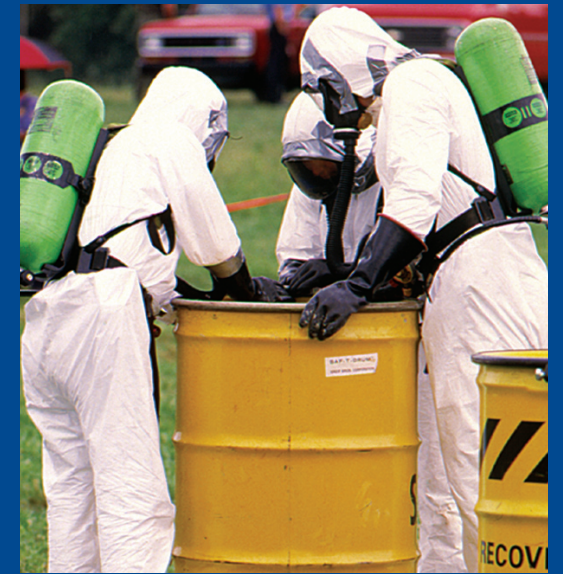# Competency-To-Curriculum Toolkit

CENTER FOR HEALTH POLICY
COLUMBIA UNIVERSITY
SCHOOL OF NURSING

APTR
ASSOCIATION FOR PREVENTION TEACHING AND RESEARCH

March 2008

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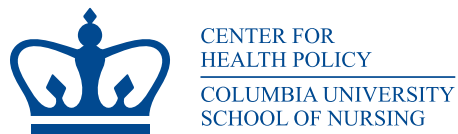
Revised Edition March 2008

FOREWORD

The Competency-to-Curriculum Toolkit grew out of discussions originally held in 2001 at the CDC-sponsored Public Health Workforce Meeting in Athens, Georgia. Its final publication was made possible through the assistance of the Association for Prevention Teaching and Research (APTR). Funding was provided by a Cooperative Agreement between the Centers for Disease Control and Prevention (CDC) and APTR, award number 5U50CD300860.

While all the participants in the public health workforce dialogue over the past several years have had an impact on the content of this document, special thanks go to Kathleen Miner, PhD, Emory University and Marita Murrman, EdD, Columbia University for their insightful comments and contributions.

The Competency-to-Curriculum Toolkit is presented to the public health workforce training and education community as an aid in assuring that the workforce, key to the public health infrastructure, is truly competent to perform essential public health services in all areas of public health practice.

In the world of public health practice, many of those charged with developing on-the-job training and education for workers are not professional educators, nor do they have specific expertise in selecting the appropriate material to teach. The information contained in the Competency-to-Curriculum Toolkit may prove to be of help to those involved in public health workforce education as well as individual workers interested in life-long learning.

This 2008 edition of the toolkit has been reviewed and updated to reflect experiences in the workforce since 2001. In order to get feedback on how this document is used, and ways in which it may be improved if future editions are developed, a feedback form is included as an appendix. Please take time to provide your observations and suggestions. If you are reading this document on the web, the form may be returned electronically to kmg24@columbia.edu

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PREFACE

The *Competency-to-Curriculum Toolkit* which follows is developed from the dialogue of the Working Group on Competency-Based Curriculum of the Public Health Workforce Development Collaboration. It is a partial fulfillment of goals articulated in the *Global and National Public Health Workforce Development Implementation Plan* published by the Centers for Disease Control and Prevention in June, 2001.

It is based on a bias that a public health organization should be one in which learning is a constant, and in which all workers participate. This is consistent, for example, with the organizational learning model promulgated by Peter Senge, in his book *The Fifth Discipline: The Art & Practice of the Learning Organization.* There are five disciplines of the learning organization. *Systems Thinking* is a conceptual framework to make patterns clear. *Personal Mastery* works to continually clarify and deepen our personal vision. *Mental Models* are deeply ingrained assumptions that require us to turn the mirror inward and scrutinize what we see. *Building Shared Vision* requires the skills of unearthing shared pictures of the future that foster genuine commitment and enrollment. Finally, *Team Learning* is vital because teams, not individuals, are the fundamental learning unit in organizations. The learning process required to make a successful conversion of competency sets to viable curricula and training modules will benefit from application of this approach to learning organizations.

The original competency-to-curriculum working group stated: "A model is needed that helps the learner move through a continuum. The person's view of a life-long learning curve must intersect with the organization's goals. Competency models must be functional and include training and experience. Competencies can be used to write job descriptions, write curricula, and evaluate performance." In fact, many of the competency sets available to describe what a public health worker should be able to do have been written with the work site, rather than the academic institution in mind. Furthermore, many of those who encounter the competencies are more familiar with thinking about individual, very specific training programs rather than the full sequence of learning experiences that might compose a full course of study or curriculum.

The *Competency-to-Curriculum Toolkit* is meant to be a resource that any public health worker interested in the education and training of the workforce can use to retrieve the right "tool" for carrying out the activities for moving from a competency set to developing a curriculum. It should be particularly useful to those who do not have curriculum development specialists readily available. The first part of the *Toolkit* is competency-focused: assumptions, definitions and development. The appendix to this is a matrix of known public health related competency sets from many sources, with access information. The second part of the *Toolkit* focuses on the process of moving from competencies to curriculum and training modalities, with an example of the process using one of the key leadership competencies.

The steps to move from competencies to curricula in this description are:

- Specify the audience,

- Develop learning objectives,

- Assess the time availability of the learner,

- Determine how and when learning will be measured,

- Determine expected outcomes,

- Determine content and availability,

- Match teaching methods to the audience,

- Develop curriculum, and

- Evaluate the learner after the materials have been presented.

PART I. COMPETENCY BASICS

Introduction

This toolkit has been developed to facilitate the development of a public health workforce competent to meet its assigned mission. One part of that process is the use of competency-based curricula in public health training or education. A competent workforce is one of the key components of the nation's public health infrastructure: a workforce that has the basic knowledge, skills, abilities and attitudes that allow for delivery of essential public health services in all program areas, in a way that is culturally competent and effective. Some workers come to public health practice with prior preparation in a health profession, or in public health itself they are challenged to apply this knowledge appropriately. Others are hired for a specific task or skill that is not unique to public health, and must learn about the public health world view in order to be most effective. And the skills of all of these workers will need continuous updating as the science on which public health practice is based evolves and as our understanding of the needed knowledge base expands. For example, the Institute of Medicine (IOM) has identified informatics, genomics, cultural competency, public health law and ethics, communication, global health and community-based participatory research as essential for all public health professionals.

A number of key assumptions are reflected in the material that follows. These include:

1. Competencies can be acquired through formal training, but also through experience, performance support systems, and on-the-job training. In formal training programs, acquiring competency may require that classroom experience be complemented by opportunities for practice or internship.

2. All public health workforce development efforts will be competency-based and will be facilitated by ready access to life-long learning, consistent with the *Strategic Plan for Public Health Workforce Development,* January 2000.

3. Public health competencies are expected to be clearly consistent with at least one of two foundation documents: *Public Health in America* (the essential services of public health) and the Council on Linkages Between Academia and Public Health Practice *Core Competencies for Public Health Professionals,* finalized in April, 2001 **(www.phf.org/competencies.htm).**

4. While all workforce development will be competency-based, there is no expectation for a single uniform curriculum either in formal academic settings or in agencies. Each developmental opportunity is unique, and the curriculum should match needs. To the extent possible, however, it is effective and efficient to use existing materials, as they support consistency across settings.

5. Competency statements will not make a distinction between "academic" and "practice" acquired knowledge and skills. They will link theory and research (academic learning) with the execution of work (experience and skill).

6. Individual competencies intersect with but do not replace organizational performance standards and organizational capacities. Organizations do not have capacity and cannot meet performance standards if workers are not appropriately competent.

7. Any one competency set may apply broadly to many or all public health workers or be specific to a small subset. The developers of any competency set should specify the workers and functional level for which they were written. The term "worker" is the most inclusive and means all leadership, professional, technical and support staff in public health.

8. The many public health competency sets will intersect, and those seeking to plan comprehensive public health workforce development will probably work with multiple sets (see table 1, page 20).

9. Competency statements are not "wish" lists or lists of content "topics". They describe 1) an acceptable level of performance, 2) the skill needed to perform the work, and 3) the actual conditions under which the work is executed today.

10. Competency statements written with the workplace in mind express a standard level of worker performance, and generally compress into one statement multiple skills or areas of knowledge. Unsatisfactory and outstanding performance levels may be derived from this standard, but performance is intended to be measured over time, not at the end of specific training experiences.

