable populations through partnerships;
- Identifying bed bugs in specific situations; and
- Assisting with policy development in the form of integrated pest management plans.

### Assessing the Level of Bed Bug Infestation - Bed Bug Questionnaire

Since bed bugs are not classified as a reportable issue to the health unit, information regarding bedbug activity in the region was needed from other sources. To assess the extent of bed bug infestation in the NWHU region various data collection methods were used. They included an on-line survey and a staff tracking form (using the same questionnaire questions) as well as key contact interviews with community partners. Questions for the bedbug questionnaire were developed to determine the location and extent of bed bug infestation in the NWHU region and to learn where individuals obtained information on the identification, prevention and treatment options for bed bugs. The staff tracking form was aligned with the on-line questionnaire and data on infestations were collected through person-to-person contacts.

### Survey Methodology

An eleven question survey was developed by NWHU staff and pilot tested amongst community representatives. The comments were reviewed and the questionnaire revised. A copy of the questionnaire is provided in Appendix 1: On-Line Bed Bugs Questionnaire.

The survey was administered concurrently using two approaches. They were:

- Internet-based 'snowball' sampling; and
- Person-to-person or telephone interviews.

Snowball sampling involves contacting primary individuals via an email message with a link to the NWHU questionnaire and a request that they complete the survey. Then they are asked to forward the link to others in their personal networks with the request that they complete the questionnaire and forward it on to their colleagues, friends and acquaintances. Sampling in this manner increases the sample size with each repetition and is a method of accessing populations who would otherwise be hard-to-find, difficult-to-reach or both (Atkinson and Flint, 2001)<sup>5</sup>.

## On-Line Bedbug Questionnaire

The questionnaire was administered through the Canadian commercial survey tool Fluid Survey. The survey was hosted on the NWHU web site ([www.nwhu.on.ca](http://www.nwhu.on.ca)). Additional analysis was carried out using Microsoft Excel. The survey was directed to obtain responses from:

- Persons who had direct experience with bed bugs or
- Persons who knew someone who has experienced bed bugs.

In order to increase public awareness of the survey, the online questionnaire was also promoted throughout the region by:

- Public service announcements on CKDR radio;
- Northwestern Ontario Associated Chamber of Commerce;
- Good Morning Kenora television talk show;
- Shaw cable roll; and
- The Kenora newspaper did an article.

The survey was launched on July 20, 2011 and closed to respondents November 22, 2011.

Through professional and community networks and associations, the NWHU was able to make 394 initial contacts via email to a broad range of groups and agencies. No emails were distributed in the smaller NWHU catchment communities of Pickle Lake, Ear Falls, Sioux Narrows-Nestor Falls, Emo and Machin although the catchment areas of many of the participating agencies overlap with these areas. Table 1 shows the initial number of contacts made by email in each of the communities.

Table 1: Location and Number of Initial Contacts

Community	Number of email Contacts
Atikokan	29
Ignace	21
Dryden	69
Fort Frances	36
Kenora	127
Rainy River	18
Red Lake	4
Sioux Lookout	90
<b>Total</b>	<b>394</b>

## Staff Tracking Form (Person-to-Person/Telephone Interviews)

The second method of data collection included person-to-person or telephone interviews with individuals who contacted the NWHU about bed bugs. For this part of the survey, the questionnaire was referred to as the Bed Bug Staff Tracking Form attached as Appendix 2. Using a decision tree method for managing the calls public health inspectors and public health nurses assisted in the completion of the questionnaires. This direct contact enabled staff to

complete the questionnaires and provide appropriate bed bug education and referrals. The staff tracking form included the same questions as those in the on-line questionnaire and the data from the staff tracking forms was merged with that of the on-line questionnaire for analysis. Over the four month period, the Staff Tracking Form received 46 responses.

## RESULTS

The merged Bed Bug Questionnaire received a total of 281 responses. Questionnaires were deleted for the following reasons:

- Non-response to question 1a);
- Bedbug experience was prior to 2011; and
- Bedbug experience was outside of the NWHU catchment area.

Following the deletions there were 202 questionnaires for analysis. Of these 156 were from the on-line survey and 46 from the Staff Tracking form. Because this survey methodology enabled questions to be self-reported, not all questions were answered. The first question in the questionnaire, question 1a), asked "Has the client or someone known to them experienced a bed bug problem or infestation?" The response options were 'yes' or 'no'. Individuals who reported 'no' to the question were bounced to the last question #11.

A descriptive analysis for questions 1b) to 10 was only completed on the questionnaires that responded 'yes' to question 1a). There were 95 'yes' responses of which 50 came from the online survey and 45 from face to face/telephone interviews. Analysis of responses to question #11 included both 'yes' and 'no' responses to question 1a). A complete summary of the questionnaire results are provided in Appendix 2: Bed Bugs Questionnaire Results.

