

# Community Colleges and Public Health Project Final Report\* November 5, 2014

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# Community Colleges and Public Health Project Final Report

## Background

The Community Colleges and Public Health (CC&PH) Project is a collaborative enterprise of the Framing the Future Task Force convened by the Association of Schools and Programs of Public Health (ASPPH) and the League for Innovation in the Community College (League). This joint effort is part of the Framing the Future Task Force's vision to rethink education in public health 100 years after the 1915 Welch Rose Report, which provided the initial rationale and blueprint for schools of public health in the United States.

For most of the first century of education for public health, the focus was on graduate students. In 2003 the Institute of Medicine recommended that "...all undergraduates have access to education in public health."<sup>1</sup> Over the subsequent decade there was an exponential increase in the number of four-year colleges offering education for public health, including both institutions with and without graduate education in public health. The CC&PH Project seeks to examine the roles that community colleges should play in the continuum of public health education.

The project included two phases, with Phase 1 consisting of the CC&PH Expert Panel development of a series of Foundation and Consensus Statements reflecting what public health and community colleges could do together. Phase 1, which was published in November 2013 as an Interim Report, has been incorporated into this report as Appendix A.

Phase 2, recommended by the CC&PH Expert Panel, consisted of its Leadership Group working with partners to develop "prototype curricular models" designed for associate degrees and academic certificate programs in community colleges. Two basic models, 1) Public Health: Generalist & Specializations, and 2) Health Navigator\*, were chosen after consultations with community colleges, CC&PH project and Framing the Future Task Force leadership, public health practice organizations, namely the Association of State and Territorial Health Officials (ASTHO) and National Association of County and City Health Officials (NACCHO), as well as three academic associations in disciplines offering related bachelor's degree programs: Society for Public Health Education (SOPHE), Association of University Programs in Health Administration (AUPHA), and Association of Environmental Health Academic Programs (AEHAP).

Public health associate degrees should be built on and reinforce fundamental skills, including writing, oral communications, and quantitative skills obtained through general education coursework consistent with the Association of American Colleges and Universities (AAC&U) LEAP initiative<sup>2</sup> and VALUE Rubrics.<sup>3</sup> Associate degrees and academic certificate programs are also encouraged to incorporate ASPPH Undergraduate Public Health Learning Outcomes.<sup>4</sup>

\*The term "Health Navigator" is intended as a generic term to describe the academic certificate or degree program. It is not designed as a job title nor intended to imply a connection with the Affordable Care Act.

The prototype curricular models presented here were designed to incorporate the Recommended Critical Component Elements of An Undergraduate Major in Public Health (CCEs).<sup>5</sup> The models were designed to encourage a continuum of education in public health, which has emerged as a central theme of the Framing the Future Task Force's recommendations for the second century of education in public health.

In addition to the development of initial recommendations for associate degrees and academic certificate programs, the CC&PH project examined the potential for community colleges to participate in the education of the broadly defined public health workforce with a special focus on entry-level employees in need of basic educational skills and an introduction to basic principles of public health. The report presents initial strategies for collaboration with health departments as well as other employers and community colleges.

## Prototype Curricular Models

The following curricular templates are designed to provide high-priority curricula leading to associate degrees. These should be viewed as first steps and the development of additional models is encouraged. They are designed to provide general frameworks which can be modified to accommodate institutional, educational system, and state certifying requirements for associate degrees, professional credentialing, and transfer to bachelor's degree programs.

The sample course content outlines in this report are designed for core and required courses. They encourage a consistent approach to the development of associate degrees without restricting community colleges in their approach to structuring degrees, developing courses, or evaluating outcomes. The course content outlines for health education, health administration, and environmental health were developed in collaboration with SOPHE, AUPHA, and AEHAP, respectively. A course content outline for an elective course in Public Health Preparedness was developed in collaboration with ASTHO and NACCHO.

The Public Health: Generalist & Specializations and Health Navigator prototype curricular models share a common set of recommended foundational and public health core coursework. Together these basic public health courses should provide an introduction to at least the following CCEs: Introduction to the biological and life sciences and the concepts of health and disease; Overview of public health; Identifying and addressing population health challenges; Determinants of health (including social determinants of health); Overview of the health system; and Health communication.

The prototype curricular models were designed together to allow students enrolled in community colleges with multiple public health-related programs to initially pursue foundational and public health core courses before selecting among available associate degree offerings.

These prototype curricular models are not intended or presented as complete associate degree programs. Each community college is encouraged to add additional requirements and/or electives to align the curriculum with its expectations for an associate degree or an academic certificate program. Some bachelor's degree programs in public health may encourage community college students to pursue general education coursework and take public health coursework after transfer to a bachelor's degree program.

Faculty teaching public health coursework need to have relevant education and practice experience. Associate degree programs should have at least one lead faculty member with formal public health education. Use of multidisciplinary teams and active participation educational methods such as case studies is encouraged.

It is also recommended that the curriculum include learning outcomes, competencies, or proficiencies for general education and specialized coursework. Courses should be taught as lower-division courses that meet baccalaureate degree expectations. For instance, science courses should include a laboratory component. Community colleges are encouraged to use the AAC&U LEAP Essential Learning Outcomes to guide this process.<sup>1</sup> It should be explained to associate degree students that eligibility for specialty certifications is not conferred with associate degrees, but requires further study and requirements commensurate with a baccalaureate degree.

The models presented in this report will require ongoing refinement and evaluation. Data from the workforce should be included in subsequent evaluation processes.

The following table describes the Public Health: Generalist & Specializations and the Health Navigator prototype curricular models by summarizing the two models side-by-side.

**Table 1: Recommended Prototype Curricular Models for Public Health Associate Degree Programs**

<b>Courses</b>	<b>Public Health: Generalist &amp; Specializations</b>	<b>Health Navigator</b>
<i>Foundational</i> 3 semester credit hours	Human Health/Personal Health and Wellness including a population health and determinants of health focus	Human Health/Personal Health and Wellness including a population health and determinants of health focus
<i>Public Health Core</i> 6 semester credit hours	Overview of Public Health, Health Communications	Overview of Public Health, Health Communications
<i>Required Public Health</i> 9-12 semester credit hours	Health Education, Health Administration, Environmental Health  Alternatively, 9 semester credit hours in one of these three disciplines may be substituted as a specialization	Accessing and Analyzing Health Information, Prevention and Community Health, Health Care Delivery, Health Insurance
<i>Experiential Learning</i> 3 semester credit hours	Community-based experience relevant to generalist or specialization. Supervised curriculum with learning outcomes and opportunities for reflection.	Experiential learning focused on community health, health care delivery, and/or health insurance. Supervised curriculum with learning outcomes and opportunities for reflection.
<i>Electives</i> 6-9 semester credit hours	Wide range of potential electives with emphasis on broad population issues such as health and diversity and global health. A public health preparedness course should also be offered.	Electives may include specific diseases such as diabetes, cancer, cardiovascular disease, HIV; defined populations such as the elderly, maternal and child; and/or population issues such as health and diversity as well, as global health. A public health preparedness course should also be offered.  The Introduction to Health Education and Public Health Advocacy and Leadership in Action courses should be taken by students who intend to transfer to a Health Education bachelor's degree program.

