

# Clinical Prevention And Population Health Curriculum Framework

Version 3: Revised February 2015

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ASSOCIATION FOR PREVENTION TEACHING AND RESEARCH



**The Clinical Prevention and Population Health Curriculum Framework is a product of the Healthy People Curriculum Task Force convened by the Association for Prevention Teaching and Research. The project is supported by a Cooperative Agreement with the DHHS Office of Disease Prevention and Health Promotion.**

## Introduction

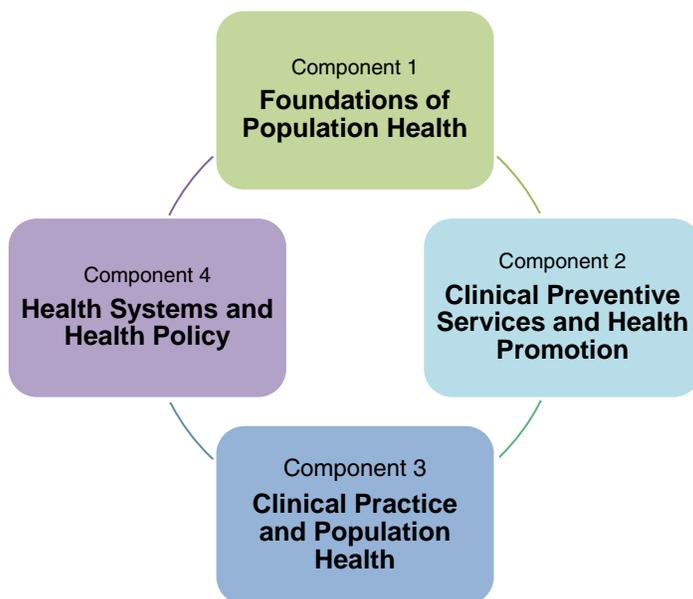
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The Clinical Prevention and Population Health Curriculum Framework (Framework) is a product of the interprofessional Healthy People Curriculum Task Force established in 2002 by the Association for Prevention Teaching and Research (APTR). The Framework provides a common core of knowledge for clinical health professions about individual and population-oriented prevention and health promotion efforts. Health professions educators are encouraged to review their curricula and curricular requirements to ensure they include elements of the Framework<sup>1</sup>.

### Framework Structure

The Framework provides a

- Content outline that is compatible with a range of learning outcomes or competencies as determined by each health profession,
- Structure for organizing and monitoring curriculum,
- Structure for communicating within and among the health professions.<sup>2</sup>



This third version of the Framework consists of four (4) **components** and 23 **domains**, with each domain including **topic areas** and illustrative examples.

In this version of the Framework, the titles of two of the components were updated to emphasize their relationships to population health. The components are:

- **Component 1:** Foundations of Population Health: This component includes the quantitative and analytic skills used to assess, compare, describe, and monitor the health of populations.
- **Component 2:** Clinical Preventive Services and Health Promotion: This component is based on the organizational structure initially used by the U.S. Preventive Services Task Force, and highlights evidence-based, health promotion and disease prevention interventions in the clinical setting.

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<sup>1</sup> Examples of national health professions education organizations that have used the Framework to promote curricular change are described in Appendix A.

<sup>2</sup> To facilitate communication, the Task Force recommends that all health professions use the term “Clinical Prevention and Population Health” when referring to this subject area in the curriculum.

- **Component 3: Clinical Practice and Population Health:** This component highlights opportunities and disciplines that require individual- and population-based health perspectives.
- **Component 4: Health Systems and Health Policy:** This component includes the systems and policies that help to govern the health and healthcare system, including collaborations between the clinical care and public health communities.

The Curriculum Framework does not provide detailed information about how to teach clinical prevention and population health. The examples included in the Appendices are models of how the Framework content has been integrated into interprofessional education settings, as well as in profession-specific curricula. A clinical prevention and population health resource center is also available on the APTR website at [http://www.aptrweb.org/IPE\\_Resources](http://www.aptrweb.org/IPE_Resources).

## Rationale

The Task Force members believe that if the United States is to achieve Healthy People objectives, all health professionals must incorporate population health principles and activities into their education and professional practices. The Task Force recognizes the value of using an interprofessional education approach for teaching and learning clinical prevention and population health, as well as for developing models for students' future clinical practice.

Population health has been defined as “the health outcomes of a group of individuals including the distribution of such outcomes within the group.”<sup>3</sup> More recently, population health has been described as “measuring and optimizing the health of groups and in so doing embraces the full range of determinants of health, including health care delivery.”<sup>4</sup>

Improving the nation’s health requires health professionals to understand and apply prevention and population health principles, practice in interprofessional teams, and link with other programs and services that affect health. Interprofessional team-based care—care delivered by intentionally created work groups who share the responsibility for a group of patients<sup>5</sup>—is facilitated by the development of the relevant knowledge, skills and attitudes early in the process of health professions education.

