Editorial

Urgent Challenges for Local Public Health Informatics

P. Joseph Gibson, PhD; Gulzar H. Shah, PhD, MStat, MS; Laura C. Streichert, PhD, MPH; Linda Verchick, MS

Good informatics improves public health. It enables public health agencies to be more responsive and productive.[1] Improved accessibility to data can create more opportunities to improve health through partnerships, greater accountability, and improved efficiency. Informatics methods and approaches can address lack of timely data[2] and enable quicker investigation of arising topics, from opioid abuse to factors related to school dropout.[3,4]

Advances in information technology and growing public expectations for accurate, real-time information have spurred the evolution of many local health departments (LHDs). Electronic databases increasingly store information about basic agency operations. Epidemiological data that were once collected manually are now captured and managed electronically. To help such changes occur, and to ensure that the systems created are helpful rather than burdensome, public health departments need organizational and workforce capabilities in informatics. This *Journal of Public Health Management & Practice* supplement highlights the current landscape of local public health informatics. Across the articles, we see 3 important, urgent challenges: (1) building informatics capabilities in smaller LHDs, (2) ensuring informed and consistent leadership, and (3) establishing effective training.

Informatics Improvement Beyond Large LHDs

The studies in this supplement demonstrate the opportunity to improve informatics in LHDs serving populations of all sizes. But they also consistently demonstrate that large LHDs have significantly more capabilities in informatics and biosurveillance than do small LHDs. Of the approximately 2500 LHDs in the United States, about 140 serve populations of more than 500 000 whereas about 1500 serve populations of fewer than 50 000. Given that those large LHDs serve almost half of the country's population, it is vital to improve informatics in the large jurisdictions. This large LHD improvement is occurring through their own resources, federally sponsored fellowships, and grants. The LHDs with populations under 50 000 may serve less than 15% of our country's population, but improving their informatics is essential to building a resilient, responsive public health system.

This supplement clarifies the needs of these small LHDs. The prevalent practice of paper record-keeping discourages innovative use of information, decreases productivity, and hampers responsiveness.[5] These LHDs face notable challenges around security, interoperability, and impacts of leadership changes. But as the Pomporaug District case study demonstrates, with stable leadership and consistent effort, small LHDs can improve their informatics.[1] Other supplement studies indicate that shared governance models may also have factors associated with better informatics.[6] This supplement contains indications of promising strategies.

The large, innovative LHDs tend to attract what resources become available for improving public health informatics. We in the public health informatics

Author Affiliations: Marion County Public Health Department, Indianapolis, Indiana (Dr Gibson); Jiann-Ping Hsu College of Public Health, Health Policy and Management, Georgia Southern University, Statesboro (Dr Shah); International Society for Disease Surveillance, Brighton, Massachusetts (Dr Streichert); and Southern Nevada Health District, Las Vegas (Ms Verchick).

The authors declare no conflicts of interest.

Correspondence: Gulzar H. Shah, PhD, MStat, MSS, Jiann-Ping Hsu College of Public Health, Health Policy and Management, Georgia Southern University, PO Box 8015, Statesboro, GA 30460 (gshah@georgiasouthern.edu).

DOI: 10.1097/PHH.0000000000000479

community need to assess whether current efforts to improve public health informatics have an appropriate amount of focus on informatics in the many, smaller LHDs. We need to take on the challenge of finding strategies that will address their needs.

Leadership Engagement

Informatics capacity will remain a vital, crosscutting, foundational capability for public health agencies.[7] Developing and managing robust information systems that simplify sending, receiving, and integrating data and information will also remain essential for meeting complexities of the public health landscape. But LHD resources are spread across many competing demands. To improve informatics capacity, LHDs' leaders and boards of health need clear reasons to make informatics a strategic priority. Public health leadership may not be directly involved in the day-to-day use of information systems and technology and therefore may not be convinced about the relevance, business case, and barriers of informatics. However, "strong, stable leadership with focused strategy is critical for building informatics capacity," as is demonstrated in the Spokane Regional Health District's case. Public health leadership at all levels will need to be engaged in incentivizing staff buy-in and elevating informatics as an agency-wide strategic priority. Such improvements in staff and leadership buy-in will be critical in future if LHDs are to harness big data from health information exchanges and other community partners. Leadership engagement will be critical in obtaining real-time data from diverse community partners. Use of diverse data sources will be essential for capitalizing on Health in All Policies,[8] improving surveillance, and promoting evidence-based decision making and thereby to advance health outcomes and address disparities.

Training

We need to ensure a basic level of informatics skills among all public health staff. Informatics training is important for public health staff at all levels. Yet, many LHDs do not recognize a need for informatics training. This is especially true among small (<50 000 population) LHDs,[9] perhaps because, with each staff member wearing many hats, training in each staff's diverse primary tasks takes precedence. Most public health informatics work is accomplished by the general staff.[1] Program area staff do data entry, information management, data analysis and interpretation, and selection and maintenance of informatics systems. Few of these staff members have well-developed informatics skills.[10] Yet, many LHDs do not recognize a need for informatics training.

To get training, most public health departments rely on local resources, online training, or national conferences.[11] Several online informatics trainings can provide entry-level informatics knowledge to general staff, information technologists, epidemiologists, as well as health department management. The Centers for Disease Control and Prevention (CDC) offers an Informatics Training in Place Program (I-TIPP) designed to build informatics knowledge and skills of workers while they remain on their jobs.[12] Several fellowships in public health informatics are available through the CDC for professionals with a master's or higher degree (see examples in the Table).[12]

Because informatics is a still an emerging area of practice, many practicing informaticians have gained core competencies through certification programs and on-the-job training; the majority of LHD informaticians have not had standardized formal training.[13] By expanding training through national programs, funding, and including informatics courses within schools of public health, we can begin to bridge the informatics training gap.

This supplement's articles reflect promise as well as challenges. If we address the need for well-informed leaders and accessible, practical training, and ensure that we shepherd forward LHDs of all sizes, informatics will make public health increasingly effective.

TABLE Free Online Courses, and Resources in Public Health Informatics

Title	Web Site
Collaborative Requirements Development Methodology Process	http://phii.org/crdm
Resources and Toolkits	http://phii.org/resources
Health Informatics Fundamentals for Public Health Staff (10 wk/40-h course)	https://www.healthit.gov/providers-professionals/implementation-resources/online-training-health-informatics-fundamentals
Meaningful Use Basic Training for Public Health Professionals	http://www.cdc.gov/ehrmeaningfuluse/training.html
Informatics Workforce Development and Training	https://www.cdph.ca.gov/data/informatics/resource/Pages/default.aspx
Health Informatics Forum Massive Open Online Course (MOOC)	http://www.healthinformaticsforum.com/MOOC

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