## **Public Health: Generalist & Specializations - Prototype Curricular Framework**

The following Public Health: Generalist & Specializations associate degree curricula are designed to prepare graduates for public health and related programs at the bachelor's degree level. The intent is to encourage students to transfer to bachelor's degree programs in the health field, including public health generalist, health education, health administration, or environmental health programs. Associate degree graduates need basic skills and knowledge consistent with the Recommended Critical Component Elements of an Undergraduate Major in Public Health. Basic written and oral communication skills as well as basic quantitative skills are essential for success and should be integrated throughout the associate degree program.

The following Generalist & Specializations are designed as an associate degree for transfer. It is recommended that course work be taught as lower division courses that meet baccalaureate degree expectations.

**Associate Degree Generalist and Specializations—a 60 semester credit hour Public Health: Generalist & Specializations Associate degree program, including general education courses with 30 semester credit hours of public health subject area content as follows:**

**Foundational**

Human Health/Personal Health and Wellness – 3 semester credit hours

**Public Health Core**

Overview of Public Health – 3 semester credit hours

Health Communications – 3 semester credit hours

**Required Public Health Courses**

Health Education – 3 semester credit hours

Health Administration – 3 semester credit hours

Environmental Health – 3 semester credit hours

Alternatively, 9 semester credit hours in one of these three disciplines may be substituted, utilizing content outlines for three coordinated courses developed in collaboration with the corresponding academic association and designed for transfer to a bachelor's degree.

**Experiential Learning**

Experiential practice-based learning – 3 semester credit hours community-based experience relevant to generalist or specialization and inclusive of a supervised curriculum with learning outcomes and opportunities for reflection.

**Electives**

Nine credit hours including offering a course in Public Health Preparedness as well as such courses as Prevention and Community Health; Health & Diversity; Global Health; etc.

Specific bachelor's degree programs may require additional coursework. Students are advised to consult the specific requirements of the bachelor's degree program to which they wish to transfer. Community colleges may wish to provide credit for previous relevant coursework and/or relevant experience.

For students intending to transfer environmental health coursework taken at the community college level to a bachelor's degree program in environmental health, the following courses are recommended: General Chemistry I and II with laboratory; General Biology I with laboratory; and algebra at the college level.



## **Specializations**

The CC&PH project worked closely with SOPHE, AUPHA, and AEHAP to develop coordinated specialty curricula designed for transfer to bachelor's degree programs in School/Community Health Education, Health Administration, or Environmental Health, respectively. These disciplines were chosen because of the existence of well-established bachelor's degree programs represented by national academic associations and a national accreditation or certification process. In addition, health education and environmental health offer a certifying examination at the completion of the bachelor's degree.

Each of the specialized curricula includes 9 semester credit hours of coursework designed for transfer to bachelor's degree programs. The first course in each curriculum is an introductory/overview course that could be taught as part of the generalist program and which alternatively serves as a prerequisite course for the other two courses in the 9 semester credit hour community college specialization curriculum. These specializations may also be offered as part of academic certificate programs.

Each of the public health core and specialization courses includes a content outline. Content outlines for each of the following 3-semester credit hour courses, developed in collaboration with the three academic associations, are provided in Appendix B.

### **Health Education**

1. Introduction to Health Education
2. Accessing and Analyzing Health Information
3. Public Health Advocacy and Leadership in Action

### **Health Administration**

1. Introduction to Health Administration and the U.S. Health System
2. Management of Health Organizations
3. Health Information Systems

### **Environmental Health** (the first course and any 2 of the last 3 are recommended)

1. Principles of Environmental Health
2. Disease Vectors and Control
3. Solid and Hazardous Waste Management
4. Food Safety and Sanitation

Thus, four options are recommended as part of the Public Health: Generalist & Specializations prototype curricular model: 1) Public Health Generalist; 2) Health Education Specialization; 3) Health Administration Specialization; and 4) Environmental Health Specialization. Community colleges whose mission includes providing education for health professionals are encouraged to offer one or more of these options.

## Health Navigator-Prototype Curricular Framework

The Health Navigator program curriculum is designed to prepare graduates for employment as community health workers, patient navigators, and health insurance navigators, etc. Health Navigator is the suggested academic designation and is intended as a generic description of the academic degree program. This term is not intended to define or limit the job titles for which graduates may qualify. The aim is to educate front-line health workers with expertise and experience in assisting individuals and communities to navigate the U.S. community health, health care, and health insurance systems; improve the quality and cultural competence of service delivery; and accomplish personal prevention and health care goals. Graduates should have coursework in prevention and community health, health care, health insurance/health care financing, and accessing and analyzing health information, plus experiential, practice-based education built upon their coursework. Basic written and oral communication skills as well as fundamental quantitative skills are essential for success and should be integrated throughout the curriculum.

Concepts of determinants of health should be integrated throughout the curriculum as should several core competencies that lay outside traditional public health training. These concepts include client-centered care and decision making, accessing resources for diverse families, cultural competence, and disease self-management.

The following program is designed as an applied associate degree or an associate degree for transfer. It is recommended that core public health coursework be taught as lower division courses that meet baccalaureate degree expectations in order to benefit students who decide to pursue a baccalaureate degree in a health field in the future.

The Health Navigator program competencies most closely align with the Health Education profession. Health Education specialists and those with a Health Navigator degree have complementary roles in strengthening individual and community capacity through patient and community education, patient navigation, referrals, social support, advocacy, and other activities. Health Educators will often supervise the development and delivery of programs and services provided by those with a Health Navigator degree. Therefore, it is recommended that community colleges offering Health Navigator associate degrees designed for transfer require students to take the recommended health education courses before transferring to the baccalaureate health education program.

Health Navigator academic certificate programs may be offered which provide credit for previous relevant coursework and/or relevant experience. Community colleges may wish to offer one or more of the following options: academic certificate programs, applied associate degrees, and/or associate degrees designed for transfer. All of these should include the four required Health Navigator courses discussed below.

Experiential practice-based learning should also be included for those without extensive relevant practice experience. Academic certificate programs may enroll individuals pursuing health professions degrees, social service degrees, and those with previous bachelors or graduate degrees. The curriculum is designed to be flexible enough to accommodate differing state regulations and differing local job markets.

**Associate Degree Program—a 60 semester credit hour Health Navigator associate degree program with 30 semester credit hours of subject area content including general education courses as follows:**

**Foundational**

Human Health/Personal Health and Wellness – 3 semester credit hours, with a population health and determinants of health focus.

**Public Health Core**

Overview of Public Health – 3 semester credit hours

Health Communications – 3 semester credit hours

**Required Public Health Courses**

Accessing and Analyzing Health Information – 3 semester credit hours

Prevention and Community Health – 3 semester credit hours

Health Care Delivery – 3 semester credit hours

Health Insurance – 3 semester credit hours

**Experiential Learning**

Experiential practice-based learning in community health, health care delivery, and/or health insurance – 3 semester credit hours that address outreach methods and strategies; client and community assessment; support, advocacy and coordination of care for clients; and community capacity building with supervised curriculum including learning outcomes and opportunities for reflection.

