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Homeless Encampments Characteristics Critical in Reducing Vector-Borne Disease Potential

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ABSTRACT: As of January 2019, a survey of homeless people in Alameda County, CA, documented 8,022 homeless individuals countywide, including 6,312 unsheltered people. Dozens of homeless encampments exist throughout the County, and most lack sanitation facilities (e.g., rodent-proof garbage storage and weekly waste removal; sanitary toilets; and running water for hand washing, showering, or laundry). This situation represents a breakdown of the sanitation interventions that can lead to the outbreak of vector-borne disease (e.g., 2020 outbreaks of flea-borne typhus in southern California). Some characteristics of surveyed encampments make them more or less suitable for Norway rat population establishment and the exhibition of problems associated with rodent ectoparasites. Many urban encampments are in parts of Oakland that have old infrastructure including sewers that support an endemic population of Norway rats and where there may be undetected sewer breaks that allow these rats into these homeless encampments. Anecdotally, before the introduction of unmanaged leftover food sources (garbage), rats would go virtually unnoticed due to their low population, but with a regular supply of food, their populations apparently skyrocketed. Unmanaged rodent populations at homeless encampments are a major public health concern for local public health, particularly considering that ectoparasites such as fleas are potential rodent-borne disease vectors.

KEY WORDS: California, homeless encampment, homeless population, Norway rat, Oriental rat flea, *Rattus norvegicus*, unsheltered population, vector-borne disease, *Xenopsylla cheopis*

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INTRODUCTION

As of January 2019, a Homeless Point-in-Time count in Alameda County, CA, documented 8,022 homeless individuals countywide, including 6,312 unsheltered people (ASR 2020) (Table 1). About half of surveyed individuals were residing in Oakland. Dozens of homeless encampments exist throughout the County (Figure 1). Most lack sanitation facilities (e.g., rodent-proof garbage storage and weekly waste removal; sanitary toilets; and running water for hand washing, showering, or laundry). Where garbage provides food resources, rats have the potential to colonize and rapidly populate (Parker 1990), with a single pair resulting in as many as 15,000 additional rats in one year (Klein 2017). Fleas associated with rats can transmit disease, making rodent infestations a potential public health threat. The first major interaction of the Alameda County Vector Control Service District (ACVCSD or ‘District’) with the City of Oakland’s homeless encampments was to help identify a parcel with a series of homeless encampments in the surrounding area, with an existing Norway rat infestation and garbage removal only every few weeks (allowing ample food for rodents).

Table 1. Homeless Point in Time Count, Alameda County, CA, 2013-2019.

Year	Number of Homeless County	Number of Homeless Oakland	Alameda County Population*
2013	4,264	2,922	1.58 million
2015	4,040	2,191	1.635 million
2017	5,629	2,761	1.66 million
2019	8,022	4,071	1.671 million

*United States Census Bureau 2010 data

METHODS AND RESULTS

A five-city-block area in West Oakland took several staff teams hours of work placing live traps for disease surveillance, and then several visits to burrow bait with Ditrac™ tracking powder (a.i. diphacinone), Fastrac™ pellets (a.i. bromethalin) and Contrac pellets (a.i. bromadiolone; Bell Labs, Madison, WI), as well as Drione Dust™ (Bayer Environmental Science U.S., Peoria, IL) burrow treatment for Oriental rat fleas (*Xenopsylla cheopis*). Treatment apparently decreased the flea problem enough for the City to construct their first navigation center. The navigation centers provide secure housing in double occupancy, one-room cabins, in a 24-hour secure compound with weekly containerized garbage removal, private pest control services, sanitary toilets, hand washing stations, and mobile shower and laundry services a few times a week. This was the model we used in helping to prepare several subsequent navigation centers, where the unsheltered received temporary shelter for up to six months while receiving the various services provided by the City of Oakland, nonprofit organizations, and Alameda County, with the aim of helping the people to get back on their feet and into permanent housing. As our evaluation of homeless encampments moved south toward Hayward, the location of encampments and surrounding features changed. In most of the cities in Alameda County, sleeping and camping in public places is not allowed and is enforced; therefore, the homeless encampments are in cryptic areas along rail corridors, or creeks and flood control channels. Some of the creek-side encampments are in difficult to access areas and may involve several property owners sharing the extent of the encampments, making jurisdiction complicated.