11. Competency statements developed for educational institutions, degree granting programs or training institutions also express a standard level of performance, but are generally much more finely divided and tend to be sequential. Performance can generally be measured in a relatively short period of time, such as immediately following a class or training event.

12. Competencies need to be routinely updated as science evolves, disease and injury morbidity and mortality trends change, or communities express new expectations of public health practice.

[1] U.S. Department of Health and Human Services. (2000). *Healthy People 2010*. Washington, DC.
[2] Gebbie, K., Rosenstock L, Hernandez LM, (Eds.) (2003). *Who will keep the public healthy? Educating public health professionals for the 21st century*. Washington, DC: National Academies Press.

Competencies

What is a competency?

Many people concerned about workforce development are familiar with KSA's (knowledge, skills, abilities) and *behavioral objectives* to describe what a student or worker needs to know, and how that knowledge is assessed at the end of an educational program or training session or in a performance appraisal. Many of us are also familiar with curricula that are based on a fixed set of topics relevant to a particular profession or job. In recent years, however, discussion has shifted to specifying competencies needed by members of a given profession, or needed by those filling a certain role.

Broadly defined, competencies are actions which are observable in the execution of one's work. In other words, competencies are **applied skills and knowledge** *that enable people to perform work.* Any competency statement should consist of the following elements:

- **action verb** (observable or measurable performance of a worker)

- **content** (subject matter, type of performance, specific task)

- **context** (limitations or conditions of work environment)

Several specific definitions of a competency are:

A complex combination of knowledge, skills and abilities demonstrated by organization members that are critical to the effective and efficient function of the organization (Center for Public Health Practice, Emory University).

A combination of observable and measurable skill, knowledge, performance behavior and personal attributes that contribute to enhanced employee performance and organizational success (American Compensation Association).

Knowledge, skills, and attributes that are required to accomplish the desired outcomes. They are generally accepted but there may be exemptions for individual jobs depending on actual job requirements (CDC/ATSDR Master Development Plan).

The level reached by the person who is initially a novice, and who, after training and experience, reaches the level where they can be competent; a "floor" or a basic collection of the minimum knowledge, skills, and values needed for an entry-level specialist to practice dental public health. (American Association of Public Health Dentistry **www.aaphd.org/default.asp?page=competencies.htm**)

Two examples:

Public Health Leaders/Administrators *must be competent to* **DESCRIBE** [the action] *the chain of command and management system ("incident command system" or similar protocol)* [the content] *for emergency response in the jurisdiction* [the context].

Public health supervisory and management staff are competent to *TRANSLATE* [the action] *policy* [the content] *into organizational plans, structures, and programs* [the context].

Why use competencies?

As we act on recommendations to build a stronger public health workforce, it is important to use common competency sets to facilitate communication across programmatic and organizational lines, and facilitate career growth. For program areas, worker groups or essential services for which competency sets do not yet exist, it is important that training and education is developed in a way that at least is consistent with identified core competencies in public health practice, as appropriate to the level and type of worker who will be the learner. Identifying learning needs exclusively by what a learner is (nurse, physician) or by a program area (tuberculosis control, environmental protection) can be very effective, but limits potential gain. Focusing on what the learner has to be able to do as a result of participation in training often takes advantage of and strengthens the interdisciplinary nature of public health practice. Each of these approaches has a benefit, the former in assuring that individual professionals have the basic competencies that are expected from a given individual on the interdisciplinary team, and the latter in assuring that all of the team members working together on a program and in an organization or community have in common what is needed for that program to work effectively.

Some of the competency sets discussed later in this toolkit are of these two types (i.e., profession and program). The kit also provides information on competencies that are cross-cutting, such as those that are core to all public health professionals, those that are essential for emergency preparedness for any public health worker, those that apply to leadership behavior by public health agency staff, those that are basic to the application of an emerging science (e.g., genomics) to public health practice. Cross-cutting competencies are intended to assist public health practitioners to grow in ability to apply public health values and principles effectively and collaboratively over time, in any agency or program.

Competency statements can be confused with many other forms of documentation related to the workplace. Competencies are none of the following, but they may be useful in developing:

- Specific job descriptions. If there is a set of competencies for a specific program area, such as maternal and child health, not every worker needs every competency, but it is essential to assure that at least one staff member of the program is expected to perform each of the competencies.

- Needs assessments. Assessment of workers' developmental needs should be based on expected behavior, that is competencies, rather than lists of topics. This will increase the likelihood that results will contribute to effective training that will raise performance levels. It also allows the combination of competencies into sets specific to the identified needs of an individual or a group of workers. Competency-based needs assessment can be done by individual self-assessment, observer or supervisor assessment, or a combination of the two.

- Curricula. No listing of competency statements automatically becomes a curriculum. The desired competencies must be re-stated, and sometimes broken into smaller units, or arranged in different order, before a well-structured curriculum and teaching planning can occur. Having the competencies as a beginning, however, facilitates the process.

- New employee orientation and employee training. Key competencies expected of all employees or new employees should be incorporated into orientation, as refreshers (if employees are expected to have them at employment), or as the first step of training (if they are to be developed on the job).

- Self-assessment by public health employees. Tools for self assessment that ask "Am I able to…" can be developed to aid employees in planning their own life-long learning plans.

For 21st century public health practice, there is agreement that specified competency sets should be developed consistent with the core competencies for public health practice described jointly by academics and practitioners of public health. When used properly they can contribute to the delivery of essential public health services in any program area or community. In preparing any training or development program in public health, whether for use in a traditional classroom setting, in a workplace, or through some distance-based format, the important starting point is choice of the competencies to be gained or strengthened by the learner.

Taxonomy

People talk about competencies using a variety of terms that are not as yet fully standardized. It is thus necessary to pay careful attention to the context in which any one term is used in any resource materials that might be available. This section provides an overview of some of the ways in which competency sets are organized or described.

What is the nature of the competency set?

Core:

Competencies that represent a set of skills, knowledge and attitudes necessary for the broad practice of public health as they apply to front-line staff, senior-level staff, and supervisory and management staff.

Competencies that are required for all employees in all positions throughout the agency, although they may be required at different proficiency levels and in varying degrees based on the position (also called "foundation"). (CDC Master Development Plan).

Competencies stated in general terms so they can apply broadly to all programs; denotes those competencies that are common to all preventive medicine residents regardless of their specialty area (American College of Preventive Medicine).

Competencies needed by local environmental health practitioners working in local health departments. Build on the basic assumption that practitioners have the "technical" capacity to do their jobs (Environmental Health Competency Project).

Critical Elements:

Required of all employees who are classified as supervisory or managerial (Federal government non-Senior Executive Service).

Cross-Cutting:

Competencies that transcend the boundaries of the specific disciplines within public health and help to unify the practice of public health.

Discipline Specific:

Competencies necessary for specialized roles within public health. Specific competencies that are necessary for the performance of certain jobs within certain practice settings.

Domains:

Competencies grouped in a large set by the type/area of knowledge or skill involved (Council on Linkages). These domains have been used by a number of the groups developing new public health competency sets, and include:

- Community dimensions of practice skills
- Financial planning and management skills
- Leadership and systems thinking skills
- Policy development/program planning skills
- Analytic assessment skills
- Basic public health sciences skills
- Cultural competency skills
- Communication skills

Foundational Elements:

Content areas of core competencies (Environmental Health Competency Project).

Key Principles:

Competencies…needed for various health care professionals in different modes of education with different, alternate types of specialization in health, at various levels of education, at respective stages of career progression…(American Informatics Association).

Technical Competency:

Tasks of the entry-level person, a uniform standard for the training, education, and certification (Environmental Health).

Universal:

Competencies generally applicable to all workers in an organization.

Who is the worker audience?

Many competency sets may be applied to a wide range of workers who are expected to perform at different levels according to experience, professional role, level of education, or job function. They have been categorized or subdivided, however, using a wide range of descriptors.

- **Bachelor, Masters, Doctorate (American Informatics Association)**

    Bachelor: to impart specialized knowledge in the field as well as skills in practice-oriented application of the acquired knowledge.

    Masters/Doctorate: education of scientific character that includes theory, specialized knowledge and practical skills to enable independent research and the methodical advancement within the field.

