

VERSION 2.0 WORK IN PROGRESS: Data/Surveillance/Informatics Think Tank Summary September 2019



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Public Health Accreditation Board
1600 Duke Street
Suite 200
Alexandria, VA 22314
Phone: 703-778-4549
Fax: 703-778-4556

www.phaboard.org

On September 10 & 11, 2019, PHAB convened experts across the country to review the current health department accreditation standards and measures and to discuss the current state of public health practice as related to data, surveillance, and informatics. The think tank discussion generated valuable insight on pertinent changes in the data/surveillance/informatics field since the PHAB Standards & Measures, Version 1.5 were published in 2013. PHAB heard from Dr. Chesley Richards, Deputy Director for Public Health Science and Surveillance, CDC, on the Public Health Data Modernization Initiative (PHDMI); Janet Hamilton, Senior Director of Science and Policy, CSTE, on the Elemental Health Campaign; and Vivian Singletary, Director of the Public Health Informatics Institute at the Task Force for Global Health, on the general state of health agency data analytics, surveillance systems, and public health informatics, in the broadest and most comprehensive context. The feedback PHAB received will inform support for health departments' work in this area and revisions to the accreditation standards and measures. This summary will highlight key areas from the proposed recommendations.

The participants acknowledged how rapidly the tools and capabilities in the field of public health informatics are changing. Key overarching points from the think tank discussion were:

- Data security and privacy (or data security to ensure privacy of health information) is paramount, health departments should take all appropriate measures to safeguard data when it is collected, stored, shared or exchanged, or analyzed. These concepts also apply to the management of open data;
- Many government curated datasets “belong” to the community, the health department can play a lead role in championing the governance, open access, and interpretation of how to use and/or analyze these community datasets;
- Attention to data sharing internal to the health department and external within the health system and with community partners for future work in the social determinants of health is vital; and,

- Data creates information, which creates knowledge. To function effectively, health departments are required to use data to make sound decisions with and for the community and to inform the public through use of data visualization tools. For Version 2.0, PHAB should consider using the word information instead of data to connote the intent and the origin for local, state and national investment in the modernization of the public health information infrastructure. This of the data being used to make decisions.
- For modernization of the public health information infrastructure to occur, investments should be made by federal, state and local entities in a coordinated manner.

These points were used across domains and with several measures to capture the roles and responsibilities of health departments. Another set of potential requirements were noted as follows:

- The health department should demonstrate the capacity to conduct a requirements analysis when designing or redesigning a public health information system. Think tank participants expressed the opinion that all-electronic data sharing will be the norm in the future, so updated or modern data systems will need to be in place for that sharing to occur, whether real-time or static. Participants also discussed recommending that health departments conduct an informatics-savvy health department assessment on a regular basis.
- The health department should demonstrate that agency staff are knowledgeable in the creation of information system requirements and business process analyses. Access to expertise to accomplish these requirements will vary in health departments. In some cases, contractual assistance may be needed to provide expertise.
- Health departments should demonstrate or secure capacity to use appropriate standards (i.e., HL7, FHIR, etc.) to promote interoperability (seamless exchange of data) between their systems.
- Academic centers can be valuable resources for health departments in accessing the necessary training and capacity to meet these evolving needs, particularly in under-resourced and rural communities.

Recommendations for Proposed Changes to the Standards and Measures Related to Data/Surveillance/Informatics:

- A. Summaries and fact sheets of data used to support public health community improvement planning processes (Measure 1.4.2) should include an analysis component. A recommendation is to ask health departments to provide an example of how they helped community partners and/or the media analyze and contextualize the data provided by the health departments.
- B. Health departments should have a policy in place to cooperate with other response agencies' emergency operations plan(s) (Measure 2.2.2). One recommendation is to modify the standards and measures to consider the planning process and practices more so than plan documentation.
- C. Reconsider the terminology in Measure 6.3.4. to emphasize "patterns" over trends analysis. "Trends" may not sufficiently illuminate the reasons for change over time.. Because of the unique nature of trends, as enforcement improves, complaints tend to increase. While "trends" refers to comparisons over different time periods, "patterns" also include comparisons based on geography or type of facility, for example.

- D. Domain 7 lacks a standard approach to assessing health care service capacity and access to health services. It was recommended that PHAB hold a broader conversation surrounding Domain 7 to determine what should be required and how the standards and measures can be revised to achieve that.
- E. Measure 11.1.6 is about information management infrastructure for data storage, protection and management along with data analysis and reporting. Regarding required documentation 4 and 5, it was suggested for health departments to indicate that an information/data governance process is in place when developing information systems. Information governance is about how data will be used and who makes that decision, which includes positions that are in charge of such a process; data governance policies and/or regulations; data governance committees; and other similar strategies. It was recommended that PHAB add a component about systems governance, automation of reporting, and leveraging national standards on data exchange to the measure. It was also suggested that health department officials and leadership staff have training on data leadership.