A more effective, sustainable healthcare system includes a workforce that

- understands and integrates population health principles and implications for individual patients, clinical practices, and the community;
- is committed to working in interprofessional teams to promote health, as well as prevent disease and injury;
- contributes to the public health systems in which they practice; and
- is dedicated to improving health outcomes and reducing health disparities across the population being served.

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<sup>3</sup> Kindig D and Stoddard G. What is Population Health? *Am J Public Health*. March 2003; 93(3): 380-3.

<sup>4</sup> Gourevitch Marc. Population Health and the Academic Medical Center: The Time Is Right. *Academic Medicine*. April 2014; 89(4): 544-549.

<sup>5</sup> Interprofessional Education Collaborative (IPEC) 2011. <http://ipecollaborative.org/uploads/IPEC-Core-Competencies.pdf>

## APTR Healthy People Curriculum Task Force

The Healthy People Curriculum Task Force was convened by the Association for Prevention Teaching and Research in 2002 and has been meeting twice yearly since then. The mission of the Task Force is to achieve Healthy People 2010 and 2020 objectives of increasing health promotion, disease prevention, population health and interprofessional learning experiences for students in health professions education programs.

### Convening Member

- Association for Prevention Teaching and Research

### Members

- American Association of Colleges of Nursing
- American Association of Colleges of Osteopathic Medicine
- American Association of Colleges of Pharmacy
- American Dental Education Association
- Association of American Medical Colleges
- Association of Schools of Allied Health Professions
- National Organization of Nurse Practitioner Faculties
- Physician Assistant Education Association

### Resource Organizations

- Association of Schools and Programs of Public Health
- Community Campus Partnerships for Health

Established in 1942, the Association for Prevention Teaching and Research (APTR) is a national membership organization for faculty and academic institutions advancing the education of physicians and other health professionals in prevention and population health. The APTR Council of Graduate Programs in Public Health is the organizing body for accredited and emerging graduate public health programs in the U.S.

## Curriculum Recommendations

Although the Framework was primarily designed to provide guidelines for education in the clinical health professions represented on the Healthy People Curriculum Task Force, the Framework is applicable to many other health professions disciplines.

The Task Force thus recommends that all health professions education programs:

- Incorporate clinical prevention and population health educational content in their curricula.
- Evaluate students' knowledge and skills with regard to clinical prevention and population health.
- Systematically determine whether appropriate domains and topic areas in the Curriculum Framework are part of its standardized examinations for licensure and certification as well as program accreditation.
- Use diverse teaching and learning methods to incorporate clinical prevention and population health content into degree and continuing education programs, including service-learning, problem/case-based learning, and simulation methods.<sup>6</sup>
- Integrate innovative, interprofessional educational experiences and approaches focused on clinical prevention and population health.<sup>7</sup>

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<sup>6</sup> Exemplars located in Appendix C, Successful Practices Case Studies.

<sup>7</sup> A guide for linking elements of the Framework with interprofessional competencies is included in Appendix A.

## Component 1: Foundations of Population Health

### 1. Descriptive Epidemiology: The Health of Populations

Topic areas	Illustrative examples
A. Burden of disease and injury	Morbidity and mortality
B. Course of disease and injury	Incidence, prevalence, case-fatality
C. Determinants of health, disease, and injury	Genetic, behavioral, socioeconomic, environmental, access to health care, quality of health care
D. Distribution of disease and injury	Person, place, time
E. Data sources	County/state/national vital statistics, active and passive public health surveillance

### 2. Etiology, Benefits and Harms–Health Research Evaluation

Topic areas	Illustrative examples
A. Study designs	Surveys, observational studies, randomized clinical trials
B. Estimation - magnitude of association	Relative risk/odds ratio, attributable risk percentage, number needed to treat, population impact measures
C. Inference	Statistical significance test, confidence intervals
D. Data quality	Accuracy, bias, confounding, error, interaction, precision
E. Data presentation	Interpretation of data; presentation of data in tables and graphs

### 3. Evidence-Based Practice

Topic areas	Illustrative examples
A. Assessing the quality of the evidence	Types and quality of studies and relevance to target population
B. Assessing the magnitude of the effect	Incorporating benefits, harms, values
C. Nationally recognized guidelines	Standards, methods and grading criteria used for establishing guidelines

### 4. Implementation of Health Promotion and Disease Prevention Interventions

Topic areas	Illustrative examples
A. Types of prevention	Primary, secondary, tertiary
B. Target audience for direct interventions	Individuals, high risk groups, populations
C. Recognition of the effect of social determinants of health on the receipt of preventive services	Income, education, access to transportation, culture
D. Role of the clinician and interprofessional team in improving the health of populations	Education, incentives for behavior change, the role for genomics in clinical practice, advocacy (laws/policies; engineering/environmental solutions)
E. Practice-based systems to aid with the provision of preventive services	Electronic record reminders for clinicians and patients; outreach to patients using new technologies; home visits by community health/outreach workers; use and limitations of social media
F. Impact of a population health focus on the health of	Community-based approaches to facilitate

individuals and communities	healthy weight and active lifestyles
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## 5. Determinants of Health