- **Front-line, senior-level, supervisory, management (Council on Linkages)**

    Front-line [professional and technical] staff: carry out the bulk of day-to-day tasks (e.g. sanitarians, counselors, nurses, and other clinicians, investigators, lab technicians, health educators). Responsibilities may include basic data collection and analysis, field work, program planning, outreach activities, programmatic support, and other organizational tasks.

    Senior-level staff: having a specialized staff function but not serving as manager (e.g., epidemiologists, attorneys, biostatisticians, health planners, health policy analysts). They have increased technical knowledge of principles in specific content areas and may be responsible for coordination and/or oversight of pieces of projects or programs.

    Supervisory and Management Staff: responsible for major programs or functions of an organization, with staff who report to them. Increased skills can be expected in program development, program implementation, program evaluation, community relations, writing, public speaking, managing timelines and work plans, presenting arguments and recommendations on policy issues.

- **Leader/administrator, professional, technical, clerical(Emergency Preparedness Competencies, US Bureau of Labor Statistics)**

    Leader/Administrator: involving the exercise of analytical ability, judgment, discretion, personal responsibility, and the application of a substantial body of knowledge of principles, concepts, and practices applicable to one or more fields of administration or management. (Public health leaders/administrators may also be public health professionals serving in a leadership/administrative capacity.)

    Professional: requiring knowledge in a field of science or learning characteristically acquired through education or training equivalent to a bachelor's degree or higher degree with major study in or pertinent to the specialized field. The work of a professional occupation requires the exercise of discretion, judgment, and personal responsibility for the application of an organized body of knowledge that is constantly studied to make new discoveries and interpretations, and to improve the data, materials, and methods.

Technical: non-routine work, typically associated with, and supportive of a professional or administrative field. Such occupations involve extensive practical knowledge gained through on-the-job experience or training less than that represented by college graduation and involve substantial elements of the work of the professional or administrative field, but require less than full competence in the field involved.

Clerical/Support: structured work in support of office, business, or fiscal operations; duties are performed related to the tasks to be performed.

- **Executive, managerial, and supervisory (US Office of Personnel Management)**

Supervisory: critical to success for leaders of employees, which includes team leaders and first-line supervisors. These competencies build on the core competencies, or foundation competencies, and then proceed to address specific knowledge, skills and attributes required for effective supervision and team leadership.

Managerial: important for employees who are leaders of other leaders (above first-line supervision) with a focus on more managing.

Executive: Competencies required for employees at executive leadership levels and linked to the Executive Core Qualifications for Senior Executive Services (SES) Positions.

At what level is the worker audience?

A variety of methods are used for differentiating the expected level of performance for various workers depending on their job duties or level of responsibility. Some of these terms describe the importance of the competency to the expected job function while others describe the level of expected proficiency or prior experience of the learner.

- **Critical, important, relevant, useful, little or none**

- **Aware, knowledgeable, proficient**

Aware: Basic level of mastery of the competency. Individuals may be able to identify the concept or skill but have limited ability to perform the skill.

Knowledgeable: Intermediate level of mastery of the competency. Individuals are able to apply and describe the skill.

Proficient: Advanced level of mastery of the competency. Individuals are able to synthesize, critique or teach the skill.

- **Generalist, specialist, specific additional training/other**

   Generalist: Expectations of most board-certified practitioners, or those trained through personal experience.

   Specialist: Expectations of specialists, e.g., occupational medicine.

   Other: Competencies that are not assumed to be characteristic of generalists or specialists; additional training to develop the skill.

- **Basic, intermediate, advanced [alternately: introductory, intermediate, advanced; or none, beginner, intermediate, advanced]**

   Basic: Describes the level at which someone new to a skill or attribute should be performing. Often this professional is at the staff or entry-level in the organization. However, it may also describe a seasoned professional with limited exposure to the area.

   Intermediate: Describes the level at which someone with detailed knowledge in the area should be performing. It is expected that this person is capable of taking operational responsibility for an area. Often this person is at a mid-level within the organization, and has supervisory responsibilities.

   Advanced: Describes the level at which someone with mastery of a skill should be performing. Often this person is the highest ranking individual with skills in a given area in the organization. However, it may also describe a lower-level professionals with specialized knowledge in an area. Notwithstanding this exception, certain competencies can only be demonstrated by a senior or very advanced practitioner.

- **Combined Model:**

   For most people development over time is in two dimension. One is the level of expertise in one competency. The other is movement to more complex competences, as illustrated in Figure 1.

Figure 1. Development of worker ability

Steps to developing competencies

Competency sets may be developed under at least three circumstances: to define clearly the competencies displayed by practitioners already functioning well in an area of public health practice; to specify competencies in a newly identified or emerging area of practice; or to update competencies as the practice field evolves over time.

Defining competencies when the practices are already well-known and established

Because the language of competency-based practice and competency-based training is relatively new, there are many aspects of public health practice that have never been described in this manner. In order to assure that future efforts are consistent with this preferred approach, however, it is necessary to state the expected competencies. In such a case, the specification of competencies resembles most closely a project of descriptive research. That is, the individual or group specifying the competencies can go to existing exemplar practitioners who are known to be practicing in the manner desired by those mastering the competencies in the future, and by observation or interview, or a combination there of, identify the actions, content and context involved. This is the approach taken by health educators in specifying competencies for Certified Health Education Specialists, and on which the certifying examination for that field is based. Identification of the competencies for practice of preventive medicine now used to monitor progress through residency training in that specialty also fit this model, as does the identification of Core Competencies for Public Health Professionals developed through the Council on Linkages between Public Health Practice and Academia.

Specifying competencies in emerging areas of practice

The above approach does not work when there is no history of expert practitioners because the area of competency is new, or where there may have been diverging approaches now needing to be reconciled. In this situation, a method such as the Delphi Method becomes useful. The Delphi Method was developed at the RAND Corporation in the 1960's to combine individual expert opinion into group consensus, and is typically used to study topic areas where there is a lack of adequately documented knowledge. It is a structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback. For example, this is the method used to identify core competencies in emergency preparedness for public health workers. While public health workers have responded to emergencies for decades, it had not been thought through as an area needing special description, a gap called to our collective attention by interest in bioterrorism response.

This method is specifically designed for use with geographically dispersed panels of experts. As an alternative, panels of experts may be assembled for face-to-face dialogue to draft candidate competency sets for further review by a wider circle of interested practitioners. This is the method adopted by the panels developing draft competencies in genomics for public health workers.

In this type of competency development, there will usually be some group of experts who have already begun work in the field. Their tendencies will be to specify needed competencies at a level of detail that will be overwhelming to the rest of the practice community. At some point in the process it will be necessary to share the draft competencies with the intended audience or group to achieve the competencies, to explore what level of expertise or specificity is appropriate. As a reminder, any competency set can be developed with levels appropriate for beginners, experienced practitioners or experts.

Updating competencies

Few of the competency sets for public health practice have been in use long enough for updating to be an issue, but it should be thought of from the beginning. As the practice field evolves, for example, competencies in communication for use in informing communities and mobilizing partnerships (two essential public health services) should be reviewed to assure that they are necessary, accurate and timely. The draft competencies for genomic practice will undoubtedly need to be revised within a short time as the science of genomics and genetics emerges. The more specific the competency set, the more often review and update should occur. The Council on Linkages sought input on the Core Public Health Professional Competencies in 2003, but based on comments received made few changes.

The process for review and update should involve some combination of description of current practices in the field, to identify what new competencies or variations in competencies practitioners have added, and expert consultation regarding the latest view of that area of practice. The interval for updating should, ideally, be anticipated at the time the competency set is made available. Given the dynamic nature of public health practice, it is safe to say that any competency set that has gone un-reviewed for a period of longer than 5 years may be out of date, and should be used with care in curriculum design or other application.

Existing Competency Sets

The table of competencies in Appendix 1, *A Collection of Competency Sets of Public Health–Related Occupations and Professions* showing competency sets of public health-related occupations and professions was originally produced by the Office of Workforce Policy and Planning (OWPP), Centers for Disease Control and Prevention (CDC), for the *Competencies and Curriculum Workgroup of the Public Health Workforce Development Progress Workshop* (June 18-19, 2001) and revised for the *Public Health Workforce Development Annual Meeting* (September 12-13, 2001). It has been updated for this document in early 2008.

This expansive table of known competency sets is intended to be a resource document for persons interested in public health workforce development and includes on-line sources for all documents listed. The competency sets listed can be used as an aid to curricula developers and instructional designers in planning training programs for the nation's public health workers. These sets provide relevant examples of competency statements from occupations and professions that share in the work of public health. Used as a starting point, this list may help avoid duplication of efforts and build on the existing efforts among the many public health training centers across the U.S.

