Basic and Cross-Cutting Practice Competencies
For Public Health Workforce Development

The Illinois Public Health Preparedness Center (IPHPC) is collaborating with other public health training programs in the development of a consensus approach for credentialing public health workers. Competency-based credentialing at as many as four levels is envisioned: (1) a basic introductory level for all public health workers who lack formal education and training in public health; (2) a general public health practice level that emphasizes crosscutting skills and competencies for key professional groupings within the public health workforce (such as managers, community health improvement specialists, environmental health practitioners, and nurses working in public health settings); (3) a highly specialized level for professionals who must be proficient in rapid responses to modern public health threats such as bioterrorism and emergent infectious diseases; and (4) an overall leadership level. Any new credentialing strategies must be considered in light of current training needs and existing credentialing programs. Realistically, a variety of complementary strategies and pathways will be necessary to enhance the performance of the public health workforce.

This brief report seeks to provide a foundation for this collaboration by explicating a competency framework that focuses on the training needs of the first and second levels of public health workers. This framework draws on several recent examinations of the public health workforce and its training needs and on formulations of relevant competencies developed by national public health practice and academic organizations. This framework seeks to clarify and standardize the basic and cross-cutting competencies needed by public health workers, providing a model that can be used, expanded, and further refined by the Public Health Preparedness Centers and other public health training networks.

Current IPHPC activities related to this framework include online training initiatives that address the need for (1) basic "Public Health 101" training for all public health workers who lack formal education and preparation for public health practice and (2) a more extensive training program that emphasizes cross-cutting public health skills for key categories of public health professionals.

- Our experience with developing and presenting a completely online introduction to public health course for graduate students at UIC-SPH since 1997 (8 offerings with more than 700 students to date) provides the foundation for the development of the Public Health 101 training program. We believe that Public Health 101 training can be packaged as one course with 4 parts (or as 4 courses) that addresses basic competencies related to (1) what public health is, (2) measuring health, (3) population-based prevention, and (4) governmental public health. This training can be widely deployed using a self-paced, instructor-led, completely online format that involves 32-40 hours of learning activities.

- Our experience in the establishment of a competency-based credentialing program for public health managers and administrators (Illinois Public Health Administrator Certification Board) and the development of an online training program linked to that certification provides the foundation for a more extensive training program for various categories of practicing public health professionals who require many similar skills and competencies. These groups include community health improvement specialists, environmental health practitioners, and nurses working in public health

settings. Administrators, health educators, environmental health practitioners and nurses constitute the bulk of public health professionals in practice. We envision a framework with 6 series of courses (see Table 1), 5 of which (Public Health Practice, Community Assessment, Policy Development, Program Development & Evaluation, and Preparedness & Response)would be common to each occupation/discipline. A sixth course series would be specific to each group (e.g., Public Health Administration for managers and administrators, Community Environmental Health Practice for environmental health practitioners, Health Education and Promotion for health educators, etc.) Together these 6 series of courses would constitute a training package roughly equivalent to one-third of the coursework expected for an MPH or similar degree. These same topics and similar courses are offered in most current public health educational programs; however, this training initiative would specifically tailor these courses to meet the needs of practitioners. Each series would be composed of 7-9 courses with each course involving 8-12 hours of learning activities.

Table 1
UIC-SPH/Illinois Public Health Preparedness Center
Competency Framework for Public Health Workforce Development,
Training, Continuing Education, and Credentialing