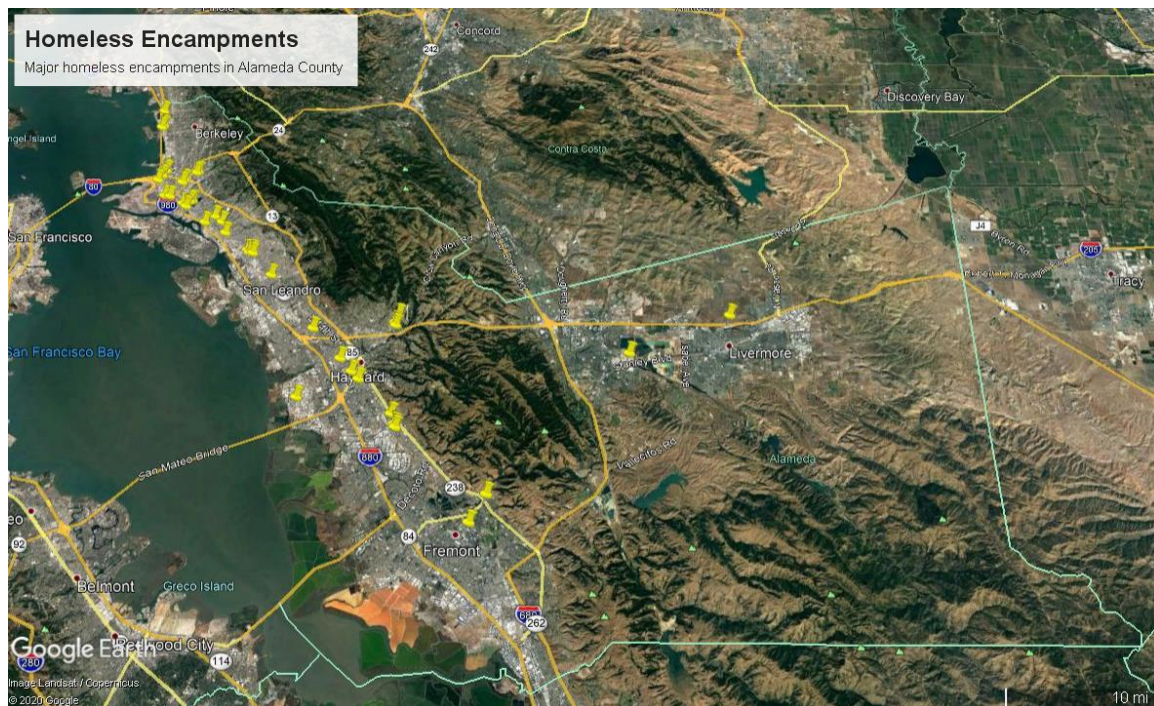


Figure 1. Map of homeless encampment in Alameda County, California, indicated by yellow pins. (Google Earth)

One extensive encampment we call the “Grove Way” encampment was located along San Lorenzo Creek in Castro Valley, CA and spread out over a quarter mile, involving over 40 acres. We were quite surprised when we did not discover a rat problem. There was ample garbage and refuse strewn throughout the area, but the only rat in this locale was the native dusky-footed wood rat (*Neotoma fuscipes*), and a sparse population of California voles (*Microtus californicus*). This area is forested by oak trees (*Quercus* spp.) with an apparent abundance of acorns. This camp had to be closed and cleaned due to its effect on the creek, which is also part of the County flood control system that leads to the San Francisco Bay. Residents of the encampment were bathing, washing clothing, and dumping debris into the creek. The tons of items accumulated along with the banks were at risk of entering the waterway during a heavy rain event and creating blockage that could lead to flooding. There has been a decades-long effort to keep refuse out of San Francisco Bay, and beyond flooding this posed an imminent contamination problem for our bay. A massive cleanup was undertaken by Caltrans and Alameda County. Ample notice was given to the residents, with three “pop-ups” at which service providers set up tables and invited the encampment residents to stop by and get some food, drink, hygiene supplies, and information regarding the alternative shelter to be provided by a local church. The cleanup cost nearly \$1,000,000, and Caltrans had to hire a hazardous materials removal service that trucked most of the material to Utah for incineration. Alameda County Public Works sent numerous truckloads of debris to the local landfill. A few of the encampment residents stated that they had lived at the camp for twenty years.

