

Public Health Informatician — Job Description
PUBLIC HEALTH INFORMATICIAN
O*NET-SOC Code: 15-1051.00 RAPIDS Code: 2010CB

Background

A Public Health Informatician is a PH professional who works in either practice, research, or academia and whose primary work function is to use informatics to improve population health. PH informaticians should be capable of addressing public health problems by analyzing how information is organized and used, enabling effective information management, evaluating information systems artifacts and the impact of informatics interventions, and contributing to the body of knowledge in this scientific field. Although such PH informaticians might develop expertise in a given public health program area, all PH informaticians should have core competencies in both informatics and public health.

At least two tiers of PH informaticians are employed in public health agencies; more might be developed, depending on organizational complexity and informatics needs. The first tier includes researchers, scientists, project managers, and program advisers, often more narrowly focused in their work scope. The second tier includes more experienced persons functioning as senior agency personnel (e.g., chief information officers or public health informatics officers).

The work statements in the job descriptions for PH Informaticians and Senior PH Informatician are derived from the Competencies for Public Health Informaticians developed by CDC in collaboration with the Center for Public Health Informatics of the University of Washington School of Public Health and Community Medicine in 2009 [1]. The job descriptions also might include work statements derived from other competency sets (e.g., the three-tier Competencies for Public Health Workers developed by the Council of Linkages Between Academia and Public Health [2]). These competencies are intended to help public health agencies define needed skills for PH informaticians, provide a roadmap for evaluating, measuring, and promoting employees, and provide a framework for designing and developing training programs containing applied informatics curricula. Consequently, these competencies are also meant to support development of work statements and required knowledge, skills and abilities in job descriptions for the workplace as might be observed in existing job descriptions developed by the state of Utah for its PH informaticians [3]. For example, one communication competency requires communicating effectively with staff across enterprise disciplines. This competency might translate into a work statement as either being able to collaborate with a multidisciplinary team or being able to communicate work findings at national conferences. One of the principal differences between competencies for PH Informatician and Senior PH Informatician is that the latter tends to lead and the former tends to have support-related work tasks. Work statements might be derived from different levels of subcompetencies for more granularity in the job description.

Examples of Job Description for Two Tiers of PH Informatician

Tier 1 PH Informatician

PH Informaticians should be capable of developing innovative applications of technology and systems that address public health priorities by analyzing how information is organized and used and evaluating how this work contributes to the scientific field. Although such specialists might develop expertise in a given public health program area, all PH Informaticians should have core competencies in both informatics and public health. Examples of PH Informaticians include project managers for information technology (IT) implementations in public health settings, program managers with primary responsibility for operation and maintenance of major public health information systems, and researchers working to develop innovative information systems and informatics methods to support public health activities.

Work statements of incumbents in this position might include the following:

1. Works on a team to develop an informatics strategic plan for an organization.
2. Designs, coordinates, and maintains public health informatics project goals, objectives, and priorities within the health department and in the general public health community.
3. Collaborates with staff to create systems to manage information.
4. Identifies standards for use in agency's informatics projects.
5. Evaluates and develops approaches for strengthening the standardization and utility of national health information systems, their products, policies, and processes, with special emphasis on electronic data interchange and electronic media.
6. Conducts stakeholder analysis to support effective implementation of informatics projects in the agency.
7. Represents agency at national (and international) conferences on policy matters related to PHI (e.g., implementation of Centers for Medicare and Medicaid Services')
8. Conducts research to contribute to the body of PHI knowledge.

For a more detailed list of competencies that can be used for job descriptions, please refer to 2009 Competencies for Public Health Informaticians [1].

Tier 2 Senior PH Informatician

Senior PH informaticians serve as policy advisers and leaders at the highest levels of a public health agency, bringing specialized knowledge and skills in the areas of information architecture, information resource management planning, enterprise-level information systems development and integration, and organizational change management. The major difference between PH Informaticians and Senior PH Informatician is judgment and experience. Senior PH Informaticians' experience allows them to oversee or make recommendations on complex, agency-wide IT projects,

policies, and concerns. Senior PH informaticians lead strategic planning to manage data and IT systems, oversee implementation and operation of IT projects and systems, and manage agency IT resources. In an academic setting, Senior PH informaticians conceive of and implement innovative research projects to apply emerging informatics principles and IT systems to public health problems. Senior PH informaticians might have such job titles as strategic information specialist, standardized vocabulary specialist, health informatics scientist, or professor of public health informatics.

