



HHS Public Access

Author manuscript

J Environ Health. Author manuscript; available in PMC 2017 August 24.

Published in final edited form as:

J Environ Health. 2015 November ; 78(4): 28–29.

Rodent Control and Public Health: A Description of Local Rodent Control Programs

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From the 1900 San Francisco bubonic plague epidemic to the 2012 Yosemite National Park hantavirus outbreak, rodents have been a feature of the environment and can compromise the public's health¹. In addition to potentially carrying parasites and pathogens, Norway rats, roof rats, and house mice have been destroying infrastructure, infesting houses and businesses, and damaging property for centuries. To this end, the National Association of County and City Health Officials (NACCHO) and the Centers for Disease Control and Prevention (CDC) performed a profile of nine rodent control programs across the nation, within large local municipalities. The goal of the project was to understand the current capacity of local rodent control programs across the United States, and identify best practices, challenges, and technical assistance needs.

A majority of the surveyed programs were located in a comprehensive vector control program in the environmental health division of the local health department. However, in New Orleans (LA), the Mosquito, Termite, and Rodent Control Board within the City Department of Homeland Security assumed the operations of the program from the health department as they felt the duties were more aligned with those of the board. A majority of the programs were supported by local funds. Only two programs, Los Angeles County (CA) and Shelby County (TN), are funded by service fees. In Shelby County, the program is fully funded through a State-legislated Vector Control Fee. Overall, funding for a majority of the programs has either decreased or remained the same within the past five years. Of the five programs who noted a decrease in funds, these reductions resulted in significant staffing and activity cuts. For example, in Los Angeles County the program previously addressed rodent complaints from owner-occupied properties for free, but now has a pay-for-service fee.

All of the programs use Integrated Pest Management (IPM) concepts in their rodent control efforts³. Largely complaint-based, five programs conducted a variety of proactive activities. Generally, the number of complaints reported within the past year ranged from 10–2,000 per month depending on the jurisdiction. Some programs provided services beyond investigating complaints, with activities ranging from selective baiting of manholes to conducting thousands of inspections. In New York City (NY), the Rodent Reservoir Analysis project identified and studied “rat reservoirs” in local neighborhoods. Inspectors set out bait for the rats, closed up burrows, and worked with the community on best practices. In Philadelphia (PA), the program staff includes mechanics who perform rat-proofing services each year, such as repairing plumbing and filling holes. None of the programs are charged with

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tracking rodent-borne illnesses or rodent-related injuries/bites, but rely upon notifications from their epidemiology divisions. Among the 9 surveyed sites, zero human cases of rodent-borne diseases have been confirmed in the past year; however some programs reported rodent-related injuries/bites. Not all of the programs have the capacity to capture rodents and test for pathogens. Los Angeles County previously found rodents carrying a number of human infectious agents, specifically strains of *Rickettsia*⁴ and *Bartonella*⁵ species bacteria.

The programs indicated that controlling rodent populations is difficult when it is largely complaint-based. Additionally, participants described a lack of understanding of rodent control by property and business owners, as well as a lack of science and research on the subject. Public education is a priority for every program surveyed. All programs make a great effort to inform the public about the importance of rodent control; from the New Orleans' Pest Control Academy, to San Francisco's (CA) educational meetings with the local Professional Gardeners Association. In Austin (TX), the rodent control program successfully educates and reaches out to many different local populations, like the Spanish-speaking community. Additionally, all programs collaborate extensively with other local departments or organizations. In Washington DC, the program works closely with the DC Department of Public Works to provide public, live Web chats or "Rat Summits" to discuss rodent control practices. In New York City, the program leads the Mayor's Rodent Task Force with more than 20 city departments. In Multnomah County (OR), the program partnered with local universities to conduct research and found local rodents testing positive for human diseases like hepatitis E, leptospirosis, and toxoplasmosis.

Some of the most significant challenges for rodent control include a lack of funding and resources. With enough staff, funding, public education, resources, and technology, programs feel that rodent control can be even more successful. Rodents play a significant role in transmission of a large number of diseases, and in many places rodents live in close contact with humans⁶. While many rodent control programs have seen reductions in rodent populations and rodent-borne illness, as a result of their work, it has been difficult to sustain these positive outcomes long-term. Framing rodent control as a public health issue, and collaboration amongst public health professionals and their communities will help create long-term and more successful solutions to control rodent populations and keep rodent-borne diseases at bay.

A comprehensive profile for each participating program will soon be made available on the NACCHO website (www.naccho.org).

Biographies

Lisa Brown is a Senior Program Analyst with the National Association of County and City Health Officials (NACCHO), and focuses her work on Environmental Health, Pandemic Preparedness, & Catastrophic Response.

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Methods

- NACCHO and CDC invited nine cities representing the diversity of the nation to participate in a profile of their rodent control programs.
- NACCHO conducted in-depth telephone interviews with each participating program.
- Key questions and priority areas for the program assessment questionnaire were developed through research and consultation with rodent control subject matter experts.
- The questionnaire contained sections that corresponded to the 10 Essential Environmental Public Health Services.²

Participating Jurisdictions

- San Francisco Department of Public Health (CA)
- Shelby County Health Department (Memphis, TN)
- Los Angeles County Public Health Department (CA)
- Austin/Travis County Health and Human Services Department (Austin , TX)
- Multnomah County Health Department (Portland, OR)
- New York City Department of Health and Mental Hygiene (NY)
- Washington, DC Department of Health
- City of New Orleans Department of Health