The competency sets are differentiated into the following categories:

- **Core - Basic Public Health** (addresses the essential services of public health)

- **New Topical Area**s (emergency response, genomics, law)

- **Functional Areas** (leadership, management, supervisory, secretarial)

- **Discipline Specific** (professional, technical, entry-level, student)

- **Other Topical Areas** (MCH, STD, etc.)

The competencies listed are those known at the time of printing and having a level of recognition beyond an individual scholar or academic institution. The comprehensive search for related public health worker competencies included numerous global and site-specific web searches, list-serve queries, and personal contacts. Since the field of workforce development is evolving, many competency sets are in development by government, academic institutions, public health and professional organizations or combinations thereof. This list does not contain all available competency sets. No endorsement should be inferred by inclusion, nor should criticism be inferred from omission of any set.

As can quickly be determined by looking at the competency sets, they frequently intersect or overlap. In some cases, the same general area of practice or performance has been addressed in several competency sets. While it is hoped that increased communication among those interested in workforce development will decrease the development of what appear to be duplicative sets, there will still be times when an individual or an organization needs to select among several sets for the competencies that will form the basis of curriculum. Leadership competencies are one such example. Table 1, Leadership Competencies, is an example of the sort of comparison one might develop to facilitate selection of the specific competencies to be included in a training or developmental program.

EXAMPLES

Table 1: Leadership Competencies in Overlapping Competency Sets

Domain	National Public Health Leadership Development Network	Council on Linkages Between Academia & PH Practice / PH Foundation	Florida DOH (Hay Group)
Visionary Leadership	Core Transformational Competencies • Visionary leadership • Sense of mission • Effective change agent • Social forecasting	• Creates a culture of ethical standards within organizations and communities • Helps create key values and shared vision and uses these principles to guide action	Foundational Competencies • Public Service Integrity • Emotional Presence • Community Focus
Political	Transorganizational Competencies • Understanding organizational dynamics	Uses the legal and political system to effect change	Politically Savvy Understanding organizational dynamics • Impact & Influence • Networking Organizational Awareness
Organizational Development	Political Competencies • Political process • Negotiation •Ethics and power • Marketing and education (social marketing, etc.)	• Applies the theory of organization structures to professional practice • Identifies internal and external issues that may impact the delivery of essential public health services (i.e., strategic planning). • Contributes to development, implementation and monitoring or organizational performance standards	Champions for Public Health • Networking • Flexibility • Impact/influence • Organizational commitments
Community Collaboration, Mobilization, Development	Interorganizational collaborating mechanisms	Facilitates collaboration with internal and external groups to ensure participation of key stakeholders	Getting results for citizens • Problem solving • Information seeking • Initiative achievement orientation
Teamwork	Team Building Competencies • Develop team orientated structures & systems • Facilitate development of teams & work groups • Serve in facilitation & mediation roles • Serve as an effective team member	Promotes team and organizational learning	State/County Leadership • Developing others • Leadership • High performance standards • Teamwork & cooperation
Communications	Social Marketing		

PART II: DEVELOPING A COMPETENCY-BASED CURRICULUM

Curriculum

Converting *Competencies to... Curriculum to... Training* requires some serious work. Competencies are not curricula, learning objectives, or performance standards. Competencies do not address the details of how the knowledge and skills are to be packaged, the best methods for learning, or the criteria for attainment. By definition, educational objectives are yardsticks of a learner's knowledge and skills attained by participation in a training course. Competencies do provide a framework based on performance outcomes on which curriculum and training are developed and delivered and against which performance can be measured.

What is a curriculum?

A curriculum is a complete set of learning experiences, including classroom, experiential and self-guided, that taken altogether lead to the achievement of a desired set of competencies. Any one competency, if complex, may require several learning experiences to achieve mastery. Any one course or learning experience may be directed at learning one competency, or several.

Why competency-based training?

The traditional approach to education is for teachers to determine what content needs to be learned, teach it, and then test to see if the content was learned. Current research in education supports the transition to competency-based training, that is, alignment of training with the outcomes and assessment of worker performance in relation to specific work conditions on professional expectations. This competency-based approach to training requires that educators and workers identify the necessary knowledge, skills, and behaviors as applied in real working conditions and settings.

A Model: Getting from competencies to curricula to training

A short summary of the approach is the following:

- Profile the job duties, performance expectations, and measurement criteria

- List the competencies needed to meet those expectations, in all relevant domains, such as communication, or analytic skills

- Develop a list of 4-5 intended learning outcomes for each competency included

- Array the learning outcomes into a curriculum with methods and resources.

In order to accomplish these steps, the following questions must be answered in order:

1. What is the desired outcome of the performance?

2. What competencies are needed by public health workers to bring about these activities?

3. What are the indicators (qualitative and quantitative; behavioral; measurable) that define each competency?

4. What are the specific Knowledge, Skills, and Abilities (KSA's) which must be learned to achieve each competency?

5. How can these KSA's fit into a comprehensive curriculum or set of courses?

6. What is the current educational level and learning style of the targeted public health worker group?

7. What are the most effective educational strategies and teaching methods (e.g., case study, demonstration, supervised field work) for workers to learn each identified KSA?

8. What instructional resources are already available or modifiable for use that address the competencies, or identified need?

9. How will learning or improved performance be measured?

The following pages explicitly describe a process for designing curricula from competencies, using examples that begin with a single competency statement. Two examples are provided, one in a leadership area and the other in emergency preparedness. The sequential steps are summarized in Table 2.

Table 2: Steps to a competency-based curriculum	
Step 1	Select a competency
Step 2	Define key words or phrases within the competency statement
Step 3	Describe the target audience for the education program
Step 4	Sequentially separate all required sub-competencies
Step 5	Develop objectives (the desired learner behavior or state) for each sub-competency
Step 6	Relate an evaluation procedure to learning objectives
Step 7	Provide an example of relevant literature (content) from theory and practice for each sub-competency
Step 8	Plan specific classroom or other learning experiences that encompass all identified learning objectives
Step 9	Evaluate learning after completing training

Example 1: Leadership

This example is based on the assumption that a trainer in a large local health department has been asked to develop leadership training for staff. It was selected because it is an abstract, complex competency needed by many public health workers. It should be relatively easier to adapt this approach to less complex competencies. The example also assumes that someone in the agency has completed a needs assessment and determined that the leadership staff needs to be more competent in the application of performance standards.

Step 1: Competency Selected

The competency of interest is Competency 6 in the Public Health Professional Leadership and Systems thinking skills: Contributes to the *development, implementation,* and *monitoring* of <u>organizational performance standards.</u>

Step 2: Definition of Key Terms

In this example, the key term is *ORGANIZATIONAL PERFORMANCE STANDARDS,* which can be defined as follows:

> Organizational performance standards are expectations of an organization, which articulate the role and function of the organization as an entity that will impact on the health system(s) within the community. These expectations include the National Performance Standards, which reflect the expectations of the health system(s) at the state and/or local level. However, organizational performance standards go beyond the core public health functions and essential public health services. These standards also include such components as the dynamic political processes, the organizational culture, the learning milieu (environment) of the organization, the leadership's vision and the relationship between the organization and the health systems with which it interfaces.

Step 3: Define Target Audience:

For this example, the trainer is drawing on a competency that generally applies to public health professionals with leadership responsibilities at the local, state, federal, and national levels, and to faculty who teach public health professionals. The trainer will have to specify which of the professional staff of the local health department fit this definition. Staff might include the agency director, all department or bureau heads, and those professionals in staff positions that must provide leadership to a professional group within the agency, such as a designated lead public health nurse.

Step 4: Separate The Sub-Competencies:

If the identified leadership staff are to be competent to "Contribute to the *development...* of organizational performance standards (OPS)", then they will have to be competent to:

1. Determine assets available for developing an OPS program as well as identify gaps and deficits.

2. Prioritize areas of need for OPS development.

3. Use a collaborative and inclusive approach in the development of OPS.

If they are to "Contribute to the... *Implementation* of OPS", this will require the ability to:

1. Analyze the organization's culture (the pattern of human behavior within an organization that includes thoughts, communications, actions, customs, beliefs, and values) and readiness in relationship to the OPS program goals.

2. Assess the political climate of the organization, community, state and nation regarding conditions that advance or inhibit the goals of the OPS program.