Work statements of incumbents in this position might include the following:

1. Leads the development of a strategic public health informatics plan for an organization.
2. Provides leadership in designing, coordinating, and maintaining public health informatics project goals, objectives, and priorities within the health department and in the general public health community.
3. Ensures staff is using informatics standards on projects and programs.
4. Communicates with other senior-level officials in government and private-sector regarding policy decisions within the agency.
5. Drives innovation and new insights for information systems at both organizational and national levels.
6. Plans and develops strategies for new models of health information interchange and automation in medicine and public health.
7. Leads evaluation and development of approaches for strengthening the standardization and utility of national health information systems, their products, policies, and processes, with special emphasis on electronic data interchange and electronic media.
8. Contributes to the body of scientific knowledge within PHI by facilitating and supporting and creating opportunities for informatics research by junior Informaticians among the staff.
9. Delegates responsibility for informatics projects to staff.
10. Develops and implements scientific policies and procedures on informatics practices and principles.
11. Provides leadership in developing, testing, implementing, and evaluating scientific IT and information system needs and applicable software systems relating to public health informatics within the area of responsibility.
12. Provides consultation, guidance, and coaching on health information systems, their methodologies, and approaches and oversees crosscutting projects, requiring communication skills to improve technical and scientific understanding, teamwork, and achievement of departmental goals and objectives.

For a more detailed list of competencies that can be used for job descriptions, please refer to 2009 Competencies for Public Health Informaticians [1].

References

1. Competencies for Public Health Informaticians, 2009. U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Centers for Disease Control and Prevention Office of Workforce and Career Development and University of Washington School of Public Health and Community Medicine's Center for Public Health Informatics. Available at: <http://www.cdc.gov/InformaticsCompetencies/>. Accessed December 16, 2011.
2. Council on Linkages Between Academia and Public Health Practice. Core Competencies for Public Health Professionals. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2009. Available at: http://www.phf.org/resourcestools/Documents/Core_Public_Health_Competencies_III.pdf. Accessed December 20, 2011.
3. Dreyfus HL, Dreyfus SE. Mind over machine: the power of human intuition and expertise in the era of the computer. Oxford: Blackwell, 1986.
4. State of Utah Department of Human Resource Management Job Description. Health Informaticist – URL: https://online.dhrm.utah.gov/jobdesc/JobDescription.jsp?jfldr_id=29576.
5. State of Utah Department of Human Resource Management Job Description. Senior health informaticist – URL: https://online.dhrm.utah.gov/jobdesc/JobDescription.jsp?jfldr_id=29577.
6. State of Utah Department of Human Resource Management Job Description. Health informaticist manager – URL: https://online.dhrm.utah.gov/jobdesc/JobDescription.jsp?jfldr_id=29578.

PHIFP Core Competencies
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| PHIFP Core Competencies | |
|--------------------------------|---|
| 1. | <i>Analysis, Assessment, and Evaluation</i> |
| 1.1 | Describes the characteristics of a public health informatics problem |
| 1.2 | Identifies relevant and appropriate data and information sources |
| 1.3 | Makes community-specific inferences from quantitative and qualitative data |
| 1.4 | Applies ethical principles to the collection, maintenance, use, and dissemination of data and information |
| 1.5 | Conducts applied public health informatics research to develop new insights and innovative solutions at the local, national, and international level |
| 1.6 | Evaluates information systems according to the established frameworks |
| 1.7 | Analyzes business processes to redesign public health informatics programs and business operations |
| 2. | <i>Communication</i> |
| 2.1 | Communicates in writing and orally in person and through electronic medium |
| 2.2 | Solicits input from individuals and organizations |
| 2.3 | Presents demographic, statistical, programmatic, and scientific information to technical and nontechnical audiences |
| 2.4 | Applies communication strategies, including principled negotiation, conflict resolution, and active listening in the interactions with individuals and groups |
| 2.5 | Implements the public health agency's communication policies and procedures |
| 3. | <i>Cultural Competence</i> |
| 3.1 | Describes the need for a diverse public health workforce |
| 3.2 | Incorporates strategies for interacting with persons from diverse cultural, socioeconomic, educational, racial/ethnic, and professional backgrounds |
| 4. | <i>Community Dimensions of Practice</i> |
| 4.1 | Establishes and maintains linkages with key stakeholders |
| 4.2 | Collaborates with community partners to promote the health of the population |
| 4.3 | Ensures that knowledge, information, and data needs of project or program users and stakeholders are met |
| 4.4 | Advocates for public health policies, programs, and resources |
| 5. | <i>Public Health Sciences</i> |
| 5.1 | Describes the scientific underpinnings of the field of public health |
| 5.2 | Identifies the prominent events in the history of the public health profession |