Table 2: Distribution of Questionnaires

Distribution of Questionnaires			
	Online	Staff tracking	TOTALS
Total by type survey	235	46	281
Deleted - non response	(38)	0	(38)
Deleted - out of time	(17)	0	(17)
Deleted - out of place	(24)	0	(24)
Subtotal for analysis	156	46	202
'yes' reply to Q 1a)	50	45	95

### What we learned from the Questionnaire for NWHU

- Almost 2/3 of the respondents and those they live with had experience with bed bugs;
- 28% self-identified as tenants, 22.5% were community service workers and 14.2% were homeowners;

- 2/3 reported Kenora as the place of their bed bug problem;
- 60% of the bed bug problems were in multi-unit dwellings, 30% were in homes;
- 41% reported that the problem was 'serious' and 28% 'mild';
- ¾ of the respondents reported that 1-4 people were affected;
- 80% took action to deal with the problem; and
- Public media was identified as the primary source of information.

### Key Contact Interview Results

In addition to the on-line questionnaire and staff tracking surveys, seven community housing organizations were directly contacted with a request for bed bugs infestation data. Only one social housing organization responded to the request. The organization provides subsidized housing to low-income clients and services the Kenora, Dryden, Machin, Sioux Lookout, Pickle Lake, Red Lake, Ignace, Ear Falls and Sioux Narrows. This key community partner indicated that in 2010 and 2011 they experienced bed bugs cases in Kenora, Red Lake, and Sioux Lookout. Follow up data from this community organization was obtained for the period of January to March 2012 and they indicated that bed bugs infestations remained about the same. Challenges for this organization occurred around infestation of units as people from infested apartment blocks within the area were re-infesting other units.

A client survey on bed bugs was conducted for a two week period at this community organization. Fifteen clients responded regarding bed bugs knowledge. Data from this indicated that the respondents felt they knew what to do to identify, prevent and deal with bed bugs. It also highlighted that public media and friends played an important role in the information they had obtained on bed bugs.

In November 2011, a second organization reported that they had 2 apartments with serious cases of bed bugs. The units were treated, a bed bugs dog was brought in, and the NWHU conducted 2 information sessions - one for agency staff and the other for tenants.

Seven pest management companies were contacted with a request for bed bugs data for 2010 and 2011. Over the project timeframe, two operators provided data. One operator reported 8 treatments in Kenora and surrounding areas from January-September 2011. A second operator provided 14 treatments in 2010, 16 treatment between January and October 2011 and 19 treatments between October 2011 and March 2012. One treatment could mean multiple treatments in the same residence.

### Limitations of Results

Snowball sampling is not random. It may be biased because respondents may self-select others who may be similar to themselves either professionally, socially or culturally. The risk is that the study may miss the specific group for whom we were trying to reach.

Another limitation is the small sample size left for analysis once data was cleaned. Small sample sizes do not permit generalizations nor do they provide any strength in the results from replications of responses.

Having bed bugs is viewed as negative, therefore, there may be underreporting of those affected. Because the questionnaire is self-reported, there may be difficulties remembering the extent of an infestation and the costs associated with the removal of bed bugs.

Using percentages to report may be misleading because the number of respondents in this survey overall is small. It is important to consider that the responses to the questionnaire were self-reported and based upon one's perception and recall.

## **FUNDING STREAM 1 - BED BUG EDUCATION**

### **Information Sessions**

From July 2011-March 2012, 21 educational information sessions were presented to a variety of user groups. In total, the 21 sessions allowed for the NWHU to educate 330 participants on bed bugs prevention, bed bugs identification, action to take when dealing with an infestation, policy development, and Integrated Pest Management (IPM) Plans.

Two publicly advertised information sessions were offered, one in Dryden and one in Sioux Lookout. These sessions were advertised in the community paper and an email was sent out to targeted organizations.

### **Information Session Results**

Participant evaluation forms were handed out to assess the effectiveness of the information session following most sessions. Participants were asked questions related to their ability to identify, prevent, and take action against bed bugs. The majority of respondents agreed that they are able to identify, prevent and take action against bed bugs after the session.

The questions and comments that participants brought up during the sessions highlighted both unsafe methods of eliminating bed bugs and incorrect beliefs about bed bugs. Such ideas as stuffing plastic bags into heating pipes to stop their spread or using common aerosol pesticides on bedding were discussed and corrected.

The sessions were a good platform to discuss and debunk misunderstandings regarding bed bugs. Types of questions included: type of cleaning products to use, what to eat to keep the bugs away, and inquiries into home-made products to help in the elimination of bed bugs.

Participants were also interested in the role of the NWHU in the bed bugs issue.

There was also concern from those in social service agencies regarding clients who had to work through the Landlord Tenant Board and Legal Aid to resolve bed bugs issues, because of the length of time associated with the process.

## FUNDING STREAM 2 - SUPPORT TO VULNERABLE POPULATIONS

### Housekeeping Kits

In a joint effort between Northwest Housing and the Northwestern Health Unit, housekeeping kits were created and distributed to Northwest Housing clients in need. The kits consisted of cleaning products and cleaning tools, in addition to housekeeping and bed bugs information.

Since cleaning is a factor contributing to successful treatment, the housekeeping packages were deemed important to this population. 100 kits were developed and distributed to clients in subsidized units or who were determined to have a need for the cleaning products. While tenants were appreciative of the package, no evaluations were returned so there is no data to determine impact.

### Incentives for Policy and Procedure Development

Vacuums were purchased for 2 social service agencies working with vulnerable populations, as part of the Policy and Procedure incentive program. Both agencies were developing their own IPM strategy and the vacuums were to assist with bed bugs clean up.

