

# READY FOR PRIME TIME

RAMPING UP  
PUBLIC HEALTH  
EDUCATION

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**P**ublic health education is not just for graduate students anymore. The movement toward integrating public health into the education of undergraduates is rapidly evolving.

In 2003, The Institute of Medicine of the National Academies recommended that “all undergraduates should have access to education in public health.” By “all,” the Institute meant students in community colleges, as well as those enrolled in four-year institutions.

*The Chronicle of Higher Education* has identified public health as one of the five most rapidly growing college majors. By all admissions, most of the growth in undergraduate public health education so far has occurred in four-year institutions. But that may soon change. >>

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However, related coursework in environmental sciences, emergency preparedness, statistics/health information systems, and health promotion is more widely available and could serve as the basis for developing public health programs.

The development of associate degrees and certificate programs in public health must address the needs of the public health workforce. ASPH recently released a report that estimates that 250,000 new local, state, and federal governmental public health workers will be needed by 2020. ASPH says this number would replace retirements and return the public health worker population to levels not seen since 1980. Experts say community college graduates could fill many of these jobs and should be prepared to do so.

### Role of Community Colleges

Community colleges can play two key roles in public health education: They can provide general education core courses consistent with those offered at four-year institutions, thus easing the transfer of coursework to four-year institutions. They can also provide public health-related associate degrees and certificate programs to address public health workforce needs and prepare students for public health careers and career ladders.

Core public health courses offered at community colleges as part of general education should be interchangeable with those offered at four-year institutions. This is key to the ability to transfer courses to four-year institutions and to satisfy general education requirements. Core curriculum such as “public health 101,” “epidemiology 101,” and “global health 101” are increasingly

relevant to all college students as they read the newspaper, search the Web, and engage with the public health issues their generation faces, such as AIDS, the impact of aging, and health care costs. The Association of American Colleges and Universities and the Association for Prevention Teaching and Research have produced Recommendations for Undergraduate Public Health Education that outline learning outcomes and curricular frameworks for these three general education “101” courses.

Community colleges, however, can play an additional role in meeting the needs of the public health workforce. It is important to start by defining some principles upon which community colleges can structure and evaluate prototype programs intended to address the needs of the workforce and the needs of students. The following five principles are starting points:

- Community colleges should gear their curricula to areas of defined and long-term public health workforce needs;
- Career ladders must be integrated to connect two-year and four-year institutions and, as much as possible, graduate education;
- Certificate programs as well as associate degrees must be accessible to workers seeking new opportunities and a return to the classroom;
- Community colleges must apply to public health education their extensive experience preparing graduates for the clinical health professions; and
- Associate degree programs must be built upon the same core public health curriculum that has been recommended as part of general education.

Healthy People, a public-private consortium of more than 400 health-related organizations, which sets health goals for the coming decade, has proposed an objective for 2020 that could dramatically increase public health education at the nation’s community colleges. The Healthy People 2020 objective would aim to increase the number of two-year colleges that offer associate degrees or certificate programs in public health or related fields.

To establish this objective, the Centers for Disease Control and Prevention is funding the collection of baseline data to measure the proportion of community colleges that offer these types of programs. The American Association of Community Colleges (AACC) is working with the Association of Schools of Public Health (ASPH) to collect and disseminate this data.

Preliminary findings suggest that only a small percentage of community colleges currently offer such programs.

## Prototype Public Health Programs

The Healthy People 2020 two-year college objective implies a link to the public health workforce, but it does not spell out specific associate degree or certificate programs, or suggest particular structures. Four prototypes for potential degree programs include:

- Environmental health
- Public health preparedness
- Public health informatics
- Pre-health educator

Each proposed program is built upon the general education core “101” courses, provides a coordinated set of specialized courses, and includes an experiential component. The proposed programs assume semester hours but can be modified for institutions with quarter hours.

**Box 1** outlines environmental health associate degrees and certificate programs compatible with a career ladder, including four-year and graduate education, as well as existing environmental health certification processes. The environmental health program is designed for community colleges that seek to prepare students for the Environmental Health Technician Certification of the National Environmental Health Association. This sample curricular framework includes core public health courses and specialty courses that should also facilitate students’ transfer after graduation to four-year colleges. The coursework should fulfill requirements for general education courses and allow students to pursue a bachelor’s degree, such as environmental sciences, that fulfills the educational requirement to sit for the Environmental Health Specialist Certification.

**Box 2** outlines a public health preparedness program aimed at producing generalists who can fill a range of roles as part of the everyday work of public health. The program is designed to prepare graduates for careers in public health, enabling them to contribute to the all-hazards approach to public health preparedness. Graduates will acquire a range of skills necessary for prevention, detection, and response to outbreaks, emergencies, and disasters, as well as skills and knowledge enabling them to obtain entry-level positions as generalists in public health.

