Skill Set Summary

	A	B	C
1	**Skill Set**	**Summary**	**Definition**
2	Project Sponsorship	* Senior Management Role * Understands business needs * Coordinates all support departments * 'Owns' the project	Project sponsorship is the public health area is an active senior management role, responsible for identifying the organizational need, problem or opportunity. The sponsor ensures the project remains a viable proposition and that benefits are realized, resolving any issues outside the control of the project manager. The project sponsor needs to understand the structure of the organization and how to work within that structure.. The project sponsor and project manager should form an effective partnership with the project manager orchestrating all players involved in delivering the project e.g. designers, manufacturers and contractors, whilst the project sponsor coordinates all departments of the client organization and associated stakeholders so as to integrate the delivered project into the client organization and take full benefits from it such that the business case is fulfilled. Because the project sponsor is the 'owner' of the project from conception to commissioning and operation it is particularly important to achieve continuity of sponsor throughout the project[2] yet correspondingly difficult to achieve because of the extended duration of sponsorship compared to project management.
3	IT Project Management	* Project Management skills (PMI) * Customer requirements documentation * Network diagramming * Project plan * Work breakdown structure * Risk Management * Resource Management	Project management process skills (sometimes called the "hard skills") are knowledge and skills related to the mechanics of project management. A project manager should be extremely knowledgeable about project management tools, techniques, and process technology and be able to apply them. Examples of tools include comprehensive customer requirements documentation, network diagrams, and a work breakdown structure. The skills of time and resource management are also important to project management. Project tracking, risk identification and mitigation, status reporting and project closure are important project managment skills.
4	Program Management	* Multiple domain role * Support business goals * Overview of business needs * Strategic planning	Program management cuts across many domains with the possiblity of many inidividual projects within those domains. Programs in the public health domain are geared explicitly toward an organizational goal; they are defined by an organizational or legally mandated goal or requirement.
5	Business Analysis / Process Flow Modelling	* Identify business needs * Determine solutions * Process improvement * Organizational change * Strategic planning	Business analysis in the public health arena is the discipline of identifying organizational needs and determining solutions to organizational / jurisdicational opportunities and / or problems . Solutions often include a systems development component, but may also consist of process improvement, organizational change or strategic planning and policy development.
6	Systems Analysis and Design	* Analyze system * Develop new technologies * Develop new designs * Fine tune, improve systems, processes	Systems analysis specializes in developing and fine-tuning technical or IT systems. The analysis necessitates technical system knowledge, process and process flow knowledge, understanding of the technical needs and goals of the organization and the ability to design and coordinate multiple technical systems to accomplish these goals.
7	Data Analysis	* Research data needs * Determine factual data information * Human / data interaction * Design and implement data improvements	Data analsysis provides representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. This includes any representations such as characters or analog quantities to which meaning is or might be assigned.
8	Report Development	* Research reporting needs * Design necessary system reports * Support user reporting needs / requirements	Report development in the public health domain specializes in designing and developing reports needed by organizational management to monitor and track data processed by the public health system (ELR data, results, summaries, etc.)
9	Application Development	* Develop custom system applications * Modify existing applications as necessary * System maintenance - break / fix * System design	Application Development is designing a software product or package, or software built from scratch, that needs to be developed to address a specific organization function or need. In application development, software is capable of producing any feature needed by the organization (within the capacity of that specific software).
10	SQL (Structured Query Language)	* Provide system data queries * Support end user query needs * Produce usable data	Structured query langauge (SQL) is the ability to perform data insert, query, update and delete, schema creation and modification, and data access control. In the public health IT systems this skill is used to provide both data management and data mining (or data query).