**Electives**

Six semester credit hours addressing state and local regulations and job markets, which may include specific diseases such as diabetes, cancer, cardiovascular disease, HIV; defined populations such as the elderly, maternal and child; and/or population issues such as health and diversity, as well as global health. A public health preparedness course should also be offered.

The Introduction to Health Education and the Public Health Advocacy and Leadership in Action courses should be taken by students who intend to transfer to a Health Education bachelor's degree program.

## Course Content Outlines

Course content outlines, provided in Appendix B, have been developed for the following three semester credit hour courses.

### Public Health Core

1. Overview of Public Health
2. Health Communications

### Health Navigator

1. Accessing and Analyzing Health Information
2. Prevention and Community Health
3. Health Care Delivery
4. Health Insurance

### Health Education

1. Introduction to Health Education
2. Accessing and Analyzing Health Information
3. Public Health Advocacy and Leadership in Action

### Health Administration

1. Introduction to Health Administration and the U.S. Health System
2. Management of Health Organizations
3. Health Information Systems

### Environmental Health

1. Principles of Environmental Health
2. Disease Vectors and Control
3. Solid and Hazardous Waste Management
4. Food Safety and Sanitation

### Preparedness

1. Public Health Preparedness

In addition, specific recommendations to assist community colleges in gaining approval and implementing the Public Health: Generalist & Specializations as well as the Health Navigator prototypes in community colleges are under development and will be available on the League's website at <http://www.league.org/ccph/> in the fall of 2014.

## Next Steps

The commitment of the education and practice organizations collaborating in the CC&PH Project provides opportunities to fully develop the continuum of education in public health from community colleges through graduate education. Based on the extraordinarily diverse student body represented in many community colleges, this collaboration also provides unique opportunities to develop a diverse public health workforce which reflects the current and future populations of the United States.

The principles outlined in this report are aimed at assisting local and state health departments and other employers in addressing the educational needs and aspirations of the public health workforce of the future. It is recommended that community colleges place a high priority on engaging potential employers in developing and implementing academic certificate and associate degree programs that are consistent with the prototype curricular models outlined in this report as well as developing new models. These programs should be accessible to entry-level employees.

The curricular models outlined in this report should be regarded as first steps. The CC&PH Leadership Group recommends the following next steps, dependent on the availability of resources:

- Local and state health departments, as well as national academic organizations and local community/health care organizations, are encouraged to actively work with local community colleges to assist in the design and development of academic certificate programs and associate degree programs, to ensure that the community college curriculum meets the needs of the public health workforce, broadly defined.
- Community colleges are strongly encouraged to require that these courses be taught by professionals with public health expertise. Senior public health employees, including those with an MPH degree and professionals with public health specialty certifications, should be sought by community college(s) within their jurisdiction to serve as faculty for experiential as well as classroom education. To the extent they agree to serve as course directors, they should be compensated.
- Schools and programs of public health offering undergraduate public health degrees should be encouraged to develop articulation agreements with community colleges offering associate degree public health programs.
- Local and state health departments and other employers should work with community colleges in periodically studying the competencies needed by associate degree public health employees so that the associate degree curricula best meets the contemporary workforce demands.
- Academic and practice groups should collaborate with the U.S. Department of Labor to develop descriptions of the occupations in which associate degrees in public health are expected for inclusion in the Department of Labor's annual Occupational Handbook.

The recommended prototype curricular models are not intended as the exclusive public health programs offered by community colleges as part of the continuum of education in public health, as there are many other topic areas and potential learning tracks. For instance, there is considerable interest in the development of health information management programs with a public health focus designed as applied associate degrees, as well as transfer degrees designed for articulation with health information management bachelor's degree programs.

The development of a consistent approach to learning outcomes, proficiencies, or competencies is an important part of the implementation of these prototype curricular models. The models presented in this report, therefore, should be seen as first steps that require ongoing refinement and evaluation.

As a key component of the next steps, the League for Innovation in the Community College seeks to work closely with the national practice and academic organizations collaborating in this report to identify funding to support demonstration projects and provide an administrative home for the demonstration program. These demonstration projects should provide opportunities for community colleges to fully develop curricula complete with learning outcomes, proficiencies, or competencies as well as assessment tools, etc.

The League for Innovation in the Community College took a lead role in developing and administering the Community Colleges and Public Health Project. The League intends to continue its involvement, including implementing a dissemination process designed to bring the recommendations in this report to the attention of all community colleges. In addition, the League will make available to community colleges recommendations for gaining approval and implementing the prototype curricular models. The League also intends to develop community college recognition awards for excellence in education in public health.

## References

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Association of Environmental Health Academic Programs  
Association of State and Territorial Health Officials  
Association of University Programs in Health Administration  
National Association of County and City Health Officials  
Society for Public Health Education

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## Appendix A

### Foundational and Consensus Statements from Interim Report - November 2013

The Foundational Statements are designed to express what the Expert Panel collectively believes community colleges are currently accomplishing or are well-positioned to accomplish. The Consensus Statements reflect what the Expert Panel believes community colleges are capable of contributing as part of the continuum of public health education. The term “should” is reserved for those efforts that the Expert Panel believes are important next steps to be conducted jointly by community colleges, four-year colleges, and the public health community.

#### Foundational Statements

1. Community colleges and public health share a mission to serve communities.
2. Community colleges currently educate nearly half of all undergraduate students, including a substantial proportion of future health professionals.\*
3. The composition of the student body of many community colleges provides an opportunity to deliver public health education to a large and growing number of students from underserved communities.
4. Community colleges are well-positioned, through strong connections to the communities they serve and through a long tradition of programs in nursing, allied health, and first-responder training, to provide a population health perspective, inside and outside the classroom, for the large and growing number of undergraduates whom they educate.
5. Community colleges often have well-developed education programs and an infrastructure for the education of health professionals, including nurses and allied health professionals, that can be used as building blocks for education in public health. In addition, public health curricula can enhance the education of these health professions students.
6. Community colleges often seek to prepare students to fulfill workforce needs, provide an academic gateway to bachelor’s degrees and beyond, and address continuing education needed for workplace advancement.
7. Community colleges seek to work with bachelor’s degree institutions to provide articulated coursework and degree programs.
8. In coming years there will be a need to replace a substantial number of retiring public health workers. Community colleges are well-positioned to prepare workers for many of these positions.
9. In coming years there will be opportunities for and the need to connect public health education with other health professions education. Community colleges are well-positioned to accomplish this in partnership with other institutions of higher education.

\* American Association of Community Colleges, Community college trends and statistics. Retrieved from <http://www.aacc.nche.edu/AboutCC/Trends/Pages/default.aspx>



## Consensus Statements

1. Community colleges and four-year colleges in collaboration with the broad public health practice community should conduct a nationally oriented evidence-based review of the compatibility of associate degrees and certificate programs with public health workforce needs.
2. Community colleges could become a full component of the continuum of education for public health. Community colleges could provide opportunities to introduce students to the ASPPH Undergraduate Public Health Learning Outcomes that encourage a population health perspective as part of coursework and/or extracurricular activities.
3. Community colleges could incorporate overview coursework in public health as an option within the general education component of their degrees and as an option or requirement for health professions degrees.
4. Community colleges with the interest and resources could provide opportunities for students to take coursework compatible with the Recommended Critical Component Elements of an Undergraduate Major in Public Health. This coursework could also be available to a wide range of students including those pursuing degrees in the clinical health professions.
5. Demonstration programs providing useful models for adoption by other institutions should be encouraged for associate degree programs and certificate programs recommended by the evidence-based review. Objective reviews will be needed to evaluate the quality of these programs. National visibility should be provided for successful programs.