### Box 1 Environmental Health Degree/Certificate Program Sample Curricular Framework

#### Core Public Health courses—9 semester hours

- Public Health 101 (3 semester hours)
- Epidemiology 101 (3 semester hours)
- Global Health 101 (3 semester hours)

#### Specialized Environmental Health courses—18 semester hours

Designed to fulfill educational requirements for Environmental Health Technician Certification, providing experiential, career-oriented learning opportunities.

- Principles of Environmental and Occupational Health (3 semester hours)
- Courses cover the following content areas of the Environmental Health Technician Certification examination (15 semester hours):
  - Food
  - Vector and Pest Control
  - Occupational Health/Hazardous Exposure
  - Water
  - Housing/Shelter-Environment
  - Toxicology
  - Air Pollution
  - Solid Waste
  - Waste Water

#### Experiential Learning (3 semester hours)

Field and Community-Based Learning

### Box 2 Public Health Preparedness Degree/Certificate Sample Curricular Framework

#### Core Public Health courses—9 semester hours

- Public Health 101 (3 semester hours)
- Epidemiology 101 (3 semester hours)
- Global Health 101 (3 semester hours)

**Public Health Specialty courses**—18 semester hours designed to prepare students for an all-hazards approach to public health preparedness.

- Overview of Public Health Preparedness (3 semester hours)
- Implementing and Managing Public Health Preparedness (3 semester hours)
- Health Information Systems (3 semester hours)
- Health Communications (3 semester hours)
- Environmental Health (3 semester hours)
- Applied Epidemiology (3 semester hours)

#### Experiential Learning—3 semester hours

Community-based Public Health Preparedness Experience

**Box 3** outlines a public health informatics program as part of the rapidly growing health informatics movement. The public health informatics program is designed to prepare graduates to work as part of a team to collect and manage public health data, including surveillance activities and outbreak investigations. Graduates will acquire a range of skills necessary for developing and implementing research studies, obtaining and managing high-quality data, and participating in field investigations, including acute outbreaks. Graduates will be prepared to work in academic research settings, health departments, and other government and private data collection and data analysis settings.

**Box 4** outlines a pre-health educator concentration designed for transfer to bachelor's degree health education programs. The National Commission for Health Education Credentialing has established seven areas of responsibility and competency for health educators. These competencies serve as the basis for health education bachelor's degrees programs and for the certifying examination to become a Certified Health Education Specialist as defined by the National Association for Health Education Credentialing, Inc. Community college concentrations in health promotion or health education can prepare students to enter bachelor's degree programs and fulfill much of the general education and basic specialized coursework.

All of these prototypes are designed to ensure a career ladder—to encourage articulation of the curricula of two-year and four-year institutions and foster continuing career development at the graduate level. The current development of environmental health provides many of these elements. Graduates of two-year institutions are eligible to take the Environmental Health Technician certifying examination. More than 160 four-year institutions offer environmental sciences degrees and many of these offer curricula that allow bachelor's degree graduates to take the Environmental Health Specialist certifying examination in line with National Council for Science and the Environment guidance. Master's and doctoral degrees in environmental

### Box 3 Health Information Systems/Public Health Informatics Degree/Certificate

#### Sample Curricular Framework

##### Core Public Health courses—9 semester hours

- Public Health 101 (3 semester hours)
- Epidemiology 101 (3 semester hours)
- Global Health 101 (3 semester hours)

##### Public Health Specialty courses—18 semester hours designed to introduce students to a wide range of study design and implementation principles.

- Principles of Biostatistics (3 semester hours)
- Introduction to Computerized Data Systems (3 semester hours)
- Applications of Computerized Data Systems (3 semester hours)
- Introduction to Study Design (3 semester hours)
- Data Collection and Data Quality (3 semester hours)
- Surveillance and Public Health Data Systems (3 semester hours)

##### Experiential Learning—3 semester hours

Public Health Informatics Project

### Box 4 Pre-health Educator Concentration

#### Sample Curricular Framework

The following sample curricular framework is designed to prepare community college graduates to enter health education programs in bachelor's degree-granting institutions. This curricular framework is designed as an 18-hour concentration but may be included as part of an associate degree or certificate in community health or other related discipline.

##### Core Public Health courses—9 semester hours

- Public Health 101 (3 credits)
- Epidemiology 101 (3 credits)
- Global Health 101 (3 credits)

##### Health Education Foundation courses—6 semester hours of course work that covers fundamental principles and applications of health behavior and health communications

- Health behavior (3 credits)
- Health communications (3 credits)

##### Experiential Learning—3 semester hours

Community-based Experiential Learning

health, in theory, complement these degrees and provide the potential for a fully developed career ladder.

The AACC reports that community colleges serve a range of U.S. health workers, including nearly 60 percent of nurses. The time has come to use this experience to help fulfill the public health workforce needs for the coming decade and for many years to come. Public health education in community colleges is ready for prime time.

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