Other Recommendations Unrelated to Specific Standards and Measures:

- A. To aid in accomplishing goals and gaining support, engaging top leadership is vital. Accreditation standards could include requirements regarding a health department leadership team that includes at least one individual with a background in data leadership and infrastructure in any measure where it seems appropriate. This is in addition to the data scientists that are part of the health department leadership team.
- B. Keeping in mind that health departments vary in organizational capacity, information systems/tools need to be designed to work with existing staff at their level of expertise, especially in the case where limited funds exist for hiring additional staff. This recommendation goes beyond PHAB's scope of work but is key to successful health department performance in the future.
- C. PHAB should acknowledge in future standards and measures the importance of health departments' understanding, access to and use of advanced data visualization tools and dashboards. Data visualization tools could be helpful in benchmarking progress as well as encouraging health departments to communicate with public and/or private sectors and policymakers and funders.
- D. PHAB needs to continue to be flexible about how and where data are collected and presented for Community Health Assessments (CHAs). For example, some health departments are moving to a more continuous CHA process, rather than producing a stand-alone report every three to five years. And data from non-traditional community sources and other sectors is important to consider.
- E. Qualitative data has its advantages and can also be used to supplement quantitative data, especially related to authentic community engagement to support health equity. Small health departments need access to training and support in order to operationalize qualitative data collection and analysis.
- F. Syndromic surveillance is a best practice for monitoring trends in public health diseases and conditions, although it was acknowledged that this capacity may vary within health departments.
- G. Health departments should provide an example of how following the data led to an unanticipated result and ultimately how it impacted how decisions were made. An

example might be related to qualitative data collected from a dialogue with under-resourced communities related to gaps in service and resources.

- H. There may be some requirements that are appropriate for the state health department Standards & Measures and not the local health department requirements. For example, some aspects around automation, standards, governance, and exchange may be more challenging for local health departments than for states. It may also be appropriate to have a requirement around how state health departments make data available to local health departments and supports their use, as well as how state health departments incorporate local input in advance of developing information systems and requirements as appropriate, such as state-managed information systems that local health departments rely upon (e.g., immunization registries, WIC systems).
- I. Information use, information systems and informatics should be incorporated throughout the standards and measures where appropriate.

Recommendations Regarding Terminology and Definitions

Current Terms in PHAB Glossary	Existing Definition	Proposed Definition/ Recommendation/Notes
Public Health Informatics	<p>Public health informatics is the systematic application of information and computer science and technology to public health practice, research, and learning. Public health informatics</p> <ul style="list-style-type: none"> • Analyzes structure, relationships and behavior of systems that store, process and use information • Integrates information from diverse sources and into work processes where it can generate value • Develops methods for effective acquisition and presentation of information • Manages change among people, processes and technology to enable effective use of information systems <p>(http://www.cdc.gov/learning/archive/informatics.html)</p>	<p>Public health informatics is the effective use of information and information technology to improve public health practice and outcomes.</p> <p>(https://www.phii.org/defining-public-health-informatics)</p>
Information System	<p>An information system is a combination of hardware, software, infrastructure, and trained personnel organized to facilitate planning,</p>	<p>An information system is composed of computer hardware; computer</p>

	control, coordination, and decision-making in an organization. (www.businessdictionary.com/definition/information-system.html)	software; telecommunications; databases and data warehouses; human resources and procedures, including standards for the governance of the system. https://www.britannica.com/list/5-components-of-information-systems
New Terms		
Informatics-Savvy Health Department	None	An informatics-savvy health department has three core elements: an overall vision and strategy for how it uses information and information technology as strategic assets; a workforce that is skilled in using information; and well-designed and effectively used information systems. https://www.phii.org/informatics-savvy-toolkit-homepage/informatics-savvy-toolkit
Information System Partnerships	None	Information system partnerships have a shared vision for information sharing and use, a commitment to provide usable information for all partners, coordination on policy and other actions based on joint analysis and decision-making of the information, Adapted from https://www.ncbi.nlm.nih.gov/pubmed/10107083