## ADDITIONAL OBSERVATIONS

There was a cross section of clients inquiring about bed bugs. It appears the majority of those seeking information from the Northwestern Health Unit were tenants, but inquiries also came from landlords and homeowners.

The questionnaire indicated that the majority of infestations were from multi-unit dwellings, which were defined as apartments, motels and hotels. The large majority of reports were made by tenants in apartment blocks. A very small number were regarding hotel/motels.

Several landlords expressed frustration with tenant cooperation in eliminating bed bugs. Landlords were usually concerned with tenant co-operation and tenant unwillingness to incorporate good bed bug prevention practices. NWHU investigation into specific complaints revealed high use of pesticide, and unclean units.

Fear of reporting bed bugs to landlords may be a factor contributing to the spread of bed bugs throughout low income housing in our communities. There is indication that some tenants fear reporting this information due to fear of eviction from the landlord.

Financial challenges appear to be a factor in tenant participation in the cleanup of bed bugs. Several callers to the NWHU expressed concern in their ability to follow a cleanup process because they did not have a vacuum or could not afford laundry at that time.

Financial challenges also appear to be a factor for landlords. Landlords have mentioned their unwillingness to pay \$5000-\$15000 for a pest management company to clean up multiple

apartments when there is no reassurance that the apartments won't be infected again in a month.

There is also emotional stress associated with bed bugs and the treatment of bed bugs. In one example, a caller described experiencing 5 treatments in a two month period, 1 follow-up session, a bed bugs dog inspection and some replacement of goods which resulted in a \$3500-4000 estimated expense.

Re-infestation of units seems to be a challenge for housing providers. It is felt by some in the social service community that visitors of other infested blocks are re-infesting those blocks that have been treated.

Initial evaluation of the questionnaire data showed no indication of bed bugs in the Rainy River District. A phone assessment of the Fort Frances, Rainy River and Atikokan area agencies was undertaken and all agencies contacted stated that there was no indication of bed bugs with their client base. However, in February 2012, the Fort Frances Northwestern Health Unit office received its first indication of bed bugs through a social service agency. To help educate those working with high risk populations in the Fort Frances area, three information sessions were provided. Two agencies participated in the sessions and eight other agencies were contacted for the distribution of bed bugs information materials. Between January and March 2012 the NWHU offices in the Rainy River District have received 4 reports about bed bugs.

## RECOMMENDATIONS

Based on the information we have received from our questionnaire, information sessions and additional information, it is recommended that the Northwestern Health Unit:

- Work with Community Stakeholders to address the issue of vulnerable populations and bed bugs in their community, and in developing Integrated Pest Management Plans;
- Continue to provide education to agencies that work most closely with vulnerable populations;
- Assist/support/encourage organizations to develop internal policies regarding bed bugs, and be active in educating clients about bed bugs;
- Conduct a comprehensive public education campaign to increase awareness of bed bugs and the [bedbugsinfo.ca](http://bedbugsinfo.ca) website;
- Maintain its website and update it with new links or documents that may help assist the public; and
- Assist the public to advocate for Provincial or Federal level changes to provide one-time compensation or tax break assistance because eliminating bed bugs will have financial implications for the hospitality industry, social housing, and for the independent homeowner.

## REFERENCES

<sup>1</sup> Christopher F. Lowe and Marc G. Romney. Emerging Infectious Disease, Volume 17, Number 6—June 2011. [http://wwwnc.cdc.gov/eid/article/17/6/10-1978\\_article.htm](http://wwwnc.cdc.gov/eid/article/17/6/10-1978_article.htm) Retrieved December 2011.

<sup>2</sup> Newsweek (September 8, 2010). "The Politics of Bedbugs". <http://www.newsweek.com/2010/09/08/conservatives-blame-environmentalists-for-bedbugs.html>. Retrieved October 28, 2010.

<sup>3</sup> A Romero, MF Potter, DA Potter, KF Haynes (2007). "Insecticide Resistance in the Bed Bug: A Factor in the Pest's Sudden Resurgence?". *Journal of medical entomology* Mar;44(2):175-8. <http://www.ncbi.nlm.nih.gov/pubmed/17427684> Retrieved 2012-04-20.

<sup>4</sup> Grey Bruce Health Unit, October 11, 2007. Health news for Southwest: <http://thehealthline.ca/displayArticle.aspx?id=841>. Retrieved December 2011.

<sup>5</sup> Atkinson, Rowland and John Flint. Accessing Hidden and Hard-to-Reach Populations: Snowball Research Strategies. Retrieved April 17, 2012 <http://sru.soc.surrey.ac.uk/SRU33.html>

## Appendix 1: On-Line Bed Bugs Questionnaire

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- 1a. Have you or somebody you know experienced a bed bug problem or infestation?
  - Yes
  - No
- 1b. Who experienced this problem or infestation?
  - You and/or others you were living with
  - Someone else you know
2. Check the item that most closely describes the “hat you are wearing” when providing information about this particular problem or infestation:
  - Homeowner
  - Tenant
  - Landlord
  - Health care worker
  - Community Service/Program Worker
  - Apartment, hotel, motel or camp worker
  - Employed in a business or public building
  - Other, please specify:

3. In what community did this problem or infestation occur?
  - Kenora
  - Other
  - Dryden
  - Sioux Lookout
  - First Nations\*
  - Red Lake
  - Balmertown

\*First Nation communities are within our geographic area but not under our jurisdiction.