PH 410 Public Health Practice	PH 420 Community Health Assessment	PH 430 Advocacy and Policy Development	PH 440 Program Development and Evaluation	PH 450 Public Health Admin.	PH 460 Public Health Preparedness and Response	Community Env Health Practice (tentative)
411 What Public Health Is	421 What Public Health Assessment Is	431 What Public Health Advocacy & Policy Dev. Is	441 What Program Development & Evaluation Is	451 What Public Health Admin Is	461 What PH Preparedness and Response Is	471 What Community Env Health Practice Is
412 Measuring Health	422 Measuring Population Health	432 Context and Process	442 Health Program Planning	452 Public Health Orgs	462 Bioterrorism Preparedness	472 Recognizing & Characterizing Problems
413 Population Based Prevention	423 Assessing Communities	433 Agenda Setting	443 Health Program Development	453 Information Management	463 Disaster Management	473 Assessing Exposures
414 Governmental Public Health	424 Assessing Risk and Protective Factors	434 Legislative Process	444 Health Program Implementation	454 Community Applications	464 Disaster Planning	474 Assessing Risk
415 Core Functions and EPHS	425 Analyzing Causal Pathways	435 Regulatory Process	445 Outcome Evaluation	455 Personnel, Financial & Performance Management	465 Surveillance and Assessment	475 Regulatory Processes
416 Public Health Infrastructure	426 Designing Population Health Studies	436 Operational Policies	446 Outcome and Cost Evaluation	456 Communication and Marketing	466 Env. Social & Psychosocial Implications	476 Surveillance
417 Public Health Interventions	427 Community Engagement	437 Evaluating and Modifying Policy	447 Evidence Based Decisions	457 Leadership	467 Recovery and Evaluation	477 Prevention Strategies

Recent events have highlighted the need for basic and more advanced training of public health workers in Bioterrorism Preparedness (for front-line workers) and overall Public Health Emergency Preparedness and Response (for mid- and senior-level professionals). A 2-part (or course) Bioterrorism Preparedness training program (courses 461 and 462 above) and a more extensive 7-course Public Health Emergency Preparedness and Response series have been integrated into this framework in light of current needs.

The 5 common course series and the Public Health Administration course series have been developed to assure consistency with current formulations of core public health competencies being developed by the Council on Linkages between Academia and Practice and with proposed, revised core competencies being developed for the MPH degree programs in schools of public health.

It is important to emphasize that not all practitioners would need to complete all the courses in each of these 6 series of courses. Rather each series will be constructed of 7 or more competency-based courses, any of which can be taken on a stand-alone basis. Table 1 summarizes these focal competencies, as currently envisioned. This overall framework allows for practitioners to selectively pursue training (from the 42 courses involved in the overall 6-series framework) related to specific competencies as part of an individually tailored training program. The delivery of these courses through an innovative, self-paced, instructor-led, completely online format will be more completely described below.

The Council on Linkages between Academia and Public Health Practice identified a panel of 68 "core public health competencies" and linked these competencies to performance of the essential public health services framework. These core competencies were adopted by the Council in mid-2001 and endorsed by most national public health organizations as a starting point for public health workforce development efforts. Plans are to revise these competencies in 2004. Appendix 1 provides a summary linking these 68 competencies to the essential public health services. Each essential public health service is associated with a mean of 40 core competencies (range: 32-49). The 68 competencies fall into one of eight competency domains: analytical/assessment skills; basic public health science skills; cultural competency skills; communication skills; community dimensions of practice skills; financial planning and management skills; leadership and systems thinking skills; and policy development/program planning skills. The Council on Linkages has also identified a general performance expectation for each competency statement, with varying expectations for front line public health workers, senior professional staff, and supervisory and management personnel. Levels of competency are: aware, knowledgeable, and proficient. Although the distinction between lower level skills and higher level competencies is not completely clear in this framework, the 68-item panel provides a credible foundation for structuring public health training activities and appears to support performance of the essential public health services. An initial review suggests that virtually all 68 Council on Linkages core competencies are addressed in the 6 series and 42 courses being developed by IPHPC in its Workplan.

Public health practice competencies, as used in IPHPC training activities, are meant to reflect the ability to perform a complex task or function that is critical to carrying out public health's core functions and essential services. As such, they encompass a variety of lower-level attributes related to the acquisition of knowledge, skills, and attitudes relevant for that particular task or function. The function or task itself must be relevant to the organization or system in which the individual works. Such competencies represent what one can do, rather than what one knows, and are expressed in terms of behavioral outcomes that are

demonstrable and measurable in practice. In order to be measurable, competencies must clearly articulate expected level of performance.