## Appendix B

### Course Content Outlines

This appendix includes 16 course content outlines prepared to assist community colleges in designing courses as part of the Health Navigator and Public Health: Generalist & Specializations prototype curricular models. For specialization courses designed for transfer to programs in Health Education, Health Administration, and Environmental Health, the course content outlines have been developed in collaboration with the national academic associations, SOPHE, AUPHA, and AEHAP, respectively. The Public Health Preparedness content outline was developed in collaboration with two national public health practice organizations, ASTHO and NACCHO. These content outlines reflect the differing approach of each organization and, as such, are presented in unique formats. The outlines that present content without specification of learning outcomes, proficiencies, or competencies would profit from identification of the desired abilities and behaviors that successful learners would demonstrate upon completing the course or program.

The first two content outlines are designed as core public health curricula for both prototype curricular frameworks. These courses are **Overview of Public Health** and **Health Communications**.

The next three content outlines are designed as required courses for the Health Navigator prototype curricular framework. These three courses are **Prevention and Community Health; Health Care Delivery;** and **Health Insurance**.

The next three content outlines are designed for a specialization in Health Education. The first course may alternatively be used as part of a public health generalist curriculum. The first course is designed as a prerequisite for the other two courses. These three courses are **Introduction to Health Education; Accessing and Analyzing Health Information;** and **Public Health Advocacy and Leadership in Action**. Accessing and Analyzing Health Information is also recommended as a required course for the Health Navigator associate degree program.

The next three content outlines are designed for a specialization in Health Administration. The first course alternatively may be used as part of a public health generalist curriculum. The first course is designed as a prerequisite for the other two courses. These three courses are **Introduction to Health Administration and the U.S. Health System; Management of Health Organizations;** and **Health Information Systems**.

The next four content outlines are designed for a specialization in Environmental Health. The first course may alternatively be used as part of a public health generalist curriculum. The first course is also designed as a prerequisite for the other courses. Two of the last three courses may be offered by community colleges as part of an environmental health specialization designed for transfer to a bachelor's degree program. These four courses are **Principles of Environmental Health; Solid and Hazardous Waste Management; Disease Vectors and Control;** and **Food Safety and Sanitation**.

The final content outline is recommended for inclusion in both the Health Navigator and the Public Health: Generalist & Specializations prototype curricular frameworks as an elective. This course is **Public Health Preparedness**.

## Public Health Core - Overview of Public Health\*

### Overview and Basic Principles

1. Context and scope of public health, including history, philosophy, literature, essential services, ethics, and applications to current events—public health placed in historical and modern perspectives.
2. Public health as cross-cutting and systematic—interdisciplinary concepts introduced early and integrated throughout the course (e.g., examining the options for interventions to address public health concerns).
3. Epidemiologic principles and population perspective—rates, risk factors, and health status indicators of morbidity and mortality; disease determinants, causation, and types of epidemiologic research; plus public health surveillance and vital statistics.

### Population Health Tools

4. Health communication and informatics—accessing and evaluating the quality and impact of health information and data in the mass media, including the Internet.
5. Health and social and behavioral sciences—social determinants of health and methods for altering behaviors at the individual and population levels.
6. Health policy, law, and ethics—tools for implementing health decisions including potential tensions between individual rights and social responsibilities.

### Morbidity and Mortality: Determinants, Burdens, and Interventions

7. Non-communicable diseases—effects on longevity and quality of life plus methods to prevent, detect, cure, and minimize impact. Concepts of society's epidemiological and demographic transitions.
8. Communicable diseases—prevention, detection, and control from a population perspective.
9. Environmental health and injury—current and potential impacts on health status and strategies for control.

### Health Care and Public Health Systems

10. Health workforce—professional roles and career options within the health care and public health workforce.
11. Organization and design of health care and public health systems—institutions and structures of health care and public health systems, both national and international; the distinct roles and complementary responsibilities of health care and public health systems.
12. Costs, quality, and access to health-care and public health services—financing of health care and public health services and efforts to control costs; meanings and measurement of quality; and impacts of inadequate access.

### Special Public Health Education Focus Areas

13. Health disparities and vulnerable populations—overview of public health's commitment to vulnerable populations, including maternal and child health, aging, persons with disabilities, and socioeconomically disadvantaged populations.
14. Public health preparedness and disaster management—essential roles of public health in preparedness for and response to disasters and to political and civil upheaval.

\*[http://www.aacu.org/public\\_health/documents/Recommendations\\_for\\_Undergraduate\\_Public\\_Health\\_Education.pdf](http://www.aacu.org/public_health/documents/Recommendations_for_Undergraduate_Public_Health_Education.pdf)

## **Public Health Core - Health Communications**

### **Use of Health Communications**

1. Overview of health communication—how it is used at the individual, group, and community levels to promote consumption of goods and products and its impact on health outcomes.

### **Principles of Health Communications**

2. Health literacy—key concepts and skills to identify individuals with reduced health literacy and to assist them in their utilization of the health care and public health systems to enhance access and understanding; viewing literacy and health literacy as a determinant of health.
3. Culturally-appropriate communication and care—providing culturally competent care and services starting with an awareness of one’s own culture and the skills needed to provide sensitive and meaningful care and services to others; theories, approaches, and skills related to communicating about health more effectively with people of diverse backgrounds.
4. Risk perception and risk communications—understanding how risk is perceived and conveying the objective measures of the magnitude of the risk as well as the impact of interventions to reduce the risk.
5. Theories of behavior change and persuasion—introduction to theories that are most usefully applied in health communication, with examples.

### **Applications of Health Communications**

6. Group and social behavioral change—use of social marketing, social media, and other methods for understanding group and social behavior; creating messages based on group characteristics.
7. Health education for behavioral change—introduction to assisting individuals, families, and community members in making desired behavioral changes.
8. Transforming messages into media vehicles—overview of media channels and their relative utility to inform, interact with, or persuade specific individuals or groups.
9. Interactive health communication: Digital media—developing a coherent and justifiable digital strategy for interactive health communication.
10. Managing and evaluating a communication program—tools and processes to manage a program including needs assessment and evaluation of results.

### **Special Settings and Populations**

11. Communication in specific settings: Health care—patient-provider communications and the impact of socioeconomic and cultural factors.
12. Communications in specific settings: Schools—health communications as a basis for developing and changing behaviors.
13. Communications in specific settings: Workplace—creating a culture of health which supports wellness programs and policies.
14. Communications with special populations: Children, individuals with dementia, the vision or hearing impaired, etc.