4. Where did this problem or infestation occur?
  - Home
  - Community Service/Program
  - Apartment, hotel, motel or camp
  - Business or other public building
  - School
  - Health care facility
  - Other, please specify:
5. When did this problem or infestation first occur?
  - Before 2010
  - January - March 2010
  - April - June 2010
  - July - September 2010
  - October - December 2010

- January - March 2011
  - April - June 2011
  - July - September 2011
  - October - December 2011
6. In your opinion, how would you rate the severity of this problem or infestation?
- Mild
  - Somewhat serious
  - Serious
  - Extreme
7. Approximately how many people were affected\* by this problem or infestation?
- 1-4
  - 5-14
  - 15-25
  - More than 25
8. Was any action taken to deal with the problem or infestation?
- Yes
  - No
- Identification:
- Bed bugs identified by the Health Unit, pest control company or other knowledgeable professional
  - Bed bugs identified by affected individuals
  - Not positively identified as bed bugs
- Landlord notification:
- Landlord/building owner was notified
  - The legal clinic or landlords/tenants advocacy group was contacted
- Cleaning:
- Partially cleaned the home, facility or belongings
  - Fully cleaned the home, facility or belongings
  - Furniture and/or other belongings were thrown out or abandoned
- Relocation:
- Services and/or residents moved out temporarily
  - Services and/or residents moved out permanently
- Services received from a pest control company:
- Information and advice
  - Inspection services
- Treatments received from a pest control company
- Only 1 treatment (cost):
  - More than 1 treatment (total cost):
- Other actions:
- Applied off-the-shelf chemicals, insecticides or pesticides
  - Other, please specify

9. Listing of communities is represented in the Final Report to the Ministry.
10. Did you or anybody else affected by this problem or infestation see a doctor or other health care professional because of bed bug bites?
- Yes
  - No
  - Not sure
11. Where have you learned about bed bugs? (Check all that apply.)
- Other people
  - Online from various websites
  - [www.bedbugsinfo.ca](http://www.bedbugsinfo.ca) (MOHLTC site)
  - Northwestern Health Unit fact sheets
  - Northwestern Health Unit website ([www.nwhu.on.ca](http://www.nwhu.on.ca))
  - Northwestern Health Unit staff
  - Public media (newspapers, TV, radio, etc.)
  - Other, please specify:
  - Don't know anything about bed bugs

## Appendix 2: Bed Bugs Staff Tracking Form

Reporting Staff's Name: \_\_\_\_\_ Office: \_\_\_\_\_ Date: \_\_\_\_\_

Please fax to Valdine McEwen within 2 working days of completion 807-468-4970.

### Reason for Call

### Resources / Referrals / Advice Given

Landlord  
Complaints

- NWHU Resource: [Bed Bugs Who Can Help](#)
- Landlord Tenant Board 1-888-332-3234 or [www.ltb.gov.on.ca](http://www.ltb.gov.on.ca)
- Legal Aid (Kenora 468-8888, 1-800-403-4757; Fort Frances 274-5327, 1-800-799-2485; Atikokan 597-6697, 1-800-597-2811; Red Lake & Ear Falls 1-800-403-4757, Sioux Lookout 1-800-465-7552)
- Referral to [www.bedbugsinfo.ca](http://www.bedbugsinfo.ca)
- Other \_\_\_\_\_ (please specify)

Bites and Health  
Concerns

- NWHU Resource: [The Facts about Bed Bugs](#)
- Referral to Physician or Nurse Practitioner
- Referral to [www.bedbugsinfo.ca](http://www.bedbugsinfo.ca)
- Other \_\_\_\_\_ (please specify)

Identification

- Referral to Pest Management Company
- Referral to PHI
- Referral to [www.bedbugs.info.ca](http://www.bedbugs.info.ca)
- Other \_\_\_\_\_ (please specify)

Prevention

- NWHU Resources: [Travel Tips](#), [Keep Bed Bugs Out](#), [The Facts About Bed Bugs](#)
- Referral to [www.bedbugsinfo.ca](http://www.bedbugsinfo.ca)
- Other \_\_\_\_\_ (please specify)

Action

- NWHU Resources: [Checklist for Bed Bug Inspection](#), [What to do if you have Bed Bugs](#), [Checklist for You and Your Landlord](#)
- Other \_\_\_\_\_ (please specify)

Treatment

- Referral to Pest Management Company for Treatment (check local Yellow Pages)
- Some financial coverage of treatment may be available for those on Ontario Works or ODSP (Ontario Disability Services Program - must contact their local office.
- Other \_\_\_\_\_ (please specify)

Type of residence or building affected: \_\_\_\_\_

Approximate number of people affected: \_\_\_\_\_

OTHER DETAILS ABOUT THE PROBLEM OR INQUIRY:

\*Please refer client to our Bed Bug Survey accessible at [www.nwhu.on.ca](http://www.nwhu.on.ca) .