Topic areas	Illustrative examples
A. Impact of social factors on individual behaviors	Educational and employment opportunities, norms and attitudes, income
B. Impact on health of the unaltered environment, altered environment and built environment	Climate change, environmental contamination, built environment and community planning that supports active lifestyles
C. Impact of policy and law as determinants of health and disease	Zoning laws and the proximity of residential areas to sources of pollution, green space, and nutritious food; full-day kindergarten and high school completion programs to support educational attainment; tenant-based rental assistance programs to decrease crime.
D. Importance of health care as a determinant of health	Early detection, prenatal care, chronic disease management
E. Relationship between human health, animal health and ecosystem health and implications for emerging infectious disease and geographic spread of disease	Antibiotic resistance, environmental changes and impact on humans and animals

## 6. Population Health Informatics

Topic areas	Illustrative examples
A. Collection and utilization of population health data to assess population health, guide the provision of health care services and analyze health outcomes	Shared data standards for information collected in electronic health records and community settings to better inform clinical practices and the community about the health status and needs of populations
B. Timely and accurate documentation and delivery of information about preventive services and reportable diseases to public health agencies	Use of electronic health records to track/report quality outcomes; the provision of preventive health services.

## 7. Evaluation

Topic areas	Illustrative examples
A. Process and outcome assessments	Measuring outcomes based on population health measures; compliance with legal and ethical principles
B. Decision analyses	Cost-effectiveness, cost-benefit, and cost-utility
C. Quality improvement processes	Patient safety; Plan-Do-Study-Act (PDSA) cycle; clinical practice improvement (CPI); root cause analyses

## Component 2: Clinical Preventive Services and Health Promotion

### 1. Screening

Topic areas	Illustrative examples
A. Analysis of screening tests	Range of normal, sensitivity, specificity, predictive value, target population
B. Assessment of health risks	Psychosocial factors, environmental factors, genetic determinants
C. Criteria for successful screening	Effectiveness, benefits and harms, barriers, cost, acceptance by patient
D. Clinician-patient communication	Patient participation in decision-making, informed consent, risk communication, advocacy, health literacy
E. Evidence-based recommendations	Use of evidence-based recommendations such as those of the US Preventive Services Task Force
F. Government requirements	Newborn screening

### 2. Counseling for Behavioral Change

Topic areas	Illustrative examples
A. Approaches to behavior change incorporating diverse patient perspectives	Individual and group counseling skills training, motivational interviewing
B. Clinician-patient communication	Patient participation in decision making, informed consent, risk communication, advocacy, health literacy
C. Criteria for successful counseling	Effectiveness, benefits and harms, cost, acceptance by patient
D. Evidence-based recommendations	Use of evidence-based recommendations such as those of the US Preventive Services Task Force

### 3. Immunization

Topic areas	Illustrative examples
A. Approaches to vaccination	Live vs. attenuated/inactivated vaccine, pre- vs. post-exposure, boosters, techniques for administration, target population, population-based immunity
B. Criteria for successful immunization	Effectiveness, benefits and harms, cost, acceptance by patient and community
C. Clinician-patient communication	Patient participation in decision-making, informed consent, risk communication, advocacy, health literacy
D. Evidence-based recommendations	Use of evidence-based recommendations such as those of the Advisory Committee on Immunization Practices
E. Government requirements	State laws, school requirements, vaccine exemptions

#### 4. Preventive Medication

Topic areas	Illustrative examples
A. Approaches to chemoprevention	Pre- vs. post- exposure, time-limited vs. long-term
B. Criteria for successful chemoprevention	Effectiveness, benefits and harms, barriers, cost, acceptance by patient
C. Clinician-patient communication	Patient participation in decision-making, informed consent, risk communication, advocacy, health literacy
D. Evidence-based recommendations	Use of evidence-based recommendations such as those of the US Preventive Services Task Force

#### 5. Other Preventive Interventions

Topic areas	Illustrative examples
A. Lifestyle interventions	Diet, exercise, smoking cessation
B. Criteria for successful preventive interventions	Effectiveness, benefits and harms, barriers, cost, acceptance by patient
C. Clinician-patient communication	Patient participation in decision-making, informed consent, risk communication, advocacy, health literacy
D. Evidence-based recommendations	Use of evidence-based recommendations such as those of the U.S. Preventive Services Task Force

## Component 3: Clinical Practice and Population Health

### 1. Incorporating Population Health into Clinical Care

Topic areas	Illustrative examples
A. Understanding and applying the principles of patient and community engagement when seeking to achieve population health improvement	Community-oriented primary care, community involvement; engagement of patients in the critical review of health-related news and information
B. Influence of social determinants of health on clinical interventions	Transportation, food deserts, green space, income, occupation, personal and cultural beliefs, health literacy;
C. Population health assessment and improvement within a coordinated healthcare delivery system	Patient safety assessments; coordinated care for groups of patients with chronic diseases
D. Coordination of health services	Coordination with the community, the public health system, community-based programs, and across the healthcare system
E. Principles of healthcare team practice	Roles and contributions of community and lay workers such as patient navigators and community health workers; interprofessional team competencies