<p>Data Sharing</p>	<p>None</p>	<p>The Network for Public Health Law has some resources around data sharing including state examples:</p> <p>https://www.networkforphl.org/resources/topics_resources/health_information_and_data_sharing/</p> <p>https://www.networkforphl.org/asset/2lv6l9/Summary-of-State-Laws-that-Facilitate-Data-Sharing-Among-State-Agencies-11-7-19.pdf</p> <p>This is a clinical/research definition for data sharing:</p> <p>https://www.ncbi.nlm.nih.gov/books/NBK253383/</p> <p>Gaps in public health data sharing:</p> <p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3925408/</p> <p>https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-14-1144</p> <p>ASTHO resources</p> <p>http://www.astho.org/Programs/Preparedness/Public-Health-Emergency-Law/Public-Health-and-Information-Sharing-Toolkit/Collection-Use-Sharing-and-Protection-Issue-Brief/</p>
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Data Standards	None	<p>HL7 is one of the most commonly used data standards. It provides a framework that helps govern how electronic health information is retrieved, shared, exchanged and integrated. The standards define how patient information is structured, packaged and communicated between disparate parties and also sets the data types, structure, and language needed for seamless integration between electronic health systems.</p> <p>https://www.hl7.org/implementation/standards/</p> <p>https://www.hl7.org/implementation/standards/product_section.cfm?section=12</p>
Information Governance	None	<p>An organization-wide framework for managing information throughout its lifecycle and supporting the organization’s strategy, operations, regulatory, legal</p>

		<p>risk and environmental requirements. Information Governance for Public Health. Public Health Informatics Institute. February 2019. (adapted from the American Health Information Association, 2014).</p>
Data Governance		<p>A discipline that provides clear-cut policies; procedures; standards; roles; responsibilities; and accountabilities to ensure that data is well-managed as an enterprise resource (Data Governance Professionals, accessed 2019 https://dgpo.org/).</p>
Information systems workforce	None	<p>Informaticians are professionals who ensure that data are readily shareable by designing and implementing integrated systems for sharing health data that are crucial to public health practice and high-level decision making. Their work supports other public health professionals by improving decision making and increasing the field's ability to improve population health outcomes. http://www.frameworksinstitute.org/public-health-informatics.html (2015).</p> <p>An Epidemiologist is defined as “an investigator who studies the occurrence of disease or other health</p>

		<p>related conditions or events in defined populations. https://cdn.ymaws.com/www.cste.org/resource/resmgr/Workforce/Epi_definition.pdf</p> <p>Both are considered key positions in the information systems workforce.</p>
<p>Inter-operability</p>	<p>None</p>	<p>According to section 4003 of the 21st Century Cures Act, the term 'interoperability,' with respect to health information technology, means such health information technology that— "(A) enables the secure exchange of electronic health information with, and use of electronic health information from, other health information technology without special effort on the part of the user; "(B) allows for complete access, exchange, and use of all electronically accessible health information for authorized use under applicable State or Federal law; and "(C) does not constitute information blocking as defined in section 3022(a)." https://www.healthit.gov/topic/interoperability</p> <p>Industry/HIMSS definition Interoperability is the ability of different</p>

		<p>information systems, devices and applications ('systems') to access, exchange, integrate and cooperatively use data in a coordinated manner, within and across organizational, regional and national boundaries, to provide timely and seamless portability of information and optimize the health of individuals and populations globally.</p> <p>https://www.himss.org/library/interoperability-standards/what-is-interoperability</p> <p>Ensure we are using the latest definition</p> <p>https://www.modernhealthcare.com/technology/himss-proposes-new-interoperability-definition</p>
<p>Data Visualization</p>	<p>None</p>	<p>Data visualization is the process of displaying data/information in graphical charts, figures and bars.</p> <p>https://www.techopedia.com/definition/30180/data-visualization</p>

Data/Surveillance/Informatics Think Tank Participants

- Terry Allan (OH)
- Ed Baker (NC)
- Eric Bakota (TX)
- Bill Brand (Public Health Informatics Institute)
- Liza Corso (CDC, CSTLTS)
- Janet Hamilton (CSTE)
- Megan Heffernan (NORC at the University of Chicago)

Data/Surveillance/Informatics Think Tank Participants (continued)

Lesliann Helmus (CDC, Division of Health Informatics and Surveillance)
Jim Jellison (Public Health Informatics Institute)
Lily Kan (NACCHO)
Meredith Lichtenstein-Cone (CSTE)
Judy Lipshutz (CDC, Center for State, Tribal, Local and Territorial Support)
Isaac Michaels (NY)
Shailesh Nair (Public Health Informatics Institute)
Dan Partridge (KS)
Chesley Richards (CDC, Public Health Science and Surveillance)
Dhara Shah (CSTE)
Vivian Singletary (Public Health Informatics Institute)
Priyanka Surio (ASTHO)
Shae R. Sutton (NAPHSIS)
Todd P. Talbert (CDC Center for Preparedness and Response)
Jimica Tchamako (Public Health Informatics Institute)