IPHPC training activities are being organized around a battery of high-level, measurable, relevant, and performance-oriented, focal competencies. The approach is to develop a series of courses, with each course focusing on a major competency. Each focal competency has a specific competency expectation that is expressed both in general and specific terms. Competency expectations for each course series are linked with about 20 (range: 17-27) of the 68 core competencies in the Council on Linkages' formulation. Appendix 2 provides a summary of the links between the focal competencies for courses being developed by the Illinois Public Health Preparedness Center and the 68 core competencies identified by the Council on Linkages. Several sub-competencies are common to all courses; others relate to courses that use real or simulated group learning activities. Courses will be offered individually in an innovative, self-paced but instructor-led format and there will be assessments or tests of competency included in each course. Appendix 3 links another proposed panel of core competencies for MPH degree training programs to the IPHPC courses and courses. (ASPH expects to finalize this panel of competencies later in 2002 through a Delphi Process; this draft is presented here to provide a framework for completing a similar analysis when the competencies are finalized.)

The IPHPC proposed approach is designed to be flexible in order to serve the needs of both front line and more senior public health professionals. For example, the development of a basic training program for public health workers (the so-called "Public Health 101" course) consists of 4 courses (PH 411-414) all of which are part of the Public Health Practice series (PH 411-417). The PH 415-417 address more advanced public health practice competencies appropriate for senior professionals in practice settings. There is also a basic Bioterrorism Preparedness training course for front-line public health workers that includes two courses (PH 491 and 492) that are part of the Public Health Emergency Preparedness and Response series targeting more senior public health professionals (PH 491-497). A general description of the competencies for these course series and courses is provided below.

Public Health Practice Series
411. Describe public health as a system, including its unique and important features, to general audiences (also part of PH 101)
412. Apply measures of population health and illness, including risk factors, in community health improvement initiatives (also part of PH 101)
413. Identify and distinguish public health and prevention strategies from curative strategies for prevalent health problems (also part of PH 101)
414. Describe the role of law and government in promoting and protecting the health of the public and identify specific functions and roles of governmental public health agencies in assuring population health (also part of PH 101)
415. Identify and explain how various organizations, positions and roles contribute to carrying out public health's core functions and essential services
416. Identify, measure, and assess the components of the public health infrastructure, and
417. Apply principles derived from the basic public health sciences to planning, implementing, and evaluating public health interventions

Community Assessment Series
421. Describe assessment in public health, including its unique and important features, to general audiences

422. Obtain, apply, and interpret measures of population health status that are commonly used in community health improvement processes
423. Obtain, apply, and interpret measures of community capacity that are commonly used in community health improvement processes
424. Obtain, apply, and interpret measures of risk and protective factors for population health, including the use of health services, that are commonly used in community health improvement processes
425. Develop and apply a logic model demonstrating interrelationships among risk and protective factors for population health that are commonly used in community health improvement processes
426. Describe and apply research study designs commonly used in community health improvement processes
427. Identify and apply principles for community engagement and participation in community health improvement processes

Advocacy and Policy Development Series
431. Describe advocacy and policy development in public health, including its unique and important features, to general audiences
432. Identify and apply theories and approaches that drive public health policy-making for important public health issues
433. Apply advocacy and agenda setting principles to formulate public health policy
434. Apply legislative processes to formulate public health policy
435. Apply regulatory processes to implement public health policy
436. Apply operational processes to implement public health policy
437. Evaluate public health policy outcomes and processes

Program Development and Evaluation Series
441. Describe program development and evaluation in public health, including its unique and important features, to general audiences
442. Plan a public health program
443. Develop a public health program
444. Implement a public health program
445. Evaluate a public health program
446. Evaluate outcome and cost implications of public health programs
447. Evaluate the impact of public health programs on different populations and cultures and use data to make evidence based program decisions