## Health Navigator–Prevention and Community Health

1. Primary, secondary, and tertiary prevention.
2. Methods of implementation–education, motivation/incentives, obligation.
3. Social-economic, cultural, and religious impacts on prevention and treatment of disease.
4. Risk assessment–meaning of measures of the magnitude of the risk, impact of multiple risk factor intervention.
5. Prevention through the life-cycle–Infants, children, adolescents, adults, older adults, elderly.
6. Evidence-based recommendations–meaning of evidence-based recommendations, e.g. United States Preventive Services Task Force, The Community Guide, etc.
7. Primary prevention I–vaccinations, exercise, nutrition, and prevention of foodborne illness.
8. Primary prevention II–birth control, prevention of sexually transmitted disease, prenatal care, and well-child care, etc. Environmental and safety- e.g. lead, radon, pesticides, sun exposure, motor vehicles, fall and fire prevention, sports injuries, prevention of insect/vector borne diseases.
9. Secondary prevention I–principles and application of screening for risk factors such as vascular disease and osteoporosis. Principles and applications of screening for early disease such as cancer, congenital and genetic diseases, and childhood screening including hearing, vision, and dental health.
10. Secondary prevention II–case finding and epidemiological treatment for exposures (e.g. rabies, TB, sexually transmitted disease), prescription and non-prescription drugs (e.g. alcohol, heroin, cocaine), early intervention in disease and injury prevention (e.g. depression, alcohol, tobacco use, child abuse, domestic violence).
11. Tertiary prevention I–treatment to control symptoms and prevent complications, e.g. asthma, allergies; use, side effects, and abuse of medications; adherence to treatment.
12. Tertiary prevention II–emergency responders and emergency responses; disaster preparedness and response.
13. Assessing individual and community needs–engaging individuals and/or their families in on-going health assessment efforts; engaging communities in assessing community-wide needs.
14. Connecting individuals and communities with available resources–connecting individuals with self-care and health care resources; connecting communities with local, state and national resources.

## Health Navigator—Health Care Delivery

1. Types of health care institutions, hospitals, e.g., different types, skilled nursing and rehabilitation, custodial nursing, hospice, community health centers, mobile units, treatment centers.
2. Types and roles of health care providers, e.g., physicians, including hospitalists, nurses, doctors of nursing practice, social workers, therapists, health education specialists, and other health professionals, as well as the relationships among them.
3. Health care, community health systems, and continuity of care, e.g., confidentiality, referral, institutional transfers, community-based resources.
4. Accessing medical care, e.g., first contact care and specialty care, in-patient and outpatient, emergency care, community-based services, palliative care.
5. Accessing long-term care and other outpatient/community resources, e.g., custodial nursing homes, home health services, community-based services.
6. Role of public health agencies in health care delivery—licensure, regulation, communicable disease control, disaster planning, environmental protection, safety net roles, etc.
7. Diagnostic process—medical history taking and testing, e.g., family history, description of symptoms, past treatments, review of systems, allergies, types of testing.
8. Types of diseases, e.g., cancers, diabetes, heart disease, strokes, infections, mental illness and diseases altering mental functioning, communicable diseases.
9. Types of treatments including the process, goals, and general types of side effects, e.g., surgery, medicines, radiation and chemotherapy, physical therapy, alternative approaches.
10. Structure and functions of medical records, including the use of electronic health records.
11. Principles for communicating with clinicians and other health professionals verbally and in writing.
12. Continuity and coordination of care—the importance of clinical and administrative continuity, and the consequences of lack of coordination including implications and prevention of hospital readmission.
13. End of life care and decision making—medical power of attorney, living wills, bioethics review boards.
14. Quality and safety of health care, e.g., accreditation, certification, licensure, quality assurance and safety, and legal issues, e.g., privacy and confidentiality, second opinions, and malpractice.

## Health Navigator—Health Insurance

1. Basic health insurance/health care financing principles and terminology, e.g., premium, deductible, co-payment, in network, out-of-network, covered service, preferred provider organization, point of service, Accountable Care Organization, community rated vs. experience rated, cost sharing, medical-loss ratio, portability, tax implications.
2. Types of health insurance, e.g., Medicaid, Medicare and Medigap, exchanges, employment-based as well as uninsured and its implications; brief history of the development of the U.S. system.
3. Uninsured and underinsured—impacts on access and quality of health care.
4. Impacts of the Affordable Care Act on health insurance—eligibility for exchanges, subsidies, options for policies, individual mandate, impacts on Medicaid, changes in Medicare, laws/regulations specific to state.
5. Essential services and coverage decisions—ambulatory patient services, emergency services, hospitalization, maternity and newborn care, mental health and substance use services including behavioral health treatment, prescription drugs, rehabilitative and habilitative services and devices, laboratory services, preventive and wellness services and chronic disease management, and pediatric services including oral and vision care.
6. Long term care—activities of daily living, Medicaid payment rules, coverage for home health care and community based care, severely disabled children.
7. Worker's Compensation—goals and limitations of the program and basic rules for eligibility.
8. Medicare disability—goals and limitations of the program and basic rules of eligibility.
9. Types and levels of provider payments and implications for health care—fee for service, capitation, salary, quality incentives, patient choice of provider, provider choices to accept or not accept insurance and option to bill above insurance.
10. Using health insurance, e.g., preventive services, emergency care, choice of providers, institutional options, prescription drug coverage, options not requiring insurance including VA, Community Health Centers, free clinics.
11. Insurance administration—paperwork/computer application, filing claims, and handling disputes.
12. Insurance and financial regulations—patient rights and responsibilities under health insurance, options for payment and non-payment, and where to go for help.
13. Access to care in the absence of health insurance—limited legal rights to health care, other sources of payment for health services, consequences of decision not to obtain health insurance.
14. Market and social justice philosophies—impact on health insurance and access to health care services, international comparisons and advantages and disadvantages of the U.S. system.

**Health Information**

1. Describe the importance of health at the individual, group, and community levels, including examples.

**Health Education, Health Promotion, and Health Promotion Programs**

2. Define health education, health promotion, and health promotion programs—relate these concepts to each other and how they have evolved.
3. History of health education, health promotion, and health promotion programs—identify key historical advances, people, and events that have impacted health theory and practice (i.e. Healthy People Objectives).
4. Health organizations and their impact—identify organizations in community and public health, including governmental, quasi-governmental, and nongovernmental.
5. Health promotion program logistics—identify common settings and stakeholders in health promotion programs.
6. Disparities in health status, diversity in populations, and health promotion programs—identify population groups and health disparities.
7. Health education and health promotion methods—identify common instructional methodologies and techniques.

**Foundational Principles of Health**

8. Health and wellness—review the dimensions of health and the major factors that influence health at the individual and community levels.
9. Disease prevention and related health promotion overview—define determinants, risk factors, use of the scientific method in health, and traditional and nontraditional medicine.
10. Disease process and health behavior—define the basics of disease processes and behavioral risk factors.

**What is a Health Educator?**

11. Roles and functions of a health educator—explain common roles and settings in which health educators practice.
12. Health education ethics—review individual and professional ethics.
13. Professional certification and licensure—discuss certifications available in health education and related fields.

