

Baltimore City Health Department  
Healthy Homes Division  
Lead, Asthma & Injury Prevention Bureau

## **Bed Bug Response Plan**



April 20, 2009

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## BED BUG RESPONSE PLAN

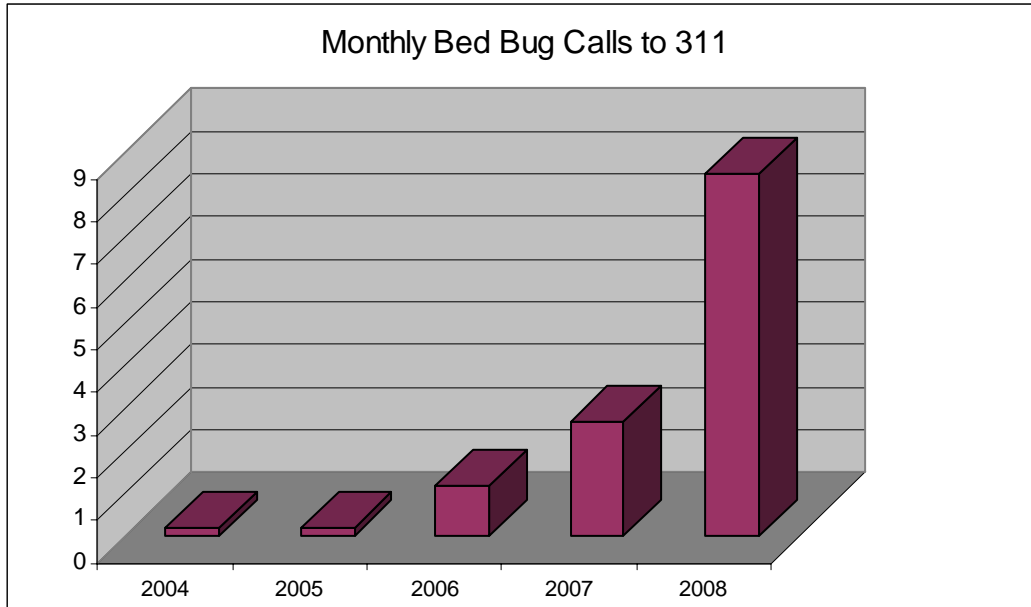
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### BACKGROUND

Bed bugs are on the rise nationally and internationally, and Baltimore is no exception. In the United States and Europe, evidence for the increase in bed bugs is predominantly anecdotal, with the best data provided by pest control companies. During the past ten years, pest management companies have seen increases in bed bug control calls.<sup>1,2,3,4</sup> For example, Orkin's bed bug calls increased by 70% in 2002, and again by 70% in 2003. In Baltimore, the number of 311 calls about bed bugs per month rose from an average of 0.16 per month in 2004 to 8.5 per month in 2008. This represents more than a 50-fold increase in four years. (See Figure 1 below).

Figure 1.



Other data sources suggest that bed bugs are increasing in Baltimore. In order to assess the bed bug problem, Baltimore Healthy Homes Division staff surveyed several pest control companies. No surveyed companies kept records that distinguished bed bug extermination from other exterminations. However, Atlantic Pest Management estimated that bed bug calls had risen from one per month three years ago to 8-10 per month currently, an 8-10 fold increase in three years.

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<sup>1</sup> Krueger L (2000). Don't get bitten by the resurgence of bed bugs. *Pest Control*, 68(3):58-64.

<sup>2</sup> Cooper R, Harlan H (2004). Ectoparasites. Part three: bed bugs & kissing bugs. In: Hedges S, ed. *Mallis' handbook of pest control*, 9th ed. Cleveland, OH, GIE Publishing: 494-529.

<sup>3</sup> Potter M (2004). Your guide to bed bugs. *Pest Control Technology Magazine*, 32(8): pullout supplement between pages 12 & 13.

<sup>4</sup> Gooch H (2005). Hidden profits: there's money to be made from bed bugs – if you know where to look. *Pest Control*, 73:26-32.

Other pest control companies and local social service and government agencies also reported increases. Survey responses indicated that bed bugs were not confined to families of a particular socio-economic status. Pest control companies and the Hispanic Apostolate noted the pronounced bed bug problem in the Latino community, perhaps due to travel and frequent relocations. Agencies contacted include the Housing Authority, the Hispanic Apostolate, the Baltimore Medical Systems clinic at Highlandtown, Atlantic Pest Control, and Home Paramount Pest Control.

The rise of bed bugs in Baltimore presents a significant public health challenge. Medical conditions associated with bed bugs include multiple itchy bites and inflammation, secondary skin infection, a minor potential for anemia from blood loss, minor risk of anaphylaxis, stress, anxiety, and sleeplessness. [1] In some cases patients have developed more serious reactions.<sup>[2],[3]</sup> Those most vulnerable to adverse health effects from bed bug bites include the elderly, disabled, and young children. There is also potential for overexposure to pesticides used to control bed bugs. Residents exposed to bed bugs may suffer emotional distress, exacerbated by the financial burdens of discarding belongings, buying products to control bed bugs, and contracting professional pest control services.

Compared to other common pests, bed bugs are more difficult and expensive to eradicate. Integrated pest management techniques of reducing food, water, and access – combined with the application of baits and traps – are almost always sufficient to eliminate cockroaches and mice. These techniques can be performed by laypersons without the need for professional intervention. The same is not true for bed bugs. Bed bug extermination often requires multiple professional treatments.<sup>5</sup> In addition, all exposed clothes and stuffed animals must be bagged and cleaned or removed. Furniture and mattresses with holes or tears must be marked, contained, and thrown out. Professional treatment of bed bugs ranges from approximately \$300 (one-time treatment) to \$900 (multiple treatments with 90 day warranty).