### 2. Partnering with the Public to Improve Health

Topic areas	Illustrative examples
A. Community health assessments	Methods of assessing community needs/strengths; community assets and resources to improve the health of individuals and populations; engagement of communities in the critical review of health information
B. Options for interventions	Application of the principles of community engagement to prioritize interventions; strategies for building community capacity
C. Conducting or contributing to community-engaged research	Application of the principles of community-based participatory research
D. Media communications	Strategies for using mass and social media; risk communication
E. Literacy level and cultural appropriateness	National Culturally and Linguistically Appropriate Services (CLAS) Standards; federal health literacy tools and guidelines
F. Evidence-based recommendations for community preventive services	Community Preventive Services Task Force recommendations

### 3. Environmental Health

Topic areas	Illustrative examples
A. Scope of environmental health	Unaltered/natural environment, altered environment, built environment; air and water quality, food sustainability, environmental exposures (chemical, microbiologic, physical, radiologic)
B. Agents, vectors, and routes of entry of environmental contaminants	Tobacco, lead, mercury, pesticides; air, water, food

C. Environmental health risk assessment and risk management	Recognition and reduction of environmental hazards to vulnerable individuals and populations
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#### 4. Occupational Health

Topic areas	Illustrative examples
A. Employment-based risks and injuries, including military service	Infectious and chronic diseases; biologic, chemical, physical, and radiologic exposures; injuries; mental health
B. Prevention and control of occupational exposures and injuries	Surveillance; engineering controls, safe work practices, administrative controls, personal protective equipment
C. Exposure and prevention in healthcare settings	Needlestick injuries, back injuries, latex allergy, violence

#### 5. Global Health Issues

Topic areas	Illustrative examples
A. Role of key international organizations in global health	World Health Organization, USAID, global partnerships and private foundations
B. Diseases and population patterns of diseases in other countries	Burden of disease and related risk factors, population growth, health and development
C. Successful measures to address key burdens of disease	Immunizations, clean water, mosquito abatement
D. Demographic changes	Size and age of population, mortality and fertility rates
E. Effects of globalization on health	Emerging and re-emerging diseases, antimicrobial resistance, climate change, food and water challenges; needs of immigrant and refugee populations; impacts of natural disasters, political and social disruptions

#### 6. Cultural Dimensions of Practice

Topic areas	Illustrative examples
A. Cultural influences on clinicians' delivery of health services	Culture of communities, institutions, providers, patients
B. Cultural influences on individuals and communities	Health-related beliefs and behaviors; use of health services
C. Design and delivery of culturally appropriate and sensitive health care, recognizing bias, prejudice and stereotyping	The culturally sensitive, patient-centered health care home model.

#### 7. Emergency Preparedness and Response Systems

Topic areas	Illustrative examples
A. Preparedness and response systems	Unified command, incident command; EMS, public health, hospital, clinician, and community engagement; protection of vulnerable populations in emergencies
B. Defining roles and preparing the health system workforce	Timely emergency communications and coordination

## Component 4: Health Systems and Health Policy

### 1. Organization of Clinical and Public Health Systems

Topic areas	Illustrative examples
A. Clinical health services	Continuum of care – ambulatory, home, hospital, long-term care; components—pharmaceutical and device industry, healthcare institutions, healthcare providers, biomedical researchers
B. Public health system responsibilities	Core functions of public health, essential services of public health
C. Structure of public health systems	Federal, state, county, and local agencies; boards of health; community-based organizations
D. Collaboration between clinical practice and public health	Reportable diseases and conditions; death certificate completion; emergency response; health education, advocacy

### 2. Health Services Financing

Topic areas	Illustrative examples
A. Insurance coverage and reimbursement for clinical services	Variations in service coverage; deductibles; co-pays; provider networks; provider and institutional charges; Medicaid, Medicare
B. Health care for the uninsured or underinsured	Safety net providers including Federally Qualified Health Centers; emergency room use
C. Financing of healthcare institutions	Capital vs. operational budgets, fixed vs. variable costs, sources of financing
D. Financing of public health services	Federal, state, and local taxes; public health budgets
E. Impact on health of different health services financing mechanisms	International comparisons
F. Ethical principles associated with healthcare financing	Distributive justice models, concepts of efficiency and equity; financing objectives and their impact on health and healthcare services (access, primary vs. specialty services, diagnostic and treatment technologies)

### 3. Clinical and Public Health Workforce

Topic areas	Illustrative examples
A. Regulating health professionals and healthcare institutions	Certification, licensure, institutional accreditation
B. Discipline-specific history, philosophy, roles and responsibilities	Diversity in workforce composition to include underrepresented or disadvantaged groups
C. Interprofessional team approach	Joint clinical and public health education and practice
D. Legal and ethical responsibilities of health professionals	Patient privacy/HIPAA, privileged communications, duty to report

#### 4. Health Policy Process

Topic areas	Illustrative examples
A. Process of health policy making at local, state, and federal levels	Public hearings and comment periods, authorizations vs. appropriations
B. Participation in the policy process	Advisory roles, policy analysis and advocacy
C. Role and impact of policies on health and health care	Impact on the general population, on vulnerable populations, and on health disparities
D. Ethical frameworks for public health decision-making	Weighing individual needs and community needs; community input and consent; respect for diverse values and beliefs

## APPENDICES

### Appendix A: Recommended Resources

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The materials listed here and additional resources can be found at the Resource center for Clinical Prevention and Population Health on the APTR website at [www.aptrweb.org/IPE\\_Resources](http://www.aptrweb.org/IPE_Resources).