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11	**Skill Set**	**Summary**	**Definition**
12	Geographic Information Systems (GIS)	* Mapping of geographic data * Analysis of geographic data * Support public health systems * Support tracking (geographic) of issues	GIS is a system of hardware and software used for storage, retrieval, mapping, and analysis of geographic data. GIS includes the operating personnel and the data that go into the system. Spatial features are stored in a coordinate system (latitude/longitude, state plane, UTM, etc.), which references a particular place on the earth. Descriptive attributes in tabular form are associated with spatial features. Spatial data and associated attributes in the same coordinate system can then be layered together for mapping and analysis. GIS can be used for scientific investigations, resource management, and development planning in the public health environment.
13	Software Testing	* Software quality control * Functional testing * Application testing * UAT	Technical Skill A great software tester must have significant coding skills in order to understand the system under test, communicate with developers, and write test automation. Most technical skills can be learned through education or experience. There is some disagreement among my colleagues about exactly what level of coding skill is needed to be a great tester, but I believe that a great tester must have at least 7.5-on-a-scale-of-1–10 (applications) development skills.
14	Quality Assurance	* Quality control * Bug / issue discovery * Verify usability * Continual review / improvement	Quality management ensures the effective design of processes that verify customer needs, plan product life cycle and design, produce and deliver the product or service expected by the organization. This also incorporates measuring all process elements, the analysis of performance and the continual improvement of the products, services and processes that deliver them to the organization. Quality management is also referred to as business management or integrated management.
15	Database Administration	* Database knowledge * System integration knowledge * Database management * Database development * Database design	Data base administration directs or performs all activities related to maintaining a successful database environment. Responsibilities include designing, implementing, and maintaining the database system; establishing policies and procedures pertaining to the management, security, maintenance, and use of the database management system; and training employees in database management and use.
16	Data Modelling	* Understands logical data models * Understands physical data models * Database knowledge * Business analysis knowledge	Data modeling includes the understanding of logical and physical data models. The skills are closely aligned with those of data base administration and data base architecture. The modeling includes data provided by business analysis. The use of case studies is also an integral part of data modeling.
17	Integration Analysis (HL7)	* HL7 knowledge * System (IT) knowledge * Surveillance system knowledge * System interface	Integration analysis a greater understanding of healthcare workflow (between systems, agencies, locations, etc.) so that the interfaces can better match operational or system requirements. Integration analysis supports the design and implemetnation of an interface engine to ease connections to remote care facilities (e.g., physician practices, labs)
18	Network / Security Analysis	* Data security * Network security / protocol * Access control, procedures, process * System breach protocol * Data standards, format	Network analsysis is responsible for assisting in the coordination effort to remediate network security alerts and respond to information security related incidents. This includes creation and development of security measures to safeguard information against accidental or unauthorized modification, destruction, or disclosure in coordiantion with management, programmers, risk assessment staff, auditors, facilities, and other security departments to identify and plan for security in all aspects of data, applications, hardware, telecommunications, and computer installations.
19	Grant Writing	* Business goal * Grant, funding options * Grant requirements * Funding needs * Grant process, policy, procedure	The grant writing process includes research (organizational needs, possible funding opportunities, potential grantor,etc.) This research includes statistics and data that show why there is a need for the grant and the program. The research should also include who is affected by this issue. Grant writing must include persuasive writing and the ability to convey, based on the research illustrated, both the need for the grant and the expected benefits or outcomes of the grant .
20	Web development	* HTML * JavaScript * PHP or ASP * Database management / interface * Image editing * Flash (?) * Programming languages * Usability * Design compliance (508)	Web development includes the knowledge of and use of HTML, JavaScript, PHP or ASP, some database management (understanding of database design, data input and retrieval), image edit program, Flash, programming languages such as JAVA or PERL

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21	**Skill Set**	**Summary**	**Definition**
22	Message Transport	* 7 layer OSI Model ** Application layer ** Presentation layer ** Session layer ** Transport layer ** Network layer ** Data Link layer ** Physical layer * Message / data format * Data security, integrity * Testing	Message transport is the movement of data (health care data) within the data network. This is supported by the Transport Layer Security (TLS) protocol which ensures privacy between communicating applications and their users on the Internet. The OSI, or Open System Interconnection, model defines a networking framework for implementing protocols in seven layers. Control is passed from one layer to the next, starting at the application layer in one station, proceeding to the bottom layer, over the channel to the next station and back up the hierarchy. This system supports the basic structure of message transport (in a technical / network system) and provides a standardized structure. 7 OSI Model Application Presentation Session Transport Network Data Link Physical
23	Data Standards	* Data needs * Data sharing / cooperative needs * Data element standards * Data interoperability * Database requirements	1. Enabling effective sharing of information between collaborating partners - improving communication that, in turn, improves collections. 2. Reducing the amount of manual intervention in information processing and facilitating straight-through processing, which increases productivity and can reduce costs. 3. Providing a means for publishing the data element standards for the benefit of information exchange partners. 4. Streamlining access to improve knowledge-worker workflow. 5. Improving the quality, consistency, and interoperability of enterprise information. 6. Supporting the ongoing adoption of the use of standard data elements in coordination with any kind of application or system modernization. 7. Promoting the migration to a services-based architecture, which will simplify the process for improving and extending production systems.
24	Format Standards	* Formatting needs * Formatting constraints, requirements, policies, procedures	The organization of information according to preset specifications (usually for computer processing)
25	System Architecture / Infrastructure	* System design * System implementation * System integration * System architectural design * Strategic planning (system, scalability)	System architecture / infrastucture is the art of expressing a model or concept of information in complex IT / technical systems. Among these activities are library systems, Content Management Systems, web development, user interactions, database development, programming, technical writing, enterprise architecture, and critical system software design. Information architecture has somewhat different meanings in these different branches of IS or IT architecture. Most definitions have common qualities: a structural design of shared environments, methods of organizing and labeling websites, intranets, and online communities, and ways of bringing the principles of design and architecture to the digital landscape.
26	Public Health Domain Knowledge	* Public health knowledge * Understanding of public health system, needs, goals, output	Public health domain knowledge includes knowledge of the public health system, the needs of the system, expected (future) needs and the knowledge / skill to support both the current and future needs of the system.
27	Surveillance System Knowledge	* Surveillance system * Surveillance system needs * Surveillance system policies / procedures * Goals of system * Impact of system on public health	Surveillance system knowledge includes the systematic collection, analysis and interpretation of health-related data essential to the planning, implementation, and evaluation of public health practice.Surveillance is undertaken to inform disease prevention and control measures. The data gathered in surveillance can be used as an early warning system, identify public health emergencies, to guide public health policy and strategies, to document impact of an intervention or progress towards specified public health targets/goals and to understand/monitor the epidemiology of a condition to set priorities and guide public health policy and strategies

