The Management Moment

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Building an Informatics-Savvy Health Department II: Operations and Tactics

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In a previous Management Moment column,[1] we presented concepts related to the creation of an informatics-savvy health department—an organizational imperative for public health practice. Creating divisions of epidemiology and vital records decades ago were central to the development of public health agencies in the past; building the informatics capacity in public health agencies will be central to the effectiveness of these organizations in the decades ahead.

An informatics-savvy health department is one that can obtain, effectively use, and securely exchange information electronically to improve public health practice and population health outcomes. To reach this vision, the agency must have an informatics-skilled workforce coordinated through an effective agency-wide governance process, employing a disciplined approach to design and use of information systems that effectively support agency program objectives.[1]

In this article, we build on our previous discussion of the vision and core strategies for building an informatics-savvy health department to describe the operational and tactical details related to reaching this goal. We also provide information here on available resources and sources of assistance.

● Creating an Organizational Focus for Informatics

To be effective in addressing the information challenges of the future, public health agencies should create a unit or organizational focus for public health informatics. An experienced informatics expert who has direct access to senior agency leadership should lead the unit. The unit leader should be responsible for the creation of a shared vision and road map for how information and information technology (IT) support agency mission and priorities. The leader also serves as a critical liaison to the central IT office that controls many IT functions, to the state government Health IT coordinator, and to the state Medicaid program, which is in a position to fund health information system infrastructure development.

The unit's mission must include both internal and external responsibilities. Within the agency, the unit supports implementation of the road map by

- assessing readiness for interoperability including challenges and barriers for Meaningful Use exchanges;
- identifying and addressing training needs for informatics skills, competencies, and knowledge across a broad range of public health professionals;
- creating an informatics profile of information assets such as an inventory of data sets, information systems, and exchange partners;
- facilitating planning around agency-wide enterprise services such as Master Person Index, public health gateway portal, transport protocols, information architecture, enterprise architecture, and provider directories;
- championing cross-agency collaboration and sharing among programs;

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- supporting programs in making decisions whether to maintain or replace legacy information systems; and
- promoting data quality through a systems approach and use of data business rules.

The unit's external responsibilities should include

- coordinating external communications with stakeholders related to interoperability including those for Meaningful Use;
- creating and implementing a shared strategic road map for interoperability with community stakeholders;
- supporting applied research, assessment, and evaluation related to interoperability; and
- serving as liaison to Health Information Exchange organizations, the state Medicaid program, and the state Health IT coordinator and other stakeholders.

In addition to securing an experienced and knowledgeable leader, the unit must develop and maintain staff capacity (both within the unit and department-wide) needed to carry out these responsibilities across the agency. Key staff roles include the following:

- Manager/program leader role: Directs manages and executes day-to-day operational objectives of information systems.
- Professional informatics scientist role: Applies specialized informatics knowledge, theories, concepts, and tools to ensure effective operations of information systems in public health programs.
- Clinical information systems role: Applies specialized knowledge and expertise to the design and operation of clinical information systems used to support clinical care because of the need of public health agencies to increasingly interface with (and in times operate) clinical health information systems.

Maintaining the capabilities of staff will require commitment to ongoing training and development efforts to ensure that skills and knowledge remain current. We recommend the use of templates[2] that have been developed to assist in the process of recruiting informatics staff with the needed skills and expertise. Agency human resource offices should be engaged to identify or establish new position classifications and career series that reflect the role of the professional informatics scientist with the accompanying salary range considerations.

● Utilizing Best Practices in Public Health Informatics

Just as the 10 Essential Public Health Services list has formed a framework for building and ensuring capac-

ity in public health agencies generally, we believe that use of a focused set of best practices is vital in building an informatics-savvy health department. Central to a set of best practices is adherence to an information system development lifecycle framework in designing, developing, and managing information systems and adherence to national standards and practices governing information systems.
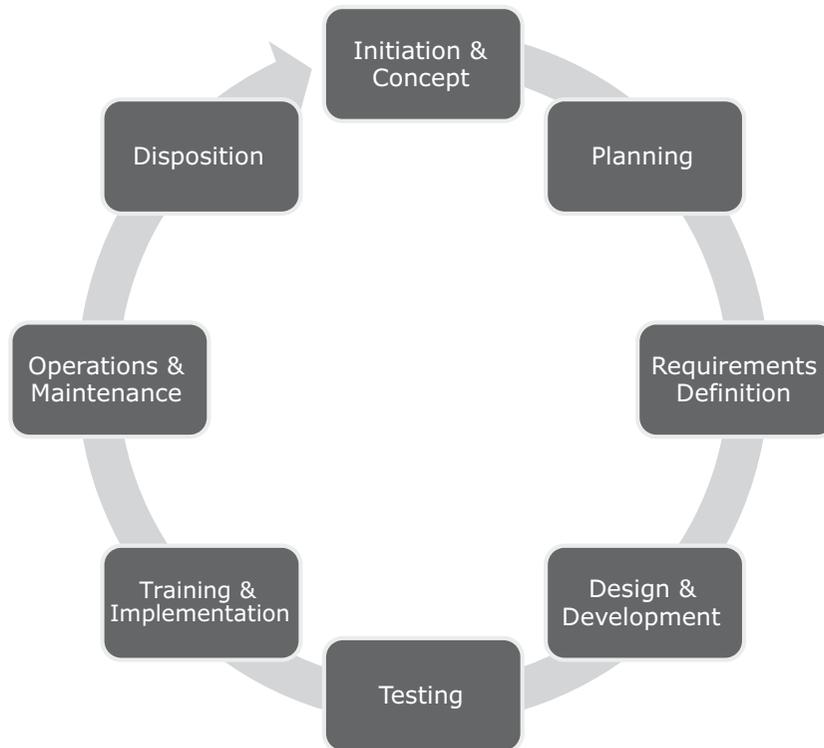
The systems development life cycle