#### **Advancing Interprofessional Clinical Prevention and Population Health Education: Curriculum Development Guide for Health Professions Faculty**

A curriculum guide for health professions faculty to prepare students to participate effectively as members of interprofessional health care teams delivering clinical prevention and population health services. The "crosswalk" links the Interprofessional Education Collaborative's (IPEC) Core Competencies for Interprofessional Collaborative Practice and elements of the Clinical Prevention and Population Health Curriculum Framework.

<http://www.aptrweb.org/Crosswalk>

#### **Community Capacity Building**

Community capacity is the combined influence of a community's commitment, resources and skills that can be deployed to build on community strengths and address community problems and opportunities. Building on the skills of local residents, the power of local associations, and the supportive functions of local institutions, asset-based community development draws upon existing community strengths to build stronger, more sustainable communities.

<http://www.abcdinstitute.org/publications/>

#### **Healthy People**

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. For three decades, Healthy People has established benchmarks and monitored progress over time in order to: encourage collaborations across communities and sectors; empower individuals toward making informed health decisions; and measure the impact of prevention activities.

<http://www.healthypeople.gov/>

#### **Health in All Policies**

Health in All Policies is a collaborative approach to improving the health of all people by incorporating health considerations into decision-making across sectors and policy areas. The goal of Health in All Policies is to ensure that all decision-makers are informed about the health consequences of various policy options during the policy development process.

<http://www.phi.org/resources/?resource=hiapguide>

#### **Health Literacy**

Health literacy is the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Nearly 9 out of 10 adults have difficulty using the everyday health information that is routinely available in health care facilities, retail outlets, media, and communities. There are a number of Federal resources to help health and communication professionals improve health literacy at: <http://www.health.gov/communication/literacy/#overview>

#### **Interprofessional Core Competencies**

*Core Competencies for Interprofessional Collaborative Practice* was produced by an expert panel convened in 2009 by the Interprofessional Education Collaborative (IPEC). The panel was charged with identifying individual-level core interprofessional competencies for future health professionals.

<http://ipecollaborative.org/Resources.html>

## **National Center for Interprofessional Practice and Education**

The National Center for Interprofessional Practice and Education leads, coordinates and studies the advancement of collaborative, team-based health professions education and patient care as an efficient model for improving quality, outcomes and cost. The Center is designated by the Health Resources and Services Administration (HRSA) to provide leadership, scholarship, evidence, coordination and national visibility to advance interprofessional education and practice.

<http://nexusipe.org/>

## **Practical Playbook: Public Health. Primary Care. Together.**

A website designed to support increased collaboration between primary care and public health groups by guiding users through the stages of integrated population health improvement. Throughout each stage, the Practical Playbook provides helpful resources such as success stories from across the country, lessons-learned from existing partnerships, and further guidance from industry experts.

<http://practicalplaybook.org>

## **Principles of the Ethical Practice of Public Health**

*Principles of the Ethical Practice of Public Health* was developed by the Center for Health Leadership & Practice, Public Health Institute and highlights the ethical principles that follow from the distinctive characteristics of public health. A key belief is the interdependence of people. Public Health not only seeks to assure the health of whole communities, but also recognizes that the health of individuals is tied to their life in the community.

<http://www.phls.org/home/section/3-26/>

## **Public Health Learning Modules**

Series of 18 online educational modules that address policy approaches to advance health. The Learning Modules provide innovative teaching materials on Healthy People 2020 goals and objectives that are easily-accessible and can be integrated into existing curricula. Each module contains video lectures, slide presentations, student assessments, in-class activities and resources. Modules can be completed for CEUs in multiple disciplines.

<http://www.aptrweb.org/LearningModules>

## **The Guide to Community Preventive Services**

The Task Force on Community Preventive Services develops guidance on which community-based health promotion and disease prevention interventions work and which do not work, based on available scientific evidence. The Community Guide is a credible resource for evidence-based Task Force recommendations and findings about what works to improve public health.

<http://www.thecommunityguide.org>

## **U.S. Preventive Services Task Force**

The leading independent panel of private-sector experts in prevention and primary care, the USPSTF conducts rigorous, impartial assessments of the scientific evidence for the effectiveness of a broad range of clinical preventive services. Its recommendations are considered the "gold standard" for clinical preventive services. USPSTF recommendations have formed the basis of the clinical standards for many professional societies, health organizations, and medical quality review groups.