Public Health Administration Series
451. Describe what public health administration is, including how public health responsibilities are assigned to and carried out by various public and private organizations, to general audiences
452. Analyze the fundamental structure and operation of public health organizations, including their workforce, by applying principles of public health law and ethics
453. Identify and address problems and challenges facing public health organizations by applying principles of public health information systems
454. Identify and address community health problems by applying principles of public health information systems
455. Identify and address problems and challenges facing public health organizations by applying principles of human resources, financial and performance management

456. Identify and address problems and challenges facing public health organizations by applying principles of effective communications and marketing
457. Create a shared vision within a public health organization and foster partnerships that maximize achievement of public health goals by applying principles of effective leadership

Public Health Preparedness and Response Series

461. Describe public health roles in emergency preparedness and response activities, including its unique and important features, to general audiences (also part of PH 111)
462. Participate in bioterrorism-related public health preparedness and response activities (also part of PH 111)
463. Emergency health management in disasters
464. Principles of disaster planning
465. Disaster surveillance and assessment
466. Environmental, social, and psychosocial impacts of disaster
467. Recovery, reconstruction and evaluation

Prior to participating in any of these courses, each learner enrolls into a central learning delivery system. Basic identifying information, as well as information related to educational attainment and previous and current public health work experience are captured. In addition, each registrant completes a baseline competency-based, training needs assessment identifying the extent to which the individual (1) believes they are confident of their competency and (2) identifies a need for additional training for each of the focal competencies of the IPHPC training program. An individual training needs assessment guides the development of an individualized training plan. Registrants are apprised of upcoming course offerings appropriate to their identified training needs. The Illinois Public Health Preparedness Center uses a software package (Louts LearningSpace) that databases registrant information and tracks individual progress, as well as manages the various components of the courses that will be offered.

The usefulness of this framework for credentialing initiatives will vary by professional category. For example, while public health managers and administrators currently have no widely recognized credential, public health nurses, health educators, and environmental health professionals do. This framework can be used to develop a credentialing program for public health managers, such as was done by the Illinois Public Health Administrator Certification. It can also be used to create a mid-level credential for health educators who do not have the academic qualifications to sit for the Certified Health Education Specialist (CHES) exam, thereby promoting increased competency in the overall workforce of health educators and community health improvement workers. Approaches for environmental health professionals and nurses working in public health settings might also focus on a mid-level credential or certificate that serves professionals who for whatever reasons cannot receive Community Public Health Nursing or Registered Sanitarian credentials. Considerable input from these professional organizations and professionals in practice will be needed, however, for any framework to be valued and widely used.

Appendix 4 provides details of this framework for the initial battery of courses being developed by the Illinois Public Health Preparedness Center. Course series syllabi, resource catalogs, and course documents (overview, exercises, self assessments, and additional resources) can be accessed through the following links:

- [Public Health 101 (PH 101) complete](#)

- [Bioterrorism Preparedness (PH 111) complete](#)
- [Public Health Practice Course Series (PH 410-417) complete](#)
- [Community Health Assessment Course Series (PH 420-427) under development](#)
- [Advocacy and Policy Development Course Series (PH 430-437) under development](#)
- [Program Development and Evaluation Course Series (PH 440-447) complete](#)
- [Public Health Administration Course Series (PH 450-457) under development](#)
- [Public Health Preparedness and Response Course Series (PH 460-467) under development](#)

Additional information for the Public Health Administration Certificate initiative is available at the following URLs: http://www.iphpcb.org (Illinois Public Health Administrator Certification Board) and http://www.uic.edu/sph/prepare/phacertificate/ (certificate program description and syllabus). The Illinois Public Health Preparedness Center web site http://www.uic.edu/sph/prepare/ facilitates registration into and provides extensive information on courses now being offered as well as those that will be rolled out in the near future.

Appendices (available by request)
Appendix 1 - Core Public Health Competency-EPHS Links (4 pages)
Appendix 2 – Core Public Health Competency-IPHPC Course Links (4 pages)
Appendix 3 – MPH Competency-IPHPC Course Links (2 pages)
Appendix 4 – IPHPC Competency Details (42 pages)