**Theory in Health Promotion Programs**

14. Introduction to intrapersonal health theories—identify the commonly used intrapersonal level health theories.
15. Introduction to interpersonal health theories—Identify the commonly used interpersonal level health theories.
16. Introduction to population-level theories—identify the commonly used population level theories.
17. Introduction of the logic model—identify components of and rationale of a logic model and its value in program planning.

**Health Education Literature**

18. Health education sources—identify how to find valid and reliable health information in literature and on the web, including sources and sites.

**The Future of Health Education, Health Promotion, and Health Promotion Programs**

19. Innovative and future health education issues—explore emerging health education, health promotion, and health promotion practice (i.e. innovative programs, trends in disease that are of concern, etc.)

\* Developed by the Society for Public Health Education (SOPHE), March 2014

† SOPHE recommends that the instructor of this course should have a minimum of a MPH, Master's in Health Education, and/or be certified as an entry-level or advanced-level health education specialist (i.e. CHES or MCHES).



## Health Education—Accessing and Analyzing Health Information<sup>\*,†</sup>

### Introduction to Evidence-based Thinking in Health

1. Evidence-based recommendations-use evidence to draw conclusions about etiology, benefits and harms as the basis for evidence-based recommendations.
2. Evidence-based problem solving-use evidence to systematically describe and address health problems.
3. Evidence-based decision making-use evidence as the basis for evidence-based decision making.

### Health Information Concepts

4. Health information concepts—discuss economic, legal, and social issues about health information.
5. Health information sources—identify sources of health information (e.g., mass media, health care organizations, health professionals, social circles, and research).
6. Health information types—identify types of health information (e.g., individuals, groups, and community).
7. Health literacy—identify national standards, objectives, and assessment tools to improve health literacy; define barriers and attributes that facilitate health communication at the patient level.
8. Digital citizenship—describe human, cultural, and societal issues related to health information technology; identify and analyze relationship between digital citizenship and health literacy.

### Information Skill Development

9. Investigate a problem—apply evidence-based thinking skills to identify and define health problems in order to determine the nature and extent of information needed.
10. Locate information—demonstrate the ability to access information effectively and efficiently using library resources in order to investigate a problem.
11. Evaluate information—demonstrate the ability to critically evaluate information and incorporate it into one's knowledge base or value system.
12. Ethically use information—describe economic, ethical, legal, and social issues regarding the use of information, comparing sections 504 and 508 of the Americans with Disabilities Act, and demonstrating skill in acknowledging use of information sources.

### Evaluation of Online Health Information

13. Evaluate online health information—identify website sponsorship, financial stakeholders, and state source type (.com, .gov, .edu), assess website currency, determine credentials of information sources and authors, identify the target audience, and determine if the message is appropriate for the type of audience (consumers vs. clinicians).

### Access to Data in Health Information Systems

14. Demographic measurements—describe functions, locate, and demonstrate use of major national and global vital statistics, and systems which are used to determine health status and classify disease.
15. Data collection methods—describe the functions, locate and demonstrate use of major domestic health, health care, and nutrition surveys, and population surveillance systems.
16. Informatics—describe the functions, locate, and demonstrate use of both public health and population informatics and state their similarities and differences, tools, and applications.

\* Developed by the Society for Public Health Education (SOPHE), March, 2014, revised July 2014 to include evidence-based thinking from the AAC&U STIRS project available at <http://www.aacu.org/stirs/index.cfm>

† SOPHE recommends that the instructor of this course should have a minimum degree of Master in Health Education and/or be certified as an entry-level or advanced-level health education specialist (CHES/MCHES) SOPHE recommends inviting the librarian to demonstrate use of library resources.

### **Suggested Leadership Engagement Assignment**

Students select a health issue that is of interest to them and addresses a community need. They apply the basic skills of advocacy and leadership taught through this course within a community agency or organization. They will complete a reflection paper that describes their process in becoming an advocate, addresses the Certified Health Education Specialist (CHES) competencies, and provides an assessment of knowledge gained and a connection to the field. In addition, they will develop a personal leadership portfolio to track personal and professional growth related to all CHES competencies and reflections on growth and leadership development.

#### **Advocacy**

1. Purpose—define and outline the purpose of advocacy in advancing public health education, promotion, policy and social justice; clarify what advocacy is and what it is not; assess risk and rewards (SWOT analysis of advocacy) and overcoming barriers to advocacy.
2. Levels of advocacy—describe levels of advocacy within an ecological framework addressing the personal and family, local community, state and national voluntary health organizations and professional organization levels.
3. Advocacy overview—provide an overview of health policy; illustrate the process for developing public health policies at various levels through the use of case studies and mock debates.
4. Gather evidence—identify an issue, gather the evidence; use epidemiological data to support position; summarize the perspective of opposing interest groups; assess available resources; and outline goals and objectives.
5. Develop advocacy message—utilize accurate peer and societal norms to formulate a health enhancing message; describe the history of campaigns including how they were initiated, developed, and delivered; create a message that is accurate, research-supported, appealing, and structured.
6. Develop advocacy strategy—create letters, media, and internet-based social marketing to initiate community mobilization, lobbying, and networking; adapt health messages and communication techniques to a specific target audience; implement messages and actions at the appropriate time within the advocacy cycle.
7. Implementation and evaluation—implement and evaluate advocacy efforts to include monitoring and evaluating process and impact; building sustainability, human capital, and fundraising.

#### **Leadership Development**

8. Personal integrity and respect—define personal integrity and respect, leadership, responsibility, and responsibility to others.
9. Leadership models—outline various leadership models and demonstrate leadership skills and qualities, such as servant, relational, collaborative; non-profit and organizational leadership, campus organizations; identify issues and set goals; articulate your organizational vision, and management style; interact in teams and groups; plan for change and develop strategies for change; integrate health education code of ethics and public health code of ethics.
10. Prepare others—prepare others to lead through recruiting, managing expectations, modeling, and leading by example.
11. Personal leadership styles—identify and demonstrate your leadership style and qualities; utilize a valid leadership inventory; customize your style to the situation around you; document your personal growth.
12. Health policy development—demonstrate leadership in health policy development and advocacy through championing a cause and engaging in civic action, mobilizing communities for change, and advocating for yourself, your clients, and the profession.

<sup>\*</sup>Developed by the Society for Public Health Education (SOPHE), March 2014

<sup>†</sup> SOPHE recommends that the instructor of this course should have a minimum of a Master's in Health Education and/or be certified as an entry-level or advanced-level health education specialist (i.e. CHES or MCHES).

## Health Administration—Introduction to Health Administration and the U.S. Health System

### 1. Major Characteristics of U.S. Health Care Delivery

Define major components of the U.S. health care system; identify major players in the U.S. health care system; define social justice and market justice and how they relate to the delivery of health care; define a patient; compare an illness to a disease; and develop a health care terminology.

### 2. Foundations and Historical Overview of U.S. Health Care System

Describe historical U.S. health care institutions; health care in the pre-industrial period, post-industrial period, corporate period; impacts of advances in scientific and medical knowledge; and impact of four determinants of health – environment, behavior and lifestyle, heredity, and medical care.

### 3. Health Care Providers – doctor-level

Describe MDs (Allopathic physicians), DOs (Osteopathic physicians), and other doctoral-level health professionals e.g. DDS, DMD, DNP, DC, DPM, DPT, PharmD, DrPH, DEd, PhD, and their educational processes.