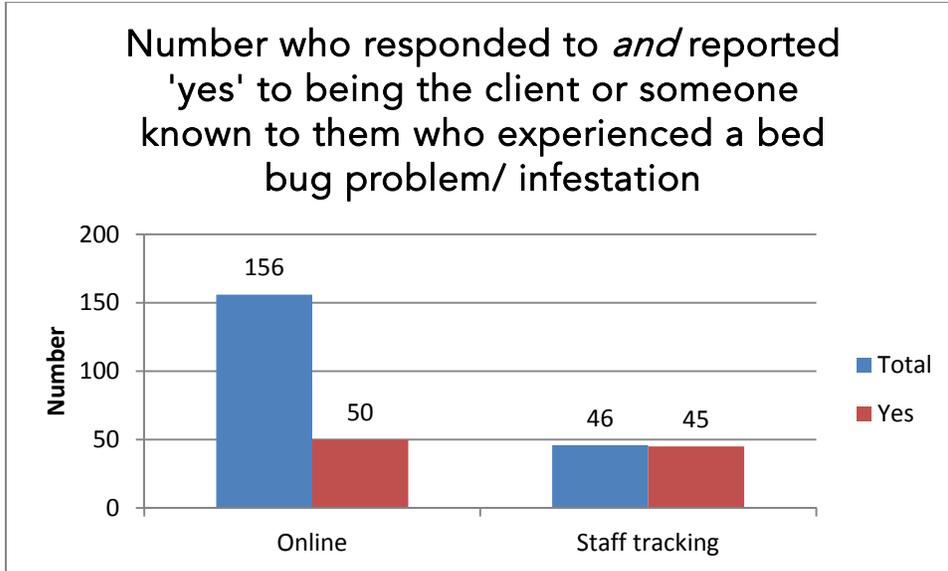
Does Client want a follow-up call from Bed Bug Health Promoter? \_\_\_\_ Yes \_\_\_\_ No

Client Name: \_\_\_\_\_ Community: \_\_\_\_\_ Phone: \_\_\_\_\_

### Appendix 3: Bed Bug Questionnaires Results for NWHU

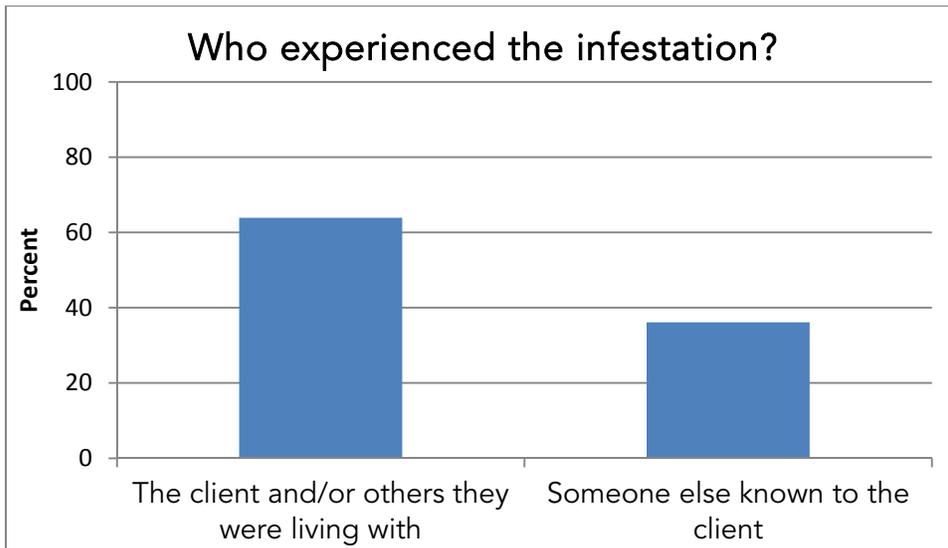
1a. Has the client or someone known to them experienced a bed bug problem or infestation?

- There were 202 responses to question 1a) 'yes' or 'no'. There were 95 'yes' responses. Responses that were 'no' were bounced directly to question #11.