<http://www.uspreventiveservicestaskforce.org/>

## Appendix B: Accreditation Initiatives Citing the CPPH Framework Content

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Several national initiatives promoting curricular change have incorporated the Framework. Examples include:

### Allied Health

#### Dietetics

1. Scientific and Evidence Base of Practice: integration of scientific information and research into practice.

KR 1.1: The curriculum must reflect the scientific basis of the dietetics profession and must include research methodology, interpretation of research literature and integration of research principles into evidence-based practice. Selected Expected Learning Outcomes:

KR1.1a: Students are able to demonstrate how to locate, interpret, evaluate and use professional literature to make ethical evidence-based decisions

KR1.1b: Students are able to use current information technologies to locate and apply evidence-based guidelines and protocols...

KR 2.2.a: Students are able to demonstrate counseling techniques to facilitate behavior change.

KR 2.3.b: Students are able to identify and describe the roles of others with whom the Registered Dietitian collaborates in the delivery of food and nutrition services.

KR 3.2.a: Students are able to apply knowledge of the role of environment, food and lifestyle choices to develop interventions to affect change and enhance wellness in diverse individuals and groups.

#### Dental Hygiene (ADA)

2-12 Dental hygiene science content must include oral health education and preventive counseling, health promotion, patient management, clinical dental hygiene, provision of services for and management of patients with special needs, community dental/oral health, medical and dental emergencies, legal and ethical aspects of dental hygiene practices, infection and hazard control management, and the provision of oral health care services to patients with bloodborne infectious diseases.

2-19 Graduates must be competent in interpersonal and communication skills to effectively interact with diverse population groups and other members of the health care team.

2-20 Graduates must be competent in assessing, planning, implementing and evaluating community-based oral health programs including health promotion and disease prevention activities.

#### Health Administrative Services (CAHME)

III.B.2 The Program will provide, throughout the curriculum, opportunities for students to participate in team-based and interprofessional activities.

#### Occupational Therapy (ACOTE)

B.1.0. Program content must be based on a broad foundation in the liberal arts and sciences. A strong foundation in the biological, physical, social and behavioral sciences supports an understanding of occupation across the lifespan. The student will be able to: B.1.6 - Demonstrate knowledge of global social issues and prevailing health and welfare needs of populations with or at risk for disabilities and chronic health conditions.

B2.0. Coursework must facilitate development of the performance criteria listed below. The student will be able to: B.2.5 - Explain the role of occupation in the promotion of health and the prevention of disease and disability for the individual, family, and society.

### **Physical Therapy (CAPTE)**

- CC-4 The physical therapist professional curriculum includes clinical education experiences for each student that encompass: d) Opportunities for involvement in interdisciplinary care;
- CC-5.52 Apply principles of prevention to defined population groups.

### **Respiratory Therapy (CoARC)**

- 4.08 Graduates must be competent in interpersonal and communication skills to effectively interact with diverse population groups.

### **Speech-Language-Hearing (CAA/ASHA)**

- 3.1A Instruction in prevention and identification of auditory and vestibular disorders must include knowledge and skills necessary to interact effectively with patients, families, other appropriate individuals, and professionals, prevent the onset and minimize the development of communication disorders; screen individuals with culturally sensitive screening measures; and administer conservation programs designed to reduce the effects of noise exposure and of agents that are toxic to the auditory and vestibular systems
- 3.1B The program must provide opportunities for students to acquire and demonstrate knowledge and skills in: principles and methods of prevention, assessment, and intervention for people with communication and swallowing disorders across the life span, including consideration of anatomical/physiological, psychological, developmental, linguistic, and cultural correlates of the disorders; and prevention, evaluation, and intervention of communication disorders and swallowing disorders.

## **Medicine**

The Framework has been used as a reference document by the Association of American Medical Colleges (AAMC) in calls for proposals to develop Regional Medicine-Public Health Education Centers funded through their cooperative agreement with the Centers for Disease Control and Prevention (CDC). The Framework was identified as one of the references to guide the improvement of population health education in medical schools and residency programs. Some of the medical schools have used the Framework as one of the reference materials to draft the list of population health competencies for medical students at their schools and to determine their population health curricular structure. <https://www.aamc.org/download/123246/data/populationhealthcompetencies.pdf.pdf>

The American Association of Colleges of Osteopathic Medicine (AACOM) established the Core Competency Liaison Group with representation from each of its colleges of osteopathic medicine. In their deliberations, there was agreement that the osteopathic medical core competencies should reflect the CPPH Curriculum Framework objectives. They have drafted student performance indicators that reflect the goals, evaluation tools, and curricular objectives – which are included in the seven identified core competencies that all osteopathic medical schools could use to measure student competence in the Curriculum Framework topic areas and recommended learning/teaching methods. The seven osteopathic medical core competencies focus on the domains of: (1) Osteopathic Principles and Practices; (2) Medical Knowledge; (3) Patient Care; (4) Interpersonal and Communication Skills; (5) Professionalism; (6) Practice-Based Learning and Improvement; and (7) Systems-Based Practice. <http://www.aacom.org/docs/default-source/core-competencies/corecompetencyreport2012.pdf?sfvrsn=4>