### 4. Health Care Providers and Public Health Professionals

Discuss nurses, nursing and nursing education; education in public health, including bachelors and masters degrees, allied health staff, e.g. RD, PT, OT, ST, technologists, and therapist aides, and their educational processes; discuss education in public health at the undergraduate and graduate levels, including educational expectations.

### 5. Hospitals/Medical Centers

Define a hospital, medical center, teaching hospital and an academic medical center; principles of licensing, certification, and regulation; governance, hospital ownership; and categories of hospitals.

### 6. Outpatient Services and Primary Care

Define and describe primary compared to specialty care; outpatient facilities (physician offices, urgent care centers, FQHC, etc.); different types of physician practices.

### 7. Long-Term Care Services

Define and describe long-term care and types of residents—not just the elderly; long-term care services; continuum of care; different LTC facilities (SNF, AL, IL, Home Health, Hospice, Respite care, Adult day Care, CCRC); advance medical directives.

### 8. Public Health Services

Define public health; different types of public health services; public health facilities; public health at the different governmental levels (federal, state, and local) and key organizations: CDC, NIH, WHO, state health departments etc.

### 8. Insurance and Reimbursement

Define and describe insurance and health insurance; private insurance compared to social insurance i.e. Title XVII (Medicare) and Title XIX (Medicaid); key terminology associated with health insurance, e.g., premium, deductible, co-insurance, copay; reimbursement methods, e.g., FFS, prospective –DRG and RBRVS, capitation.

### 9. Populations with Special Health Needs

Define and discuss vulnerable populations concerning health care services; framework for understanding vulnerable populations (predisposing, enabling, and need); correlations among vulnerable populations and usage of health care services.

### 10. Managing Care, Integrated Services, and Interprofessional Teams

Describe and discuss managed care including examples, e.g., HMO, PPO, POS; characteristics of integrated delivery systems including role of entrepreneurship in health care, teamwork vs. group work, and the importance of diversity.

### 11. Technology in Health Care

Describe and discuss types of technology in health care (e.g., clinical, administrative); types of IT systems in health care including EMRs/EHRs; regulation and technology (FDA, etc.).

### 12. Cost, Access, and Quality

Defining cost, access, and quality and the relationships among these three concepts.

### 13. Health Policy

Describe and discuss the three branches of government; how a law is developed, enacted, and implemented; key laws including HIPAA; and the ACA including health exchanges, navigators, and accountable care organizations.

## Health Administration–Management of Health Organizations

- 1. An Overview of Health Care Management**  
Define and discuss health care management, including the roles and functions of the health care manager and the expected competencies.
- 2. Leadership**  
Define and discuss management vs. leadership, models and styles of leadership, and governance of health care organizations.
- 3. Motivation**  
Describe and discuss theories of motivation, intrinsic and extrinsic factors, and strategies for improving employee motivation.
- 4. Organizational Behavior and Management Thinking**  
Describe and discuss critical thinking and its relationship to organizational behavior including organizational change, communications, and problem solving.
- 5. Strategic Planning**  
Define strategic planning and the process including SWOT analysis and the importance of monitoring and control.
- 6. Health Care Marketing**  
Define health care marketing, the marketing processes used by health care managers, and the differences between marketing products and services.
- 7. Quality Improvement Basics**  
Define quality, methods for measuring quality, quality improvement tools, and quality improvement agencies, e.g., TJC, AHRQ.
- 8. Information Technology**  
Define and describe the types of health information, technology, and their applications including the role of the health care manager in "managing" health care information and the importance of HIPAA and information security.
- 9. Managing Costs and Revenues**  
Define and discuss health care expenditures, health care managers' roles in financial management, basic financial concepts and terms including revenue, expenses, capital accounts, receivables, accounts payable etc., and their relationship including methods for increasing revenue and controlling costs.
- 10. Managing Health Care Professionals**  
Discuss the education processes of health care professionals; licensing, certification, and registration; certification processes; management of human resources; managing and working with clinical professionals.
- 11. Teamwork**  
Describe teamwork including the stages of team formation, managing teams, and the benefits and cost of teams in health care organizations.
- 12. Addressing Health Disparities: Cultural Proficiency**  
Define and discuss cultural competency, including demographics and demographic changes and their impacts on patients and providers with an emphasis on how health care managers can increase cultural awareness.
- 13. Health Care Ethics**  
Define and discuss ethics concepts of respect for persons, beneficence, non-maleficence and the concept of biomedical ethics.
- 14. Health Care Law**  
Discuss law in health care settings; cover legal responsibilities such as informed consent, patient rights, provider responsibilities, HIPAA, etc.; advanced medical directives; defining and recognizing fraud and abuse, plus steps health care managers can take to prevent fraud and abuse.

## Health Administration—Health Information Systems

- 1. Health Care Information Systems**  
Define health information systems and health informatics; provide an overview of current health information technology including hardware and software; differentiate roles of health IS/IT professionals.
- 2. Health Care Information Management**  
Define information management; discuss the technology to support information processing and communication tasks of relating to public health practice, education, and research; identify and appropriately use terminology relating to health information management.
- 3. Health Informatics**  
Discuss health IT standards, software applications in health care and public health; discuss the fundamentals of the management of information systems, including systems analysis, databases, and security.
- 4. Network Structure**  
Discuss health-related data structures, and enterprise architecture in health care and public health; describe the organizational structure of health IS/IT departments; discuss systems design, networking, and systems architecture.
- 5. Health Care Data**  
Define and discuss health/biomedical information and data; discuss data completeness and accuracy; define health data structure, content, and standards.
- 6. Creating and Using Information and Knowledge**  
Define information and knowledge - the storage, retrieval, and use of data for problem solving and decision making.
- 7. Electronic Record Keeping in Health Care**  
Identify format and content of the electronic health records; understand various methods of retention and retrieval of health records; discuss the advantages of electronic health records over paper-based and hybrid health records.
- 8. Electronic Health Records**  
Compare electronic health records (EHRs) to electronic medical records (EMRs); discuss single organization electronic health records to multiple organization electronic health records.
- 9. Protecting Information—Security**  
Discuss how to protect health data; demonstrate an understanding of the challenges to maintain information security.
- 10. Privacy and Confidentiality**  
Define health care manager's role in privacy and confidentiality of health information systems; explain the components of the HIPAA regulations; identify the eight types of HIPAA electronic transactions; identify legal aspects of electronic health record and release of information.
- 11. Clinical Information Systems**  
Define clinical information systems; demonstrate an understanding of documentation/charting, computerized provider order entry (CPOE), and medication administration in EHRs.
- 12. Decision Support Systems**  
Define decision support systems (DSS); demonstrate how EHRs are used in clinical settings and patient administration.
- 13. Administrative Information Systems**  
Describe health IS/IT in various administrative functions such as HR, recordkeeping, accounting, finance, compliance, marketing, and regulatory requirements.
- 14. Reimbursement Systems**  
Describe different methods of capturing and recording data in available EHRs/EMRs and the relationship to reimbursement methodologies.