Continuing south, we surveilled four encampments that were located along the Union Pacific rail corridor in

Hayward, CA: Sandoval Way, Hayman Street, Huntwood Drive, and Industrial Parkway. All had ample garbage, but no Norway rats were present. The Hayman encampment had discarded whole turkeys in packages that had no signs of predation, as well as large chunks of roast beef, bread, and snacks with no apparent take. This contrasted with observations in the Oakland encampments, where the rats seemed not to let food go to waste. The overall sanitation was lacking, but the risk for vector-borne disease seemed negligible compared to Norway rat infestations in Oakland, where *X. cheopis* fleas (the main vector of bubonic plague) and *Ctenocephalides felis* fleas infected with *Rickettsia felis* are known, though human disease manifestation is not documented. None of these residents reported rats, fleas, or ticks, but rather a desire to be left alone.

In Oakland, the last three navigation centers the City constructed were not at locations where Norway rats were present, though the City still provided pest control services. The City developed a partnership with a local hospital to organize a managed navigation center in a prominent city park, Mosswood. There not only was a heavy Norway rat problem, complicated by an encampment on Caltrans property less than 400 feet away, that spills into the park. Caltrans has cleaned their site numerous times, though infrequent enough to let the conditions deteriorate. This subcamp is less than 50 feet away from a children’s education center, but with few options for relocation this camp will remain, while the District controlled the rats at the in-the-works managed encampment. The sponsor provided weekly containerized (although not well-managed) garbage removal; portable toilets and hand washing stations; shower and laundry services; fencing (although inadequate), and 24-hour security. It only took a couple months to prove this situation was unmanageable,

with the result of another large donation of about \$1,000,000 to house the original 35 unsheltered for one year in local residential hotels and apartments. The park has subsequently banned camping, and with Norway rat control measures is now restored to public use, with only the Caltrans section remaining a problem.

DISCUSSION

ACVCSD has worked with the City of Oakland for the last six years and helped to open several navigation centers to replace the unmanaged homeless encampments and abate large Norway rat populations. Amid all this effort and expense, the homeless population has almost doubled. The West Coast has a mild, temperate climate, which is almost ideal for camping and one of the reasons there are so many camping opportunities in California. Preventing problems in advance would be best. For example, areas where there is old infrastructure (specifically, degraded sewer systems) may be kept unoccupied by issuing specific direction as to preferred alternative sites where the unsheltered can camp. This sort of site facilitation can be controversial because it implies the city is sanctifying the encampment, which raises liability issues.

Planning can be lengthy and costly and public funds are limited, but proactive planning is necessary to effectively mitigate public health and other issues associated with unmanaged homeless encampments. Reactive efforts have been less than efficient; a current example is one well-intentioned response to the COVID-19 pandemic: the State of California leased two hotels in Oakland to house the homeless at \$1,000,000 per month, each (San Francisco Chronicle 2020). This is \$189 per night per person, or \$5,670 per month, per person, which is almost double the average rent in Oakland (RENTCafe 2020). The excessive cost could have been prevented by proactively providing reasonable housing prior to the pandemic. Despite current efforts, most local homeless encampments are still fully occupied, and only minor sanitation interventions in light of COVID-19 have been implemented as of this writing. Encampments have been left in place and no removals are planned at this time.

ACKNOWLEDGEMENTS

Thanks to all our staff at Alameda County Vector Control Services District who work at these homeless encampments. The conditions are deplorable, but our staff work with care and concern for the unsheltered, striving to improve their living conditions, and protect them from vector-borne disease during this ongoing manmade disaster.

LITERATURE CITED

- ASR (Applied Survey Research). 2019. Alameda County 2019 homeless count and survey. EveryOne Home, ASR, and Aspire Consulting LLC. <https://everyonehome.org/main/continuum-of-care/everyone-counts/> Accessed June 2019.
- Klein, A. 2017. Menopause-causing bait is curbing rat populations in New York. *New Scientist*. 05 May 2017.
- Los Angeles Times. 2019. Filth from homeless camps luring rats to L.A. City Hall, report says. <https://www.latimes.com/local/lanow/la-me-ln-rats-homelessness-city-hall-fleas-report-20190603-story.html> Accessed June 2019.
- Parker, S. 1990. Grzimek's encyclopedia of mammals, Volume 3. McGraw-Hill Publishing Company, New York, NY.
- RENTCafe. 2020. Average rent in Oakland, CA. <https://www.rentcafe.com/average-rent-market-trends/us/ca/oakland/> Accessed April 2020.
- San Francisco Chronicle. 2020. Alameda County moves hundreds of homeless to hotels amid fear of coronavirus outbreak. <https://www.sfchronicle.com/bayarea/article/Alameda-County-moves-hundreds-of-homeless-to-15219680.php> Accessed April 2020.