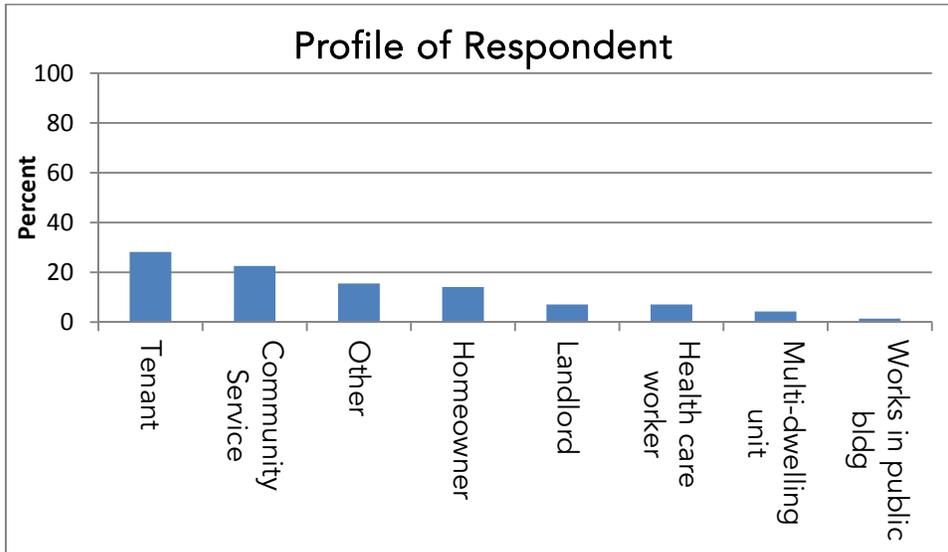


1b. Who experienced this problem or infestation? N=72

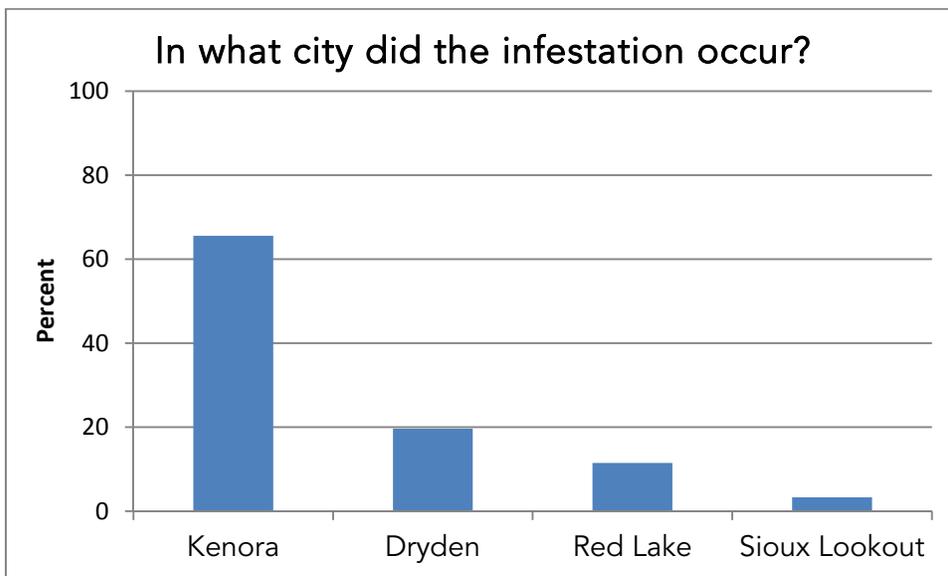
- 64% indicated that they and others they live with experienced the bed bug problem.



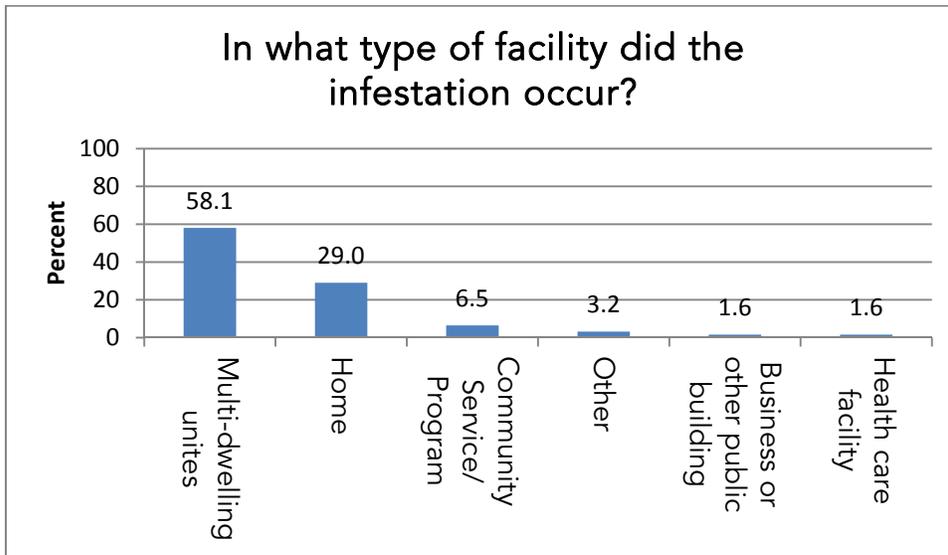
2. Describe the “hat you are wearing” when providing information about this particular problem or infestation. N=71
  - Tenants represented 28.2 %, community service workers 22.5% and homeowners 14.2% of the persons who reported a bed bug problem or infestation. Friends/relatives/visitors were included in the 15% who reported under ‘other’.