## **Environmental Health Curricular Outlines**

The following environmental health curriculum is recommended for community colleges. The curriculum is intentionally flexible. An introductory Principles of Environmental Health course is recommended for public health generalist programs as well as for those who wish to pursue specialty coursework in environmental health. Three specialty courses are recommended and community colleges can select any two of these three for the environmental health specialization. The courses are presented as outlines rather than detailed course content to allow flexibility in the level of the course.

### **Environmental Health—Principles of Environmental Health**

#### **Basic Principles and Methodologies**

1. Definitions and historical perspectives
2. Environment and health
3. Health hazards - toxicology
4. Risk assessment and management
5. Health data and epidemiology
6. Environmental health regulations and compliance

#### **Exposure Pathways and Control**

7. Indoor and outdoor air quality and health
8. Water quality and health
9. Food and health
10. Solid and hazardous wastes
11. Vector-borne diseases
12. Noise and health

#### **Global Environmental Health Issues in the 21st century**

13. Built Environment and human populations
14. Energy and sustainability
15. Occupational health and hygiene
16. Climate change and human health
17. Environmental justice and global health
18. Protecting public health and the environment

In addition to the Principles of Environmental Health Course two of the following three courses should be included in the Environmental Health Specialization curriculum

### **Environmental Health—Solid and Hazardous Waste Management**

#### **Overview of Solid and Hazardous Wastes as a Major Environmental Health Issue**

1. Introduction to solid and hazardous wastes: Problems and public health issues

#### **Solid and Hazardous Waste Regulations**

2. Resource Conservation and Recovery Act (RCRA)
3. Comprehensive Environmental Response Compensation and Liability Act (CERCLA)
4. Superfund Amendments and Reauthorization Act (SARA)
5. Clean Air Act (CAA)

#### **Solid Waste Collection and Transport**

6. Municipal solid waste collection
7. Transportation logistics and management

#### **Waste Minimization**

8. Reduction, Recycling, and Reuse
9. Composting

#### **Waste Disposal**

10. Landfill
11. Incineration
12. Waste-to-Energy

#### **Hazardous Wastes: Radioactive and Medical Wastes**

13. Radioactive wastes type, classification, and management
14. Medical wastes, handling, and disposal

## **Environmental Health—Disease Vectors and Control**

### **Arthropods and Vermin as Disease Vectors**

1. History and role of arthropods and vermin in public health
2. Survey of diseases and non-disease problems of arthropods

### **Overview of Arthropod Biology and Physiology**

3. Classification of vectors of environmental health significance
4. Characteristics, habitats, life history, economic/medical importance

### **Epidemiology of Vector-borne diseases**

5. Host-Parasite-Environment interaction and diseases
6. Epidemiology of vector borne diseases

### **Vector Borne Diseases of Public Health Significance**

7. Mosquitoes as vectors of disease with emphasis on Malaria and West Nile Virus, and their control
8. Cockroaches as vectors of multiple human diseases and their control
9. Ticks as vectors of human diseases with emphasis on Lyme disease, and their control
10. Flies as vectors of human diseases with emphasis on River blindness
11. American (Chagas) and African (Sleeping sickness) Trypanosomiasis and control
12. Zoonotic Diseases and their control

### **Vector Monitoring and Control Strategies**

13. Arthropod sampling and surveillance
14. Chemical control of arthropod vectors
15. Biological control of vectors
16. Integrated pest management (IPM)
17. Vermin control



### Overview of Food Safety and Public Health

1. Historical perspectives of food safety
2. Public health challenges of food safety
3. Classification of foodborne diseases and causes

### Food Safety Standards and Regulations

4. Food sanitation regulations and standards
5. Hazard Analysis and Critical Control Points (HACCP)

### Foodborne Illnesses

6. Foodborne illness due to viruses
7. Foodborne illness due to bacteria
8. Foodborne illness due to fungi
9. Foodborne illness due to parasites
10. Foodborne toxic and physical agents
11. Prion diseases in foods
12. Food allergies

### Keeping Foods Safe in Storage, Preparation, and Serving

13. Preparation and serving food
14. Food storage
15. Inactivation of pathogens and toxins by processing
16. Cleaning and sanitizing
17. Pest control and food safety

## Public Health Preparedness

### Foundations of Public Health Preparedness

1. Introduction to public health preparedness: its origins, evolution, and current definition; the national public health preparedness system “enterprise” (federal/state/local agencies and their roles, private sector partnerships, etc.) including health care/hospital preparedness; relationship to global and homeland health security and community resilience; the “prevent-detect-respond” paradigm; and emphasis of special/vulnerable/at-risk populations.
2. The threat environment and all-hazards preparedness: the threats and hazards associated with the full spectrum of man-made and naturally occurring events including acts of terrorism, natural disasters (earthquakes, wildfires, and severe weather events), transportation and industrial accidents (including nuclear power plants), and infectious diseases (outbreaks, epidemics, and pandemics).
3. The framework for public health preparedness: the Pandemic and All-Hazards Preparedness Act, Presidential Policy Directive 8 on National Preparedness, the National Health Security Strategy, “Whole of Community” principles, and critical infrastructure protection.
4. The intersection of public health preparedness and emergency management: the phases of emergency management, National Incident Management System (NIMS), Incident Command Structure and Hospital Incident Command System, Situational Awareness (including Fusion Centers), Stafford Act implications, mutual aid and assistance compacts and agreements including the Emergency Management Assistance Compact (EMAC), importance of training, exercises and drills, and the Homeland Security Exercise Evaluation Program (HSEEP).

### Overview and Basic Principles of Public Health Preparedness

5. Primer on public health emergency preparedness law: constitutional and statutory authorities and limitations, general emergency powers, declaration of emergency/disaster, quarantine and isolation, immunity and liability protections (including the PREP Act), professional scope of practice, leadership, etc.
6. Epidemiology and disease outbreak investigation and control basics: basic epidemiology principles, concepts, and procedures useful in the surveillance and investigation of health-related states or events; steps in an outbreak investigation; and laboratory and surveillance systems including syndromic surveillance.
7. Public health preparedness planning: the fundamentals for effective strategic, tactical, and operational planning including elements of a public health disaster plan, the role of Hazard Vulnerability Risk Assessments, and utility of special incident planning (e.g., special events including those of national security designation).

### Public Health Preparedness Capabilities: Responsibilities, Functions, and Tasks

8. Biosurveillance: public health laboratory testing and disease surveillance and epidemiological investigation.
9. Community resilience: public health and health care preparedness and recovery including importance of cultural competencies.
10. Countermeasures and mitigation: medical countermeasures dispensing, medical material management and distribution, non-pharmaceutical interventions, and responder safety.
11. Incident and information management: emergency operations coordination, emergency information warning, and information sharing (including elements of risk and crisis communications, and role of traditional and social media).
12. Surge management: mass care (including crisis standards of care), fatality management, medical surge, and volunteer management.

### Practice Considerations in Public Health Preparedness

13. Public health preparedness tools and resources: a compendium of assets and training opportunities to assist public health professionals.
14. Public health in action—tying it all together: through the use of case studies, demonstrate effective public health preparedness, response, and recovery at the state and local levels, and discuss career opportunities in the field of public health preparedness.