

BEDBUG, MICE AND RAT COMPLAINTS AND PESTICIDE USE AMONG WASHINGTON DC RESIDENTS BY NEIGHBORHOOD: GIS ANALYSIS

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Introduction: There are public health concerns about urban pests such as bedbugs, mice and rats. In 2008, GWU's Environmental and Occupational Health Department surveyed 789 Washington DC residents in order to elicit attitudes towards residential pests and pesticides. Participants needed to be DC residents, >18 years, with valid IDs. Responses to questions relating to bedbugs, treatments for bedbugs, mice, rats and treatments for mice and rats were analyzed by city wards in order to map the responses. This is the largest survey of pests and pesticide uses in any urban area, and we expected lower income wards 7 and 8 to have the most pest complaints and the most use of pesticide products.

Methods: Ward-specific results were compared to all responses for DC as a whole using the non-parametric Wilcoxon signed-rank test. Significant differences ($p < 0.05$) were then displayed using Geographic Information Systems (GIS) to highlight findings for selected pest complaints and pesticide uses between individual wards and all of Washington DC.

Results: DC Ward 1 reported significantly ($p < 0.05$) more bedbug problems than the city as a whole. Ward 1 reported significantly higher use of mattress powder/dust than DC. However, Ward 4 reported more bedbug treatments by pest control officials than DC as a whole. Wards 4, 5 and 8 reported significantly more frequent mice problems than DC as a whole, more frequent use of glue, sticky, and snap traps (both by the respondents themselves or someone in their home). Ward 1 also reported significantly more frequent rat problems than DC as a whole. Findings do not suggest that lower income Wards 7 and 8 in DC have the most pest problems/complaints.

Conclusion: Based on our survey, bedbug treatment and residential educational efforts should focus on Ward 1. Mice and rat intervention and educational efforts should focus on Wards 4, 5 and 8. After treatment and educational efforts are completed, DC residents should be resurveyed to test effectiveness.