IPE Accreditation Standard for Osteopathic Medical Education:

Standard 6.4 of the COMMISSION ON OSTEOPATHIC COLLEGE ACCREDITATION (COCA) - ACCREDITATION OF COLLEGES OF OSTEOPATHIC MEDICINE: COM Accreditation Standards and Procedures (Effective: July 1, 2014)

<http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/Documents/COM-accreditation-standards-current.pdf>

## Nursing

The 2006 *Essentials of Doctoral Education for Advanced Nursing Practice*, which provides curricular guidance for doctor of nursing practice programs (DNP), also includes “Clinical Prevention and Population Health for Improving the Nation’s Health” as an essential element of the curriculum.

<http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf>

The 2008 *Essentials of Baccalaureate Education for Professional Nursing Practice* revision includes Clinical Prevention and Population Health as one of the nine essential curricular areas for baccalaureate nursing programs. <http://www.aacn.nche.edu/education-resources/baccessentials08.pdf>

The 2011 *Essentials of Master’s Education for Professional Nursing Practice* revision includes Clinical Prevention and Population Health as one of the nine essential curricular areas for all master’s programs in nursing. <http://www.aacn.nche.edu/education-resources/MastersEssentials11.pdf>

Each of the three *Essentials* documents are cited as required standards for undergraduate and graduate nursing education programs by the Commission on Collegiate Nursing Education in the 2013 *Standards for Accreditation of Baccalaureate and Graduate Nursing Programs*.

<http://www.aacn.nche.edu/ccne-accreditation/Standards-Amended-2013.pdf>

## Pharmacy

The Center for the Advancement of Pharmaceutical Education (CAPE) included “Provide Population-Based Care” as a subtopic of Pharmaceutical Care and “Public Health” as a major section within the target educational outcomes. The 2004 CAPE document is cited as a reference for the Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree.

<http://www.aacp.org/resources/education/cape/Pages/default.aspx>

## Physician Assistants

The revised document titled *Competencies for the Physician Assistant Profession* includes interventions for prevention of disease, promotion and maintenance of health, and concepts of population health. The competencies document is endorsed by all the four professional PA organizations.

<http://www.nccpa.net/App/PDFs/Definition%20of%20PA%20Competencies%203.5%20for%20Publication.pdf>

The 4th edition of the *Accreditation Standards for Physician Assistant Education* requires all programs to include instruction in concepts of public health which includes an appreciation of the public health system and the role of health care providers in the prevention of disease and the maintenance of population health.

<http://www.arcpa.org/documents/Standards4theditionwithclarifyingchanges9.2013%20FNL.pdf>

## Appendix C: Exemplars of Population-Focused Experiences in Health Professions Education

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The following case studies describe the development of successful prevention and population health programs in graduate health professions education schools. These are selected examples from a larger collection of Successful Practice Case Studies, a joint effort of the HPCTF and APTR that was funded by the HHS Office of Disease Prevention and Health Promotion. Abstracts, case studies, sample curricula and teaching tools are available at: <http://www.aptrweb.org/SuccessfulPractices>

### Interprofessional Health Education

#### Duke University

[www.aptrweb.org/resource/resmgr/sp\\_interprofessional/dukeu\\_kaprielian\\_cs3.pdf](http://www.aptrweb.org/resource/resmgr/sp_interprofessional/dukeu_kaprielian_cs3.pdf)

Faculty from four Duke University health professions programs developed a vision for interprofessional education. The topic of health promotion and disease prevention is ideal for interprofessional collaboration, as it is core material for all of the participating programs (Doctor of Medicine, Physician Assistant, Doctor of Physical Therapy, and Accelerated Bachelor of Science in Nursing). The resulting one-credit course provides an introduction to fundamental concepts of prevention for entering students within the first month of their respective programs. By establishing early-on a culture of collaboration, in which population health and community context are essential aspects of the care of patients, this course attempts to assist in the culture shift from treating illness in one patient at a time to improving health on a community level.

The Interprofessional Introduction to Prevention course meets one afternoon per week (4 hours) for four consecutive weeks. Students are organized into interprofessional teams, in which they complete team-based learning exercises and a brief project. Before and after, students complete the Readiness for Interprofessional Learning Scale (RIPLS). Web-based modules in Community Health, Clinical Prevention, Health Promotion, and Health Literacy are also utilized.

This interprofessional course uses a team-based learning approach to develop student appreciation of the unique contributions of various health care providers in providing best practice prevention care to populations. Interprofessional student teams work in small groups for organized activities and a community-oriented final project. Web-based modules supplement in-class presentations, providing content necessary in preparation for team-based learning exercises.