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28	**Skill Set**	**Summary**	**Definition**
29	Reportable Conditions Subject Matter Expertise	* Surveillance system knowledge * Subject matter experise (diseases) * Multil-disciplinary approach / knowledge * Change control / understanding	Specified diseases and conditions are mandated by State laws and regulations to be reported by healthcare providers and laboratories to the local health officer. * Manage surveillance systems with cross-CDC utility; * Develop new ideas, methods, tools, information sources, analysis, and dissemination; * Expertise and resources for addressing common challenges; * Engage, collaborate and coordinate activities with CDC programs and partners; * Multidisciplinary approach to epidemiology, statistics, informatics, practice management and evaluation; * Contribute to emergency preparedness and response programs; * Anticipate and adapt to changing landscape: healthcare, technology, policy, expectations and needs for information, legislative mandates (ARRA, HITECH).
30	Systems Integration Knowledge	* Business need (system integration view) * Agency-wide system knowledge * System design goal * Strategic planning * System design	System integration knowledge in the public health arena provides the skill to develop strategies for agency-wide system integration, and consider a wide set of situational attributes in determining the proper course of action. As the broader healthcare community on which agencies increasingly rely for their data continue to get more sophisticated in their health information exchange capabilities and approaches, public health agencies must understand how they can participate and integrate with this new world.
31	Laboratory Expertise	* Public health laboratory * Scientific testing * Detailed records / record keeping * Laboratory equipment knowledge * Experimental testing * Scientific quality control * Scientific analysis, conclusions * Laboratory procedures / policies	Laboratory technicians use the principles of science and mathematics to assist scientists in laboratory procedures. Laboratory technician duties are more practically oriented than the analytical duties of a scientist. Laboratory technicians set up, operate and maintain laboratory instruments, monitor experiments, and make observations. They must keep detailed logs of all of their work. Laboratory technicians prepare solutions and reagents used for testing, install and repair laboratory equipment, perform experimental testing, maintain quality control records, calculate and record results, and often develop scientific conclusions based on test data. Laboratory technicians also assist with the development of laboratory procedures to achieve the best result quality possible
32	Public Health Administration and Policy	* Public health accounting * Human resource management * Public health policy * Financial management * Strategic planning	Public health administration and policy inluces subjects such as accounting, human resource management, personnel supervision, financial management, or strategic planning in the public health domain. An integral part of this skill is the thorough understanding of public health policy, including legal restrictions and requirements.
33	Legal Expertise	* Legal knowledge * Relevant (public health) legal knowledge * Existing law knowledge * Legal process - policy, law updating	Public health legal experts support those who need help developing, implementing and enforcing laws that solve public health problems. On a broader level, legal expertise helps increase the use and effectiveness of public health laws in protecting, promoting and improving public health. Its experts will provide legal technical assistance on many public health topics, and education and training to those working to apply the law to pressing public health issues.
34	Risk Management	* Identify human risks * Identify operational risks * Identify procedural risks * Identify specific project risks * Identify financial risks * Identify legal risks * Identify technical risks * Identify risk mitigation * Manage risks * Strategic planning	Risk management includes the identification and mitigation of risks which can be idenfitied as human, operational, reputational, procedural, project, financial, technical, natural, political and other. This identification and mitigation includes estimation of risks, management of the risk (both good and bad), alternative plans in the case of risk and risk avoidance.

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35	**Skill Set**	**Summary**	**Definition**
36	Contract Management	* Procurement process * Federal, state, local contract law * Contract negotiation * Contract renewal * Contract close out * Contract suspension / cancellation * Cost control	Contract management includes in-depth understanding of contract law, federal and commercial law, procurement processes and best practices. This may include procurement process, contract negotiation and administration, contract renewal and / or termination, and contract accounting needs.
37	Communications / Outreach	* Publicity * Communications / news releases * User updates	Public health communication plans, implements, manages and evaluates statewide and targeted communication and outreach effort for public health agencies / organizations.
38	Technical Support	* Provide end user technical support * Record, resolve, escalate system issues * Track resolution * Communication with user community	Technical supports provides guidance to navigate Health Information Technology systems, use the systems effectively, build on the knowledge and information content, and effectively use HIT safely to improve the quality and efficiency of care delivery.
39	LOINC / SNOMED Expertise	* LOINC knowledge * SNOMED knowledge	LOINC / SNOMED expertise provides skills specific to either LOINC or SNOMED.
40	Info Systems Support	* Business Analysis / Process Flow Modelling * IT Project Management * Surveillance System Knowledge * Public Health Domain Knowledge * Systems Integration Knowledge * Public Health Administration and Policy * Communicatins / Outreach	Liaison between surveillance system, program managent and IT.