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| 5.3 | Identifies the individual's and organization's responsibilities within the context of the Essential Public Health Services and Core Functions |
| 5.4 | Solves context-specific problems by using knowledge and principles of the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services |
| 5.5 | Solves problems by using knowledge of the historical development, structure, and interaction of public health and health care systems |
| 5.6 | Recommends solutions that ensure confidentiality, security, and integrity while maximizing availability of information for public health |
| 6. <i>Leadership and Systems Thinking</i> | |
| 6.1 | Incorporates ethical standards of practice as the bases of interactions with organizations and communities |
| 6.2 | Applies public health informatics standards in all projects and systems |
| 6.3 | Contributes to the development of public health information systems that are interoperable with other relevant information systems |
| 6.4 | Demonstrates knowledge of CDC's vision, mission, priorities, and organizational structure |
| 6.5 | Demonstrates self-awareness and one's impact on others |

APPLIED LEARNING SCHEDULE

APPLIED LEARNING OUTLINE

1. Lead a project to solve a public health informatics problem in a host CDC center, institute, or office.
2. Lead an external technical assistance (InfoAid) project.
3. As lead author, write and submit a scientific manuscript for publication in a peer-reviewed journal.
4. Write, submit, and present an abstract for an oral presentation or poster session at the American Medical Informatics Association fall or spring conference (during 2nd year).
5. Lead a journal club during a PHIFP Friday seminar.
6. Deliver a PHI scientific presentation to a CDC-wide audience during a PHIFP Friday seminar.
7. Design, develop, and implement a public health information system evaluation project (the Capstone Project).

DIDACTIC LEARNING SCHEDULE
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| Didactic Learning Modules | Approximate Hours |
|---|--------------------------|
| 1. Public Health Informatician Fellowship Program Orientation and Skill-Building | |
| Module 1 — Introduction to the PHI Fellowship Program | 7.5 |
| Peer-to-Peer Panel with PHIFP Alumni | 3.0 |
| Tour of the CDC Emergency Operations Center (EOC) | 1.0 |
| Module 2 — Public Health Overview | 2.0 |
| Module 3 — Public Health Informatics Overview | 7.5 |
| Module 4 — Informatics at the State, Federal, and Local Health Agencies | 3.5 |
| Module 5 — Informatics for Surveillance | 4.0 |
| Module 6 — Epidemiology for Informaticians | 4.0 |
| Module 7 — Communication in Public Health Informatics | 7.5 |
| Module 8 — Ethics in Public Health Informatics | 8.0 |
| Module 9 — Community Aspects of Public Health Informatics | 5.5 |
| Module 10 — Interoperability in Public Health Informatics | 11.0 |
| CDC Unified Process for Project Management | 3.5 |
| Module 11 — Research and Innovation in Public Health Informatics | 4.0 |
| Module 12 — Evaluation in Public Health Informatics | 11.0 |
| Module 13 — Putting it All Together (Bootcamp Board Game) | 4.0 |
| Module 14 — Field Practicum (Technical Assistance Project) | 40.0 |
| 2. PHIFP Friday Seminars | |
| A. Journal Club | 16.0 |
| B. Scientific Presentations | 18.0 |
| C. Expert Speaker Seminars | 14.0 |
| D. Roundtable Discussions | 16.0 |
| 3. Skill-Building Sessions | |
| A. Scientific Writing | 8.0 |
| B. 360-Degree Evaluation | 6.0 |

| Didactic Learning Modules | Approximate Hours |
|---|--------------------------|
| C. Business Process Analysis | 24.0 |
| D. Project Management | 16.0 |
| 4. Participation in Conferences | |
| American Medical Informatics Association Conference | 24.0 |
| CDC Informatics Conference | 24.0 |
| TOTAL HOURS | 293 |