3. Develop strategies to achieve the OPS program goals within the organizational culture.

And finally, if they are to "Contribute to the... *monitoring* of OPS", they will need the ability to:

1. Design specific plans to monitor the agency's performance including the impact on subgroup population disparities in health status and risk exposure to determine if particular needs of vulnerable populations are being adequately addressed.

2. Use OPS outcomes to influence or shape health policy development.

3. Revise OPS as necessitated by changes in community, state and national data.

Step 5: Develop Learning Objectives:

The following table illustrates the statement of learning objectives that can fulfill the desired competencies.

COMPETENCY	SUB-COMPETENCY	LEARNING OBJECTIVE
Contributes to the development… of Organizational Performance Standards (OPS)	Determines assets available for developing an OPS program as well as identifies gaps and deficits	• discusses implications of theories and models of assessment approaches • utilizes both qualitative and quantitative data gathering techniques in a systematized approach • identifies externally imposed requirements or standards writes an OPS program justification using needs assessment data
	Prioritizes areas of need for OPS development	• articulates the benefits of the OPS program • takes reasonable inferences from community data • recognizes relevancy of community data for a particular performance standard • evaluates existing performance standards for local use • recognizes whether there are or will be sufficient community data to monitor each performance standard • gives novel examples of garnering needed information (e.g., linking existing data sets, developing new partnerships with other public or private agencies to share data of mutual interest, developing new primary data collection strategies) • considers external decision makers and community expectations
Contributes to the… Implementation of OPS	Uses a collaborative and inclusive approach in the development of OPS	• recognizes that the choice of performance indicators is a political process and requires the participation of a broad constituency base • identifies potential partners for collaboration including criteria for selection • describes processes for which multiple partners could be involved • demonstrates networking and group process skills to facilitate collaboration
	Analyzes the organization's culture (the integrated pattern of human behavior within an organization that includes thoughts, communications, actions, customs, beliefs, and values) and readiness in relationship to the OPS program goals	• infers a relationship between the knowledge, attitudes and skills of individual public health workers and the extent to which an organization is delivering the public health services and achieving the OPS program goals • determines staff knowledge regarding performance standards • distinguishes formal and informal aspects of the organizational culture • identifies factors that influence organizational culture • determines how the OPS program will influence and will be influenced by organizational culture

COMPETENCY	SUB-COMPETENCY	LEARNING OBJECTIVE
Contributes to the… Implementation of OPS	Assesses the political climate of the organization, community, state and nation regarding conditions that advance or inhibit the goals of the OPS program	• describes political factors that influence the OPS program • analyzes sources of political pressures supporting and opposing the OPS program • creates ways of adapting the OPS program within the political climate develops resources, as feasible within the identified system
	Develops strategies to achieve the OPS program goals within the organizational culture	• debates actions that may be used within the organizational culture • communicates need for OPS to those who will be involved in implementing and monitoring the OPS program • seeks ideas and opinions of those who will affect or be affected by the OPS program • incorporates feasible ideas and recommendations into the planning process • obtains commitments from personnel and decision-makers who will be involved in the OPS program • integrates concepts of continuous quality improvement throughout the implementation process • insures an operational, competency-oriented training program for staff responsible for implementing and monitoring the OPS program • documents OPS program goals and interventions
Contributes to the… Implementation of OPS	Designs specific plans to monitor the agency's performance including the impact on subgroup population disparities in health status and risk exposure to determine if particular needs of vulnerable populations are being adequately addressed	• defines the community to be monitored • employs or develops appropriate data collecting methods • uses strategies that serve as exemplary examples of OPS program implementation and monitoring in given settings • identifies ways in which the implementation and monitoring component of the OPS program may need to be adapted to different settings • predicts consequences if errors or changes in implementing and/or monitoring the program occur documents OPS program outcomes
	Uses OPS outcomes to influence or shape health policy development	• describes how OPS outcomes influence or shape health policy development • drafts OPS policy Analyzes intended to encourage administrative, regulatory, or legislative changes • advocates for health policy development bases on OPS outcomes
Contributes to the… Monitoring of OPS	Revises OPS as necessitated by changes in community, state and national data	• compares actual OPS outcomes with the stated standards and desired outcomes • assesses relevance of existing OPS to current needs • Participates in professional groups developing ongoing OPS

Step 6: Select Evaluation Procedures

Table 3 presents a wide array of evaluation approaches matched to the specific learning objectives identified for this hypothetical program. The choice of methods will depend upon the length of time available, and the capacities of both the organization and the teaching team. The evaluation decision should be made about each objective prior to planning the learning experiences.

Table 3. Evaluation Procedures from Most Efficient to Least Efficient

LEARNING OBJECTIVES	Objective Written Test	Objective Self-Reports of Feelings	Objective Self-Reports of Past Actions	Essay Written Test	Oral Questioning	Planned Observation by Checklist or Rating	Paper, Theme, or Report	Product, Scored or Rated	Performance, Observed	Incidental Observation by Instructor or Evaluator	Situational Test
1a. discusses implications of theories and models assessment approaches	—	—	—	—	—	X	—	—	X	X	—
b. utilizes both qualitative and quantitative data gathering techniques in systemized approach						X					
c. identifies externally imposed requirements or standards	X										
d. writes an OPS program justification using needs assessment data							X				
2a. articulates the benefits of the OPS program						X					
b. makes reasonable inferences from community data	X										
c. defines desired outcomes given a set of community data	X										
d. recognizes relevancy of community data for a particular performance standard				X							
e. evaluates existing performance standards for local use							X				
f. recognizes whether there are or will be sufficient							X				
g. gives novel examples of garnering needed information				X							
h. considers external decision makers and community expectations					X						
3a. recognizes that the choice of performance indicators is a political process and requires the participation of a broad constituency base					X						
b. identifies potential partners for collaboration including criteria for selection							X				
c. describes processes by which multiple partners could be involved							X				
d. demonstrates networking and group process skills to facilitate collaboration						X					X

LEARNING OBJECTIVES	Objective Written Test	Objective Self-Reports of Feelings	Objective Self-Reports of Past Actions	Essay Written Test	Oral Questioning	Planned Observation by Checklist or Rating	Paper, Theme, or Report	Product, Scored or Rated	Performance, Observed	Incidental Observation by Instructor or Evaluator	Situational Test
4a. infers a relationship between knowledge, attitudes and skills of individual	—	—	—	—	—	X	—	—	X	X	—
b. determines staff knowledge regarding performance standards								X			
c. distinguishes formal and informal aspects of the organizational culture					X						
d. identifies factors that influence organizational culture	X										
e. determines how the OPS program will influence and will be influenced by organizational culture				X							
5a. describes political factors that influence the OPS program				X							
b. analyzes sources of political pressures supporting and opposing the OPS program								X			
c. creates ways of adapting the OPS program within the political climate								X			
d. develops resources, as feasible, within the identified system								X			
6a. debates actions that may be used within the organizational culture					X						
b. communicates need for OPS to those who will be involved in implementing and monitoring the OPS program						X			X		
c. seeks ideas and opinions of those who will affect or be affected by the OPS program										X	
d. incorporates feasible ideas and recommendations into the planning process								X			
e. obtains commitments from personnel and decision-makers who will be involved in the OPS program						X					
f. integrates concepts of continuous quality improvement throughout the implementation process									X		
g. insures an operational, competency-oriented training program for staff responsible for implementing and monitoring the OPS program								X			
h. documents OPS program goals and interventions								X			

LEARNING OBJECTIVES	Objective Written Test	Objective Self-Reports of Feelings	Objective Self-Reports of Past Actions	Essay Written Test	Oral Questioning	Planned Observation by Checklist or Rating	Paper, Theme, or Report	Product, Scored or Rated	Performance, Observed	Incidental Observation by Instructor or Evaluator	Situational Test
7a. defines the community to be monitored	—	—	—	—	—	X	—	—	X	X	—
b. employs or develops appropriate data collecting methods				X							
c. uses strategies that serve as exemplary examples of OPS program implementation and monitoring in given settings									X		
d. identifies ways in which the implementation and monitoring components of the OPS program may need to be adapted to different settings				X							
e. predicts consequences if errors or changes in implementing and/or monitoring the program occur				X							
f. documents OPS program outcomes									X		
8a. Describes how OPS outcomes influence or shape health policy development				X							
b. drafts OPS policy Analyzes intended to encourage administrative, regulatory, or legislative changes							X				
c. advocates for health policy development based on OPS outcomes									X		
9a. compares actual OPS outcomes with the state and national data							X				
b. assesses relevance of existing OPS to current needs							X				
c. participates in professional groups developing ongoing OPS							X			X	

Source: Wolf, R.M. (1990). *Evaluation in Education: Foundations of competency Assessment and Program Review. 3rd Edition*. New York, NY: Praeger Publishers.