Public resources, including enforcement, do not match the scope or complexity of the bed bug problem. Housing Code limits enforcement in the case of bed bugs, like other pests. Landlords are only responsible for extermination in the case of multi-family dwelling units. The lack of enforcement authority will make elimination of bed bugs in Baltimore difficult. In addition to weak enforcement power, there are limited resources for bed bug support. A call to 211 (United Way's referral resource) confirmed that the only source of free or reduced cost mattresses in Baltimore is through furniture vouchers given out in very limited quantities through the Department of Social Services. Moreover, low-income families will find it difficult to pay for a \$900 treatment.

## **CURRENT PROGRESS**

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<sup>5</sup> Bonnefoy X, Kampen H, Sweeney K (2008). Public Health Significance of Pests, *World Health Organization*. Available at: <http://www.euro.who.int/document/e91435.pdf>.

The Healthy Homes Division consulted with the New York City Department of Health, the Environmental Protection Agency, and the National Center for Healthy Housing to develop its bed bug plan. It has taken the following steps to strengthen the City's response to bed bugs:

### **1. Establishing an inspections and enforcement program**

The Healthy Homes Division started performing bed bug inspections on December 1, 2008. Many of these inspections followed complaints to 311. The Division developed a specialized bed bug protocol, a violation notice, a work plan, and educational materials. Enforcement is pursued under Housing Code for all multi-family dwelling units and businesses.

A competent bed bug response requires technical expertise and tailored treatment. In November 2008, staff received a five-hour, in-home training addressing bed bug identification, safety measures, visual inspection techniques, and extermination techniques.

To further the Division's mission of comprehensively and efficiently improving the health and safety of housing, all individuals with bed bug complaints are offered the opportunity to receive a healthy homes assessment. This assessment covers lead, moisture, mold, asthma triggers (where appropriate), fire safety, and injury concerns.

### **2. Expanding public health education on bed bugs**

The Division will educate Baltimore residents about bed bugs through public service announcements, a *promotores* (community outreach workers) program, and dissemination of educational materials. The EPA is partnering with us to develop mass media (television, radio, and print) educational messages in Spanish. This targeted outreach will be conducted as a part of the EPA Pesticide Program's Hispanic Outreach Initiative.

In addition to working with EPA on a Spanish-language media campaign, the Division has integrated bed bug education into the lead and healthy homes *promotores* program launched in January, 2009. The program is training 12 *promotores* to educate at least 360 Latinos in Baltimore City about lead, bed bugs, integrated pest management, and asthma. Educational materials have been developed and adapted for this program as well as for outreach efforts to English-speaking communities.

### **3. Supporting the Housing Authority's bed bug response**

The Healthy Homes Division has collaborated with the Housing Authority of Baltimore City (HABC) to improve and streamline its response to bed bugs. Heads of maintenance and management at all 32 HABC sites have received information about the need to immediately respond to bed bug complaints, and information on how to minimize infestations. While multiple HABC sites have reported bed bugs, no infestation has gone untreated. Additional in-depth training regarding bed bug infestation management is a priority topic in the upcoming pest management trainings for all maintenance and management personnel in leadership positions for HABC.

### **4. Providing national leadership**

Baltimore City is one of the first cities in the nation to be developing an in-depth protocol, violation

notice, work plan, and response system. The EPA invited representatives from the Healthy Homes Division to participate in a “Bed Bug Summit” that will bring together national experts to explore the various dimensions of the bed bug problem and develop a strategic action plan for addressing bed bugs at the national and local levels.

## **NEXT STEPS**

The Division will continue to increase education, enforcement, and inspections, as described above. In addition, the following steps are needed in order to eradicate bed bugs in Baltimore:

### **1. Develop support for low-income families with bed bugs**

Given the expense involved to exterminate bed bugs (extermination, mattress covers, mattress, additional furniture); it is important to increase the availability of support services. The Division is investigating the possibility of developing a contract with an integrated pest management company to provide bed bug extermination services. Mattress vouchers would also support bed bug elimination in Baltimore.

### **2. Increase bed bug surveillance**

Current data on bed bugs in Baltimore is limited.

- 311 calls appear to be the best data source on bed bugs. However, as the Health Department draws greater attention to bed bugs, there may be a rise in 311 bed bug calls – regardless of whether or not the number of bed bug infestations has increased. The Healthy Homes Division is tracking the areas of the city where calls originate to help us identify high-risk areas and target education and services.
- The Healthy Homes Division proposes working with local pest control companies to increase their tracking of bed bug service requests. This will facilitate targeted education in areas most affected by bed bugs.
- The Health Department could consider mandated bed bug reports by providers. According to the World Health Organization, “Currently, there is no requirement to report bed bug infestations to any public health or other government agency at any level.” Bed bugs are a medical concern, and therefore mandated reporting may be appropriate. However, the best way to determine whether symptoms are caused by bed bugs is to perform an inspection. Symptoms by themselves can easily be mistaken for other diseases and/or pests.

### **3. Provide education in Baltimore Schools**

Schools have identified bed bugs on their property in New York City, Cleveland, and Brooksville, Kentucky. In Baltimore, there are reports of children being sent home from school due to bed bugs. The Health Department provided education to approximately 300 school health aides and nurses in January 2009. This education should be expanded to include guidance to schools on how to handle bed bug outbreaks.