Abstract

Health researchers and policy-makers increasingly use volunteered geographic information (VGI) to analyze spatial variation in health and wellbeing and to develop interventions. As socially constructed data, health VGI reflect the people who perceive issues and choose to report them, and the digital systems that structure the reporting process. We propose a conceptual framework that describes the interlocking effects of socioeconomic, behavioral, geographic, and technological processes on VGI accuracy and credibility. GIS and statistical methods are used to analyze social and geographical biases in health-related VGI through a case study of bed bug complaint data from New York City’s 311 system. Reports of bed bug infestation from 311 are mapped and modeled to uncover associations with socioeconomic and built environment characteristics. Factors associated with bed bug report credibility are examined by comparing characteristics of confirmed reports with those for reports in which inspectors found no evidence of infestation (negative reports). A multilevel model of credibility incorporating report-, building-, and tract-level variables reveals strong geographical and socioeconomic biases, with negative reports generated more frequently from high-value residential buildings located in high-income neighborhoods with predominately white, non-Hispanic populations. Using 311 data for all bed bug reports, rather than confirmed reports, obscures the burden of these pests in high poverty neighborhoods and diminishes socioeconomic disparities. Mistaken reporting also has economic costs, as each report triggers an inspection by city inspectors that entails time, monetary, and opportunity costs.

Article published in *Health & Place* [1].

**Associated Project:**
Socio-Spatial Ecology of the Bed Bug and its Control [3]

**DOI for citing:**
https://doi.org/10.1016/j.healthplace.2019.102282

**Source URL:**

**Links**