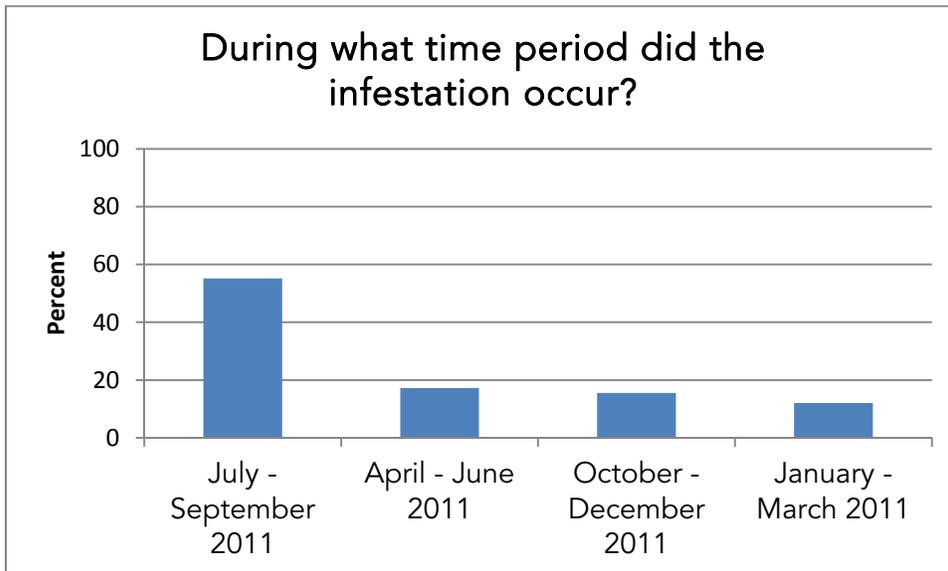
3. In what community did this problem or infestation occur? N=61
  - 66% of the respondents reported a problem or infestation in Kenora; 20% reported Dryden and almost 12% Red Lake.



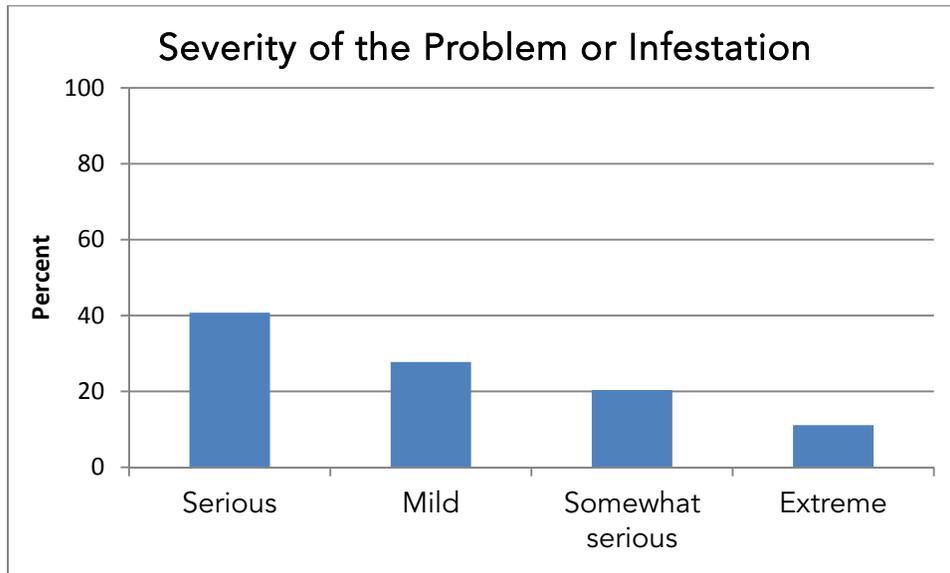
4. Where did this problem or infestation occur? N=62
- Almost 60% of the problems or infestations with bed bugs were in multi-dwelling units, while 30% were in homes.



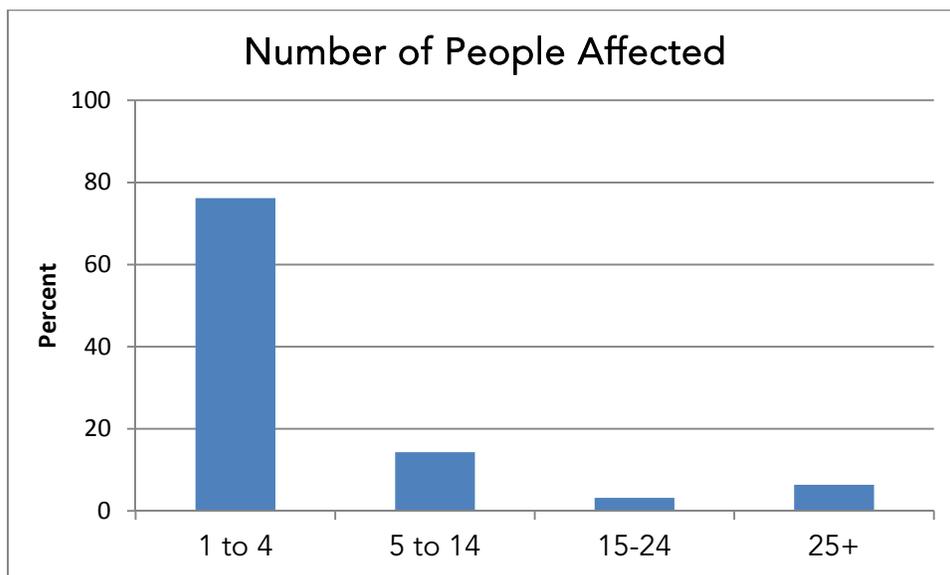
5. When did this problem or infestation first occur? N=58
- 55.2% reported that the bed bug problem or infestation took place between July and September 2011. During this time period, the media had been reporting on bed bug activity throughout the province.