Step 7: Identify Relevant Key Content

For this example, the following relevant literature from theory and practice has been identified as contributing to the needed content:

- Durch, J.S., Bailey, L.A., & Stoto M.A. (Eds.) (1997). *Improving health in the community*: *A role for performance monitoring.* Washington, D.C.: National Academy Press.

- Gable, C.B. (1990). A compendium of public health data sources. *American Journal of Epidemiology,* 131, 381-394.

- Hennessy, C.H., Moriarty, D.G., Zack, M.M., Scherr, P.A., & Brackbill, R. (1994). Measuring health-related quality of life for public health surveillance. *Public Health Reports,* 109(5), 665-672.

- Halverson, P.K. (2000). Performance measurement and performance standards: old wine in new bottles. *Journal of Public Health Management and Practice,* 6(5), vi-x.

- *Journal of Public Health Management and Practice.* Aspen Publication.

- Kingdon, J.W. (1995). *Agendas, alternatives and public policies. Second Edition.* Boston, MA: Little, Brown.

- Krieger, N., Chen, J.T., & Ebel, G. (1997). Can we monitor socioeconomic inequalities in health? A survey of U.S. health departments' data collection and reporting practices. *Public Health Reports,* 112(6), 481-491.

- Moore, C.M. (1987). *Group techniques for idea building.* Newbury Park, CA: Sage Publications.

- Moore F.I. (1999) *Functional job analysis: Guidelines for task analysis and job design.* Geneva: World Health Organization.

- Nelson, J. & Essien, J. (2001). The public health competency handbook: *Optimizing individual and organizational performance for the public's health.* Atlanta, Ga.: Affiliated Graphics/Kits (PHCH).

- Petersen, D.J. & Alexander, G.R. (2001). *Needs assessment in public health: a practical guide for students and professionals.* New York: Kluwer Academic/Plenum Publishers.

- Rogers, E.M. (1995). *Diffusion of innovations. 3rd edition.* New York: Free Press.

- Roush, S., Birkhead, G., Koo, D., Cobb, A., & Fleming, D. (1999). Mandatory reporting of diseases and conditions by health care professionals and laboratories. *Journal of the American Medical Association,* 282(2), 164-170.

- Rowtiz L. (2003) *Public health leadership: Putting principles into practice.* Sudbury, Mass: Jones and Bartlett Pub.

- Taylor, H. (1997). *Public Health: Two words few people understand even though almost everyone thinks public health functions are very important.* New York: Louis Harris and Associates.

- Turnock, B.J. (1997). *Public Health: What it is and how it works.* Gaithersburg, Maryland: Aspen Publishers, Inc.

- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Public Health Practice Program Office, *National Public Health Performance Standards Program.* Retrieved November 15th, 2000, from http://www.cdc.gov/programs/partnr07.htm

Example 2: Emergency Preparedness

This second example assumes that the senior public health nurse in a health department with a staff of 75 has been asked to assure that all of the staff who assist in communicable disease control and prevention are prepared to fill necessary communicable disease roles in the case of a bioterrorist attack. This is a simpler training concept to prepare for than the leadership example, but still requires careful thinking and planning.

Step 1: Competency Selected

The competency selected for the example is from the emergency preparedness competencies for public health communicable disease staff: define modifications to the agency's internal command notification and coordination structure that are required for bioterrorism response

Step 2: Definition Of Key Terms

In this example, the key term is bioterrorism response, which is defined as: the complete range of activities included in an agency plan that allow for identification of a bioterrorism event in a community, mitigation of exposure or spread, treatment those who are infected, and appropriate public health contribution to overall community recovery.

Step 3: Define Target Audience

The target audience for this training will include all professional staff who participate in the epidemiology, immunization, sexually transmitted disease, tuberculosis and food-born disease control programs. It is possible that only some of these individuals work full-time in communicable disease control, or rotate through this program either on a routine basis, or as the need arises.

Step 4: Separate The Sub-Competencies.

If these staff are to be able to *define* modifications to the agency's internal command notification and coordination structure that are required for bioterrorism response then they must be able to:

- Describe the agency's basic notification structure

- Describe the differences between bioterrorism response and other emergency response

- Analyze application of bioterrorism response to the usual notification structure

- Define a modified command structure

Step 5: Develop Learning Objectives:

The following table illustrates the statement of learning objectives that can fulfill the desired competencies.

COMPETENCY	SUB-COMPETENCY	LEARNING OBJECTIVE
Define modifications to the agency's internal command notification and coordination structure that are required for bioterrorism response	Describe the agency's basic notification structure	• Describes the uses of a notification structure • Define the difference between an organizational chart and a notification structure • Define the role of command in emergency response
	Describe the differences between bioterrorism response and other emergency response	• Articulate the principles of emergency response • List the participants in community emergency response • Define the role of public health in emergency response • Describe the variation in response needed for a bioterrorist event
	Analyze application of bioterrorism response to the usual notification structure	• Identify the potential risks in using the ordinary notification structure in a bioterrorism event • Describe the partners in bioterrorism response at a community level • Specify the key junctures at which a different notification or command response could be useful
	Define a modified command structure	• Specify the changes in notification needed for bioterrorism response • Define the command structure for public health • Present an agency-specific emergency notification and command structure sufficient for a bioterrorism event

Step 6: Select Evaluation Procedures

Table 4 presents a wide array of evaluation approaches matched to the specific learning objectives identified for this hypothetical program. The choice of methods will depend upon the length of time and resources available, and the capacities of both the organization and the teaching team. The evaluation decision should be made about each objective prior to planning the learning experiences.

Table 4. Evaluation Procedures from Most Efficient to Least Efficient: Emergency Preparedness Example

LEARNING OBJECTIVES	Objective Written Test	Objective Self-Reports of Feelings	Objective Self-Reports of Past Actions	Essay Written Test	Oral Questioning	Planned Observation by Checklist or Rating	Paper, Theme, or Report	Product, Scored or Rated	Performance, Observed	Incidental Observation by Instructor or Evaluator	Situational Test
1a. Describes the uses of a notification structure	X	—	—	X	X	—	—	—	—	—	—
b. Define the difference between an organizational chart & a notification structure	X										
c. Define the role of command in emergency response	X										
2a. Articulate the principles of emergency response	X			X			X				
b. Describe the variation in response needed for a bioterrorist event	X										
c. List the participants in community emergency response	X										
d. Define the role of public health in emergency response	X										
3a. Identify the potential risks in using the ordinary notification structure in a bioterrorism event	X										
b. Describe the partners in bioterrorism response at a community level	X										
c. Specify the key junctures at which a different notification or command response could be useful	X										
4a. Specify the changes in notification needed for bioterrorism response								X			
b. Define the command structure for public health								X			
c. Present an agency-specific emergency notification and command structure sufficient for a bioterrorism event influenced by organizational culture									X		

Source: Wolf, R.M. (1990). *Evaluation in education: foundations of competency assessment and program review.* Pg. 54 (3rd ed.). New York, NY: Praeger Publishers.

Step 7: Identify Relevant Key Content

For this example, the following relevant literature from theory and practice has been identified as contributing to the needed content:

- Allan, S. (2002). The challenges of local preparedness for bioterrorism and other emergencies. *NACCHO Exchange*, 1(1): 1-5.

- Barbera, JA, & Macintyre, A. G. (2002). The reality of the modern bioterrorism response. *Lancet, 360 Suppl,* s33-3

- Carley, KM & Harrald, JR (1997). Organizational learning under fire. *American Behavioral Scientist,* 40(3): 310-332.

- Cope, JR (2002). Workforce Competencies for Emergency Preparedness. *NACCHO Exchange,* 1(2):1, 4-6

- Centers for Disease Control and Prevention (2002). *Bioterrorism & Emergency Readiness: Competencies for All Public Health Workers.* Retrieved November 15th, 2002, from **www.cumc.columbia.edu/dept/nursing/chphsr/pdf/btcomps.pdf**

- Center for Public Health Preparedness. (2001) *Basic emergency preparedness for public health nurses.* New York, NY: Columbia University, Mailman School of Public Health.

- Firshien, J. (2002). Public Health Preparedness for Disaster: Perspective from Washington, D.C. *Journal of Urban Health,* 79(1): 6-7.

