

TITLE: What Front-line Service Providers for People Experiencing Homelessness Know About Body Lice and Associated Diseases — Colorado, 2022

AUTHORS (FIRST NAME INITIAL LAST NAME): R. Henderson¹, S. N. Rich², B. Sprague³, C. Grano³, D. W. McCormick⁴, E. Mosites⁵, T. Bostic², S. E. Rowan^{6,7}, G. E. Marx^{2,7,8}

INSTITUTIONS (ALL): 1. University of Colorado School of Medicine at Colorado State University, Fort Collins, CO, United States.
2. National Center for Emerging and Zoonotic Infectious Diseases, Division of Vector-Borne Diseases, Centers for Disease Control and Prevention, Fort Collins, CO, United States.
3. Communicable Disease Branch, Colorado Department of Public Health and Environment, Denver, CO, United States.
4. National Center for Emerging and Zoonotic Infectious Diseases, Division of Vector-Borne Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States.
5. Office of the Deputy Director for Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States.
6. Public Health Institute at Denver Health, Denver Health and Hospital Authority, Denver, CO, United States.
7. School of Medicine, Department of Medicine, Division of Infectious Diseases, University of Colorado, Aurora, CO, United States.
8. Colorado School of Public Health, Aurora, CO, United States.

Purpose of Study: *Bartonella quintana* is spread by body lice and is a major cause of culture-negative endocarditis. In the United States, *B. quintana* is diagnosed almost exclusively in people experiencing homelessness, including during a recent outbreak in Colorado that resulted in two surgical cardiac valve replacements. Basic hygienic services, such as showers and laundry, are critical to prevent and manage body lice infestations. However, the extent to which front-line workers, who provide access to hygienic services for people experiencing homelessness, are aware of the risk for lice and louse-borne diseases and associated need for hygienic services is unknown. We conducted a survey among front-line service providers to identify knowledge gaps, attitudes, and practices related to lice infestations and louse-borne diseases among people experiencing homelessness.

Methods Used: Homeless shelters and street outreach organizations were identified by the Colorado Department of Public Health and the Environment and invited to participate in the survey. Participating organizations identified volunteer or staff workers with regular client interaction to complete a 20-minute, in-person, standardized survey assessing knowledge, attitudes, and practices regarding body lice and louse-borne diseases. A senior member at each organization also completed a site-level standardized assessment form on policies and resource availability at each site.

Summary of Results: Forty-nine service providers from nine shelters (n=36) and four street outreach teams (n=13) across six counties in Colorado completed the survey. Most participants correctly identified body lice (76%), knew that body lice could spread by sharing clothing and bedding (96%), and knew that washing clothing and bedding could kill body lice (61%). However, 20% reported not knowing what to do if a client had body lice, and the majority (96%) reported not knowing about *B. quintana* infection. Showers with hot water were available at all participating shelters; though, regular shower or laundry access was not available to people experiencing unsheltered homelessness. Training for front-line service providers about infectious disease risk among people experiencing homelessness was inconsistent and generally did not include vector-borne diseases.

Conclusions: Most participating front-line service providers correctly identified body lice and method of lice transmission but reported limited knowledge of body lice management protocols and *B. quintana* infection. Participants reported that people experiencing sheltered homelessness usually have regular access to, and make use of, hot showers and laundry but people experiencing unsheltered homelessness do not. These results will be used to inform development of educational materials among service providers for people experiencing homelessness to increase awareness of body lice risk and effective management and to reduce morbidity associated with *B. quintana* infection.