Designing, developing, and managing a public health information system are best accomplished by adherence to a stepwise approach—referred to as the "systems development life cycle" (SDLC) or "IT life cycle." The SDLC refers to all phases of an information system's life from the initial rationalization (ie, why do we need a system, what the system must do to support the work, how to design it, and how to support it). The life cycle provides a comprehensive approach for public health agencies in that it addresses all phases from conceptualizing the system, through all phases of system operations, and concludes with methods to dispose of an old system. Another design approach—referred to as "agile design"—is less suited to public health needs, since it refers mostly to how to go about designing a system once the decisions to create a system have been made and once the business processes it will support have been properly identified. Informatics guidance and public health program involvement in each phase of the life cycle can ensure that one ends up with a system that brings health value to the health agency.

By following the tested and proven SDLC approach (Figure), especially when procuring or enhancing a system through external vendors, agencies can avoid costly information system "disasters" and ensure that information systems meet the needs of public health professionals. A recently developed online training course provides a unique opportunity to learn about the SDLC and provides resources that assist in applying guiding principles and best practices to the design and management of public health information systems.[3]

National standards and practices

Public health agencies are now expected to adopt standards-based systems. With the full automation of the health care delivery sector using standards-based technologies, public health will be required to adopt standards-based systems if we are to have data trading partners in health care, social services, and other domains. The range of national standards and practices continues to expand in scope and complexity as information system development accelerates across the

FIGURE ● **Systems Development Life Cycle**

Initiation & Concept
Planning
Requirements Definition
Design & Development
Testing
Training & Implementation
Operations & Maintenance
Disposition

nation and around the world. These standards include those related to the Meaningful Use incentive program, operation of Health Information Exchanges, and Centers for Disease Control and Prevention–developed standards related to public health surveillance and other programs. The overall intent of these standards and practices include

- enabling interoperability;
- ensuring confidentiality;
- ensuring data integrity and quality;
- evaluating the status, design, and use of information systems;
- enhancing data analytics, visualization, and reporting;
- enhancing knowledge representation, decision support, and business process analysis (including requirements development); and
- reducing costs and demonstrating value.

Following the life cycle and implementing national standards and practices require use of effective project management techniques including the creation and use of project charter documents that describe the approach and methods to a project from a public health program perspective.

Accessing Resources for Building an Informatics-Savvy Health Department

Building informatics capacity is a major challenge, and often an incremental process for most public health agencies is needed. To assist this process, we suggest use of a Public Health Informatics Toolkit[4] to guide assessment and development of capacity. We also have developed with other colleagues a checklist for use in creating an informatics-savvy health department.[5]

In addition, we recommend consideration of a number of training and educational resources to assist in enhancing workforce competency. These include

- the Informatics Academy of the Public Health Informatics Institute[6];
- informatics committees of public health organizations (eg, Association of State and Territorial Health Officials, National Association of County & City Health Officials, Council of State and Territorial Epidemiologists, American Immunization Registry Association, etc);
- schools of public health certificate and degree programs; and
- Centers for Disease Control and Prevention resources and informatics fellows programs.

● Summary and Conclusion

In view of the challenges faced by public health agencies with respect to the use of information and information systems to serve population health protection and promotion, we see the creation of the informatics-savvy health department as an organizational imperative for the coming decade. To achieve this vision, knowledgeable and decisive leadership, effective policies and governance, strong partnerships, and a skilled workforce are central strategies. Some public health agencies have already begun this quest; as a result, improved program operations and stronger community partnerships are occurring. We anticipate that, over the coming months and years ahead, we will witness a transformation in public health practice as more agencies aspire to becoming more informatics-savvy. The health of the public will benefit in ways not yet imagined.

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