- National Association of County and City Health Officials (2003) Bt Create: *A Customizable Bioterrorism Tabletop Exercise Builder.* Available at **www.naccho.org/pubs/product1.cfm?Product_ID=48**

- Quarantelli, EL (1997). Ten criteria for evaluating the management of community disasters. *Disasters,* 21(1): 39-56.

- Simmons, S.C., Murphy, T.A., Blanarovich, A., Workman, F.T., Rosenthal, DA., & Carbone, M. (2003). Telehealth Technologies and Applications for Terrorism Response: A Report of the 2002 Coastal North Carolina Domestic Preparedness Training Exercise. *Journal of the American Informatics Association,* 10(2): 166-76.

- U. S. Department of Homeland Security, Federal Emergency Management Agency (2003). State and Local Guide (SLG) 101: *Guide for All–Hazard Emergency Operations Planning.* Available at **www.fema.gov/plan/gaheop.shtm**

Step 8: Plan the Learning Experiences

It is only at this point that the planner is ready to map out a sequence of classroom, self-guided or experiential learning experiences that can take the learner to the desired level of competency. If many of the agency staff have been participating in basic emergency preparedness training, then a course of one or two hours with exercises in drawing and changing organizational communication lines and critiquing their potential effectiveness or problems may be sufficient. If there has been no prior training in emergency preparedness and response, then the unit needed to teach this material may need to be delayed until sufficient basic knowledge is developed.

PART III: APPENDICES

Appendix 1: A Collection of Competency Sets of Public Health - Related Occupations and Professions

KNOWN COMPETENCY SETS	WORKER LEVEL [1]	STATUS AND WHERE TO FIND THEM
Core – Basic Public Health		
Council on Linkages: Core Competencies for Public Health Professionals, 2001	Front-line, senior professional, supervisor, manager	Public Health Foundation (PHF). **www.phf.org/competencies.htm**
MPH/ASPH Comps	MPH student	Deans of the Schools of Public Health, universal SPH competencies being drafted **www.asph.org/ www.asph.org/document.cfm?page=851**
Dentistry		
Competency Statements for Dental Public Health, September 1997	Professional	American Association of Public Health Dentistry (AAPHD) **www.aaphd.org/default.asp?page=competencies.htm**
New Topical Areas		
Emergency Response		
Core Public Health Worker Competencies for Emergency Preparedness and Response, April 2001	Leader, administrator, professional, technical, support	Center for Health Policy, Columbia University School of Nursing **http://cumc.columbia.edu/dept/nursing/chphsr/ projects/emerprep/pdf/Competencies.pdf**
Bioterrorism & Emergency Readiness Competencies for All Public Health Workers, November 2002	Leader, administrator, professional, technical support	Center for Health Policy, Columbia University School of Nursing **www.cumc.columbia.edu/dept/nursing/chphsr/ pdf/btcomps.pdf**
Fire & Emergency Services Competency Module	Technical	Industry-Specific Competency Modules, KnowledgePoint **www.knowledgepoint.com/?/products/compmod/ firecomplst.html**
Engineering		
Sample Elements and Tasks for Engineer, October 1999	Professional	Headquarters Performance Management System, DOE **http://humancapital.doe.gov/pms/engineer.htm**
Environment		
Environmental Health Competency Project: Recommendations for Core Competencies for Local Environmental Health Practitioners, May 2001	Front-line, local-level professional	American Public Health Association (APHA) and National Center for Environmental Health (NCEH/ CDC) with NEHA, NAACHO, ASTHO, FAC, AAS, NALBOH **www.cdc.gov/nceh/ehs/Corecomp/Core_ Competencies_EH_Practice.pdf**

KNOWN COMPETENCY SETS	WORKER LEVEL [1]	STATUS AND WHERE TO FIND THEM
Discipline Specific		
Epidemiology		
Evaluation of EIS Competency Domains: Epidemiologic Process, Communication, and Professionalism, 2001	Doctoral-level Epidemic Intelligence Officer	Epidemic Intelligence Service (EIS), CDC
Maternal and Child Health Epidemiology Fellowship Competency Guidelines	Professional	Council of State and Territorial Epidemiologists (CSTE) with CDC www.cste.org/pdffiles/mchfinal.pdf
Infection Control and Epidemiology: Professional and Practice Standards, 1998	Professional	Association for Practitioners in Infection Control & Epidemiology (APIC) and Community and Hospital Infection Control Association, Canada (CHICA) www.apic.org/AM/Template.cfm?Section=Search&section=Professional_and_Practice_Standards&template=/CM/ContentDisplay.cfm&ContentFileID=274
Hospital & Clinicians		
Genomics		
Genomics Competencies for the Public Health Workforce, May 2001	Administrator, professional*, all workers (technical, support)	Office of Genetics and Disease Prevention and Public Health Practice Program Office, CDC www.cdc.gov/genomics/training/competencies/comps.htm#professionals * (clinicians, educators, environmental workers, epidemiologists, laboratorians)
Competencies in Public Health Genetics, June 1999	MPH, MS, PhD student	"Public Health Genetics In the Content of Law, Ethics and Policy" Program, Institute for Public Health Genetics, Public Health Genetics Training Collaboration (CDC, HRSA funded) http://depts.washington.edu/phgen/about/Competencies.shtml
Core Competencies in Genetics Essential for All Health Care Professionals, February 2000	All health care professional, student	National Coalition for Health Professional Education in Genetics (NCHPEG), (RWJ, DOE funded) www.nchpeg.org/core/Core_Comps_English_2007.pdf
Human Resources		
Human Resource Competencies for the Year 2000: A Professionals' Toolkit for Professional Development	Professional	Northeast Human Resources Association, (NEHRA), www.nehra.com/ Society for Human Resource Management (SHRM) book, profiles of 31 competencies www.shrm.org/foundation/competency.asp
Directory of Competencies for the Human Resources Community in the Public Service of Canada, October 1998	Professional	The Learning Centre, Public Service Commission, Canada www.psagency-agencefp.gc.ca/hrmm-mgrh/hrmm/policies-politiques/CBHRM/framework_cbm/fcbm1_e.asp#_Toc467471942
Human Resources Competencies Model	Manager	International Personnel Management Association (IPMA), 22 competencies www.ipma-hr.org/content.cfm?pageid=194

KNOWN COMPETENCY SETS	WORKER LEVEL [1]	STATUS AND WHERE TO FIND THEM
Informatics		
Public Health Informatics Competencies, 2001	Professional	Center for Public Health Informatics, School of Public Health and Community Medicine, University of Washington www.cphi.washington.edu/projects/phi-comp
Recommendations of the International Medical Informatics Association (IMIA) on Education in Health and Medical Informatics, October 2000	Physician, nurse, pharmacist, manager, record administrator, teacher, student	American Medical Informatics Association (AMIA), Health and Medical Informatics Education Workgroup www.amia.org/
Registered Health Information Administrator (RHIA) and RHIT (technician) Examination Content: Domains, Subdomains and Tasks	Administrator, technical	American Healthcare through Quality Information (AMIMA) www.ahima.org/certification/index.asp
Certified Coding Specialist (CCS) Coding Competencies	Coder	American Healthcare through Quality Information (AMIMA) www.ahima.org/certification/index.asp
Medical School Objectives Project: Medical Informatics Objectives, August 2000	MD student	Association of American Medical Colleges (AAMC), School Objectives Project www.aamc.org/meded/msop/
Laboratory		
Body of Knowledge	Laboratorian, specialist, phlebotomist, technician	American Society of Clinical Laboratory Science (ASCLS), book, competencies for CLS and CLT regardless of setting, www.ascls.org/index.asp http://www.aphl.org/Pages/default.aspx
Law		
Core Legal Competencies for Public Health Practitioners, June 2001	Health official, governance boards, front-line, senior-level professional, supervisor, manager	Center for Law and Public's Health at John's Hopkins and Georgetown Universities (with CDC, PHF) www.publichealthlaw.net/Training/TrainingPDFs/PHLCompetencies.pdf
Functional Areas		
Leadership		
Public Health Leadership Competency Framework, August 2000	Health director, health officer	Center for Law and Public's Health at John's Hopkins and Georgetown Universities (with CDC, PHF) www.publichealthlaw.net/Training/TrainingPDFs/PHLCompetencies.pdf
Library and Information Science		
Information Literacy Competency Standards for Higher Education, January 2000	Undergraduate student	Association of College and Research Libraries (ACRL), American Library Association (ALA), www.ala.org/acrl/ilcomstan.html
Competencies for Special Librarians of the 21st Century, 1998	Entry-level professional	Special Libraries Association (SLA), supported by Association for Library and Information Science Education (ALISE) and Medical Library Association (MLA) www.sla.org/content/SLA/professional/meaning/competency.cfm
Knowledge and Skills for Entry-level Cataloguers	Entry-level technical	American Library Association (ALA), Association for Library Collections & Technical Service (ALCTS). Committee on Education, Training and Recruitment for Cataloging www.pla.org/ala/hrdrbucket/3rdcongressonpro/criteriaprograms.cfm