The final team project is a 12-slide “electronic poster.” Each student team is assigned a specific member of a fictional family. The team analyzes a specific health issue for this family member (e.g., obesity, diabetes, risky behaviors, low self-esteem, delinquent immunizations), considering the local, regional, and national context. Teams develop prevention and health promotion plans on both the individual and population levels, with attention to the social determinants of health. A poster session on the final day enables students to learn from each other’s work.

#### University of Connecticut

[www.aptrweb.org/resource/resmgr/sp\\_interprofessional/uconn\\_dang\\_cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_interprofessional/uconn_dang_cs.pdf)

The Urban Service Track is a unique collaboration between the University of Connecticut (UConn) Schools of Medicine, Pharmacy, Nursing, and Dental Medicine and community practitioners. The main goal of the Urban Service Track is to develop a group of health care professionals dedicated to caring for Connecticut’s urban, underserved populations and who are knowledgeable about the value of interprofessional teamwork. Each year a group of students from the four professional schools are selected and admitted into the program via an admission process specific to each school. These Urban Health Scholars work as a team to learn to solve challenging issues of health care in urban areas, including providing direct patient care in free clinics, promoting health literacy and cultural competency, and participating in community education and other outreach initiatives. They also conduct quality improvement projects, community-based research, and participate in conferences and professional meetings focusing on health policy and advocacy activities affecting underserved populations.

The Urban Service Track curriculum focuses on the following competencies:

- Cultural and Linguistic Differences
- Professional and Ethical Conduct
- Multiple Constituencies
- Interprofessional Teamwork and Leadership
- Community Resources
- Resource Constraints

- Population Health and Public Health
- Health Policy
- Health Care Financing and Management
- Quality Improvement and Patient Safety
- Advocacy

The Urban Service Track (UST) is a two-year “add-on” program that runs concurrently with the main curriculum within the four schools and provides its Scholars with enhanced learning opportunities. Students admitted into the program are designated as Urban Health Scholars and complete the UST curriculum in addition to the main required curriculum for each respective school. Mastery of the 11 competencies described above is accomplished via community-based patient care, advocacy, and research activities as well as active participation at 8 quarterly learning retreats (4 per year). At each learning retreat, students are introduced to a different vulnerable patient population to enhance their knowledge and understanding of health care issues and barriers specific to that population. Populations covered include: children and youth, the elderly, the homeless, immigrants and refugees, HIV positive patients, those with substance abuse histories and the incarcerated and ex-offenders. Scholars are also required to participate in at least 8-10 field activities, depending on the specific curricular requirement of each school. All field activities are community-based. They are focused on clinical care (e.g., blood pressure and kidney disease screenings at health fairs or oral health screenings), education (e.g., nutrition education to seniors and children, oral health education, fall prevention awareness, community gardens, health careers awareness programs to K-16 students), or advocacy (e.g., participation at the National Association of Community Health Centers' Annual Policy and Issues Forum). Field activities are developed by the UST director and faculty in conjunction with community-based agencies. A unique component of UST is the strong connection with community partners such as community health centers, Hartford Department of Health, and primary care organizations.

## Allied Health Education– Occupational Health

### University of Oklahoma

[www.aptrweb.org/resource/resmgr/sp\\_allied\\_health/uohsc\\_hamilton\\_cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_allied_health/uohsc_hamilton_cs.pdf)

Occupational therapy emphasizes the influence of the environment on public health. The program’s goal is to produce occupational therapy graduates who are prepared to work with groups and organizations to address population and individual health needs through engagement in healthy occupations. Each semester, this sequence reinforces didactic learning while building proficiency and expanding community and population foci. The curricular emphasis on public health content culminates in the seventh semester with OETH 7192 Exploring Community Participation, the capstone course for service-learning and community-based practice. The purpose of this third-year course is to introduce and develop community-building skills. Students examine contemporary approaches to interventions in community settings, including needs assessment, community-building, program development, funding alternatives, identification and measurement of program outcomes, and program evaluation. Students assess needs of the participants, environmental contexts, and occupations to formulate hypotheses and work with participants, students, and facility staff to suggest training and environmental modifications to enhance occupational performance. For example, in several school settings, they recommended environmental modifications to support attention in classrooms, designed an anti-bullying pro-social curriculum, taught emotional regulation and coping skills activities, and promoted exercise and outdoor activity for children ages 2-11 years old. In the living area of a private school, students assessed hazards and implemented environmental modifications by modifying laundry baskets and placing safety equipment in bathrooms.

## Allied Health Education– Nutrition and Exercise

### Sacred Heart University

[www.aptrweb.org/resource/resmgr/sp\\_allied\\_health/sacredheartu\\_bjerke.cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_allied_health/sacredheartu_bjerke.cs.pdf)

Fit Kids is a nutrition education and physical activity program created collaboratively by the Norwalk Health Department, Sacred Heart University, and Norwalk Community College in Connecticut. Undergraduate exercise science students serve as interns and assist in leading/supervising nutrition education and physical activities for elementary school children. Childhood obesity prevalence in Norwalk, Connecticut reflects national trends. As a result, the objectives of Fit Kids include increasing physical activity