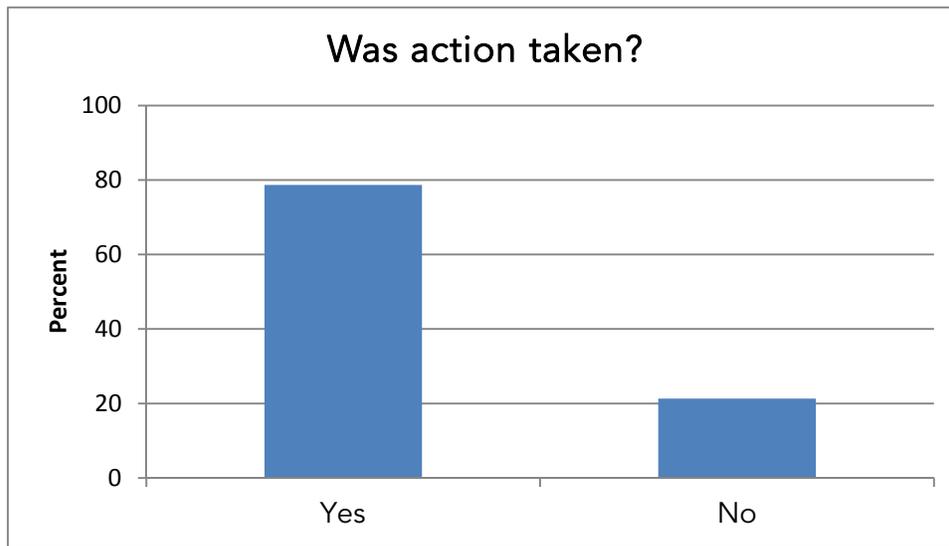
6. In your opinion, how would you rate the severity of this problem or infestation? N=54
- 40.7% indicated that the problem or infestation was 'serious' followed by 27.8% who reported 'mild'.



7. Approximately how many people were affected by this problem or infestation? N=63
- 77% estimated that 1 to 4 people were affected by the bed bug problem while 14% reported that 5 to 14 people were affected by the bed bug problem.



8. Was any action taken to deal with the problem? N=61
- Almost 80% (78.6) reported that they took action to deal with bed bugs.

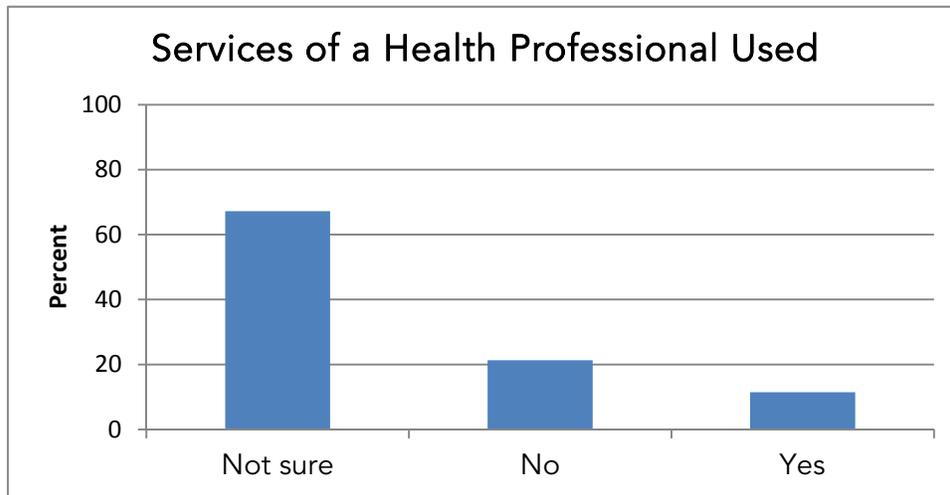


9. Which of the following actions were taken to deal with the problem or infestation?
- Respondents were able to identify what actions were taken to deal with bed bugs. More than one action may have been taken.

Table 3: Action Taken

Identification	Landlord notification	Cleaning	Relocation	Services received	Treatments received	other
20 respondents had the health unit identify the bed bug,	33 respondents notified landlord or building owner	3 respondents partially cleaned clothing and furniture	8 respondents moved out temporarily	9 respondents received information and advise	7 respondents used one professional treatment	22 respondents applied off shelf chemicals
13 respondents identified the bed bugs themselves,	2 respondents notified legal clinic/tenants advocacy	18 respondents fully cleaned furniture and belongings out	5 respondents reported moving out permanently	10 respondents received inspection services from pest control	8 respondents used more than one professional treatment	9 respondents did other actions such as commercial cleaners and dry cleaners
1 respondent did not have bed bugs identified		13 respondents threw out furniture and belongings			Treatments were reported to cost from a low of \$525 to a high of \$3,000	

10. Did you or anybody else affected by this problem or infestation see a doctor or other health care professional because of bed bug bites? N=61
- 11.5% noted that someone had seen a health professional about bed bug bites and 2/3 (67.2%) were not sure.



11. Where have you learned about bed bugs? N=241
- Public media was identified as the most popular place for learning about bed bugs. Responses to the NWHU included, staff, pamphlets and website. Medical personal, hospital, Not for Profit Housing, employers and Pest Control companies were identified under 'other'.