KNOWN COMPETENCY SETS	WORKER LEVEL [1]	STATUS AND WHERE TO FIND THEM
Management		
Supervisors' and Managers' Critical Elements, October 1999	Supervisor, manager	Headquarters Performance Management System, DOE http://humancapital.doe.gov/PMS/features.pdf
Management Academy for Public Health Competencies, March 1999	Public & private sector manager	Management Academy for Public Health (MAPH), North Carolina Institute for Public Health (CDC, HRSA, Kellogg, RWJ funded); http://maph.unc.edu
Competency Profile: Public Service Managers	Middle-managers	The Learning Centre, Profile for Leaders and Managers, Public Service Commission, Canada www.psagency-agencefp.gc.ca/leadership/klc-ccl/manager_e.asp
Public Health Prevention Service Competency Set, September 1997	MS-prepared entry level manager	Public Health Prevention Service (PHPS) Fellowship, CDC www.cdc.gov/epo/dapht/phps/competencies.htm
Competencies for Professional Development: Managing in the Middle, 1998	Mid-level manager	Exploring Inspired Leadership, The Banff Center www.banffmanagement.com
Medicine		
Core Competencies and Performance Indicators for Preventive Medicine Residents, 1999	MD-trained, Preventive Medicine Resident	American College of Preventive Medicine (ACPM) with HRSA http://acpm.org/corecomp.htm
Occupational and Environmental Medicine Competencies, January 1998	Physician administrator, generalist, specialist	American College of Occupational and Environmental Medicine (ACOEM) www.acoem.org/uploadedFiles/Publications/OEM_Competencies/ACOEM OEM COMPETENCIES.pdf
An Inventory of Knowledge and Skills Relating to Disease Prevention and Health Promotion, 1989	MD student	Association for Prevention Teaching and Research (APTR) www.aptrweb.org/resources/pdfs/Inventory.pdf
Nursing		
Public Health Nursing Practice for the 21st Century, 2001	Professional	Minnesota Department of Health, Division of Nursing and University of Minnesota, School of Nursing (HRSA-funded) draft tool for assessment, undergoing validation by the Association of State and Territorial Directors of Nursing (ASTDN) and Association of Community Health Nurse Educator (ACHNE); www.health.state.mn.us/divs/cfh/ophp/consultation/phn/21st-century_grant.html
Nutrition – Dietetics		
Core Competencies for the Supervised Practice Component of Entry-Level Dietitian (Technician) Programs, 1997	Dietitian, student, dietetic technician student	Commission on Accreditation for Dietetics Education, "Accreditation Manual for Dietetics Education Programs, Revised 4th Edition," Catalog #6107 www.eatright.org/cps/rde/xchg/ada/hs.xsl/CADE_813_ENU_HTML.html
Pharmacy		
Certification in Geriatric Pharmacy Practice: Content Guide, 1997	Professional	"Certified Geriatric Pharmacist: A Bridge to Enhanced Respect, Expanded Responsibility – and More" by David K. Buerger

KNOWN COMPETENCY SETS	WORKER LEVEL [1]	STATUS AND WHERE TO FIND THEM
Physical Activity		
Athletic Training Clinical Proficiencies, 1999	Entry-level professional, student	National Athletic Trainer's Association (NATA) http://www.nata.org clinical focus "Athletic Training Educational Competencies" **www.cewl.com/**
Standards of Competence, August 2000	Therapist	Federation of State Boards of Physical Therapy **www.fsbpt.org/standards/index.asp**
Secretary - Support		
National Competency Standards – Public Administration, Competency Based Assessment and Training Handbook, 1999	Mid-level administrator, clerical	Office of the Commissioner for Public Employment, Australia's Northern Territory Government **www.ocpe.nt.gov.au/workforce_development/ workforce_capacity/cbat** **www.apsc.gov.au/publications96/hrmframework5.htm**
Secretary - Support		
CASAS Competency List	Basic life skills	Secretary's Commission on Achieving Necessary Skills, DOL **www.casas.org/home/index. cfm?fuseaction=home.showContent&MapID=610**
Other Content Areas		
Description of the Doctoral Program: Educational Objectives	PhD students	School of Social Work, University of North Carolina at Chapel Hill, learning objectives **http://ssw.unc.edu/doctoral/description/index.html**
Career Development: Core Competencies (Evaluation and Inspections), December 1999	Manager, program analyst, team leader, administrator, technical support, secretary	Office of Evaluation and Inspections (OEI), Office of Inspector General (OIG), **www.hhs.gov/oig/oei/ evaluator/evaluator.htm**
Generic Policy Analyst Draft Competency Profile	Professional	Public Service Commission, Canada School of Public Service
Nebraska Standards in Business Education Essential Learnings: Focus on Economic	Student, public	**www.csps-efpc.gc.ca/corporate/ldo-2007-08_e.pdf**
National and State Content Standards in Economics	Student, public	EcEd Economics EducationWeb competencies and learning objectives **http://ecedweb.unomaha.edu/ standards/home.htm**
Core Competency Framework for Entry into the Accounting Profession: Functional Competencies	Entry-level Professional	American Institute of Certified Public Accountants (AICPA) **www.aicpa.org/edu/func.htm**
Competency Model for the New Finance Professional	Professional, technical, support	American Institute of Certified Public Accountants (AICPA) **www.aicpa.org/pubs/jofa/apr1999/waller.htm**
Core Competencies (future of the CPA profession), 2001	Professional, technical	Vision Project Team and State Societies, CPA Vision Project: 2001 and beyond **www.cpavision.org**
Competency Profile: Public Service Managers	Post-doctoral student	Community-Based Public Health (CBPH), University of Michigan School of Public Health, Kellogg sponsored, program competencies **www.sph.umich.edu/chsp/program/index.shtml**

KNOWN COMPETENCY SETS	WORKER LEVEL [1]	STATUS AND WHERE TO FIND THEM
Community-based Health Community Health Scholars Program: Goal and Competencies, June 1999	Professional	Association of Teachers of Maternal and Child Health (ATMCH) **http://leadership.mchtraining.net/**
The Provision of Culturally Competent Health Care	Leader, professional, technical, support	Amy V Blue, PhD., Assistant Dean for Curriculum and Evaluation, Medical University of South Carolina College of Medicine **www.musc.edu/fm_ruralclerkship/culture.html**
STD/HIV Program Operations Guidelines for STD Prevention: Training and Professional Developments	Clinician, disease investigator, HIV counseling	Center for HIV, STD, and TB Prevention, CDC **www.cdc.gov/std/program/training.pdf**

[1] Categories: Leader, Professional, Technical, Support. The Public Health Work Force Enumeration 2000, National Center for Health Workforce Information and Analysis, HRSA, DHHS. Order document at **www.ask.hrsa.gov/detail.cfm?id=BHP00079,** download at **http://cumc.columbia.edu/dept/nursing/chphsr/pdf/enum2000.pdf**

Appendix 2: Bibliography

- Chambers, D. W. (1993). Toward a competency-based curriculum. *Journal of Dental Education,* 57(11), 790-793.

- Diamond, RM. (1998). *Designing and Assessing Courses and Curricula: A Practical Guide. Revised Edition.* San Francisco, CA: Jossey-Bass Inc.

- Glassman, P., Chambers, D.W. (1998). Developing competency systems: A never ending story. *Journal of Dental Education,* 62(2), 173-182.

- Wolf, R.M. (1990). *Evaluation in Education: Foundations of competency Assessment and Program Review.* 3rd Edition. New York, NY: Praeger Publishers.

- American Association for Health Education, National Commission for Health Education Credentialing, Society for Public Health Education. (1999). *A competency-based framework for graduate-level health educators. Allentown, PA: NCHEC.*

Appendix 3: Comment Form

Comments on Competency to Curriculum Toolkit

Please Correct:

Please Correct:

Please Correct:

Optional Contact Information:

Name_____

Organization _____

Email: _____

Phone:_____   Fax: _____

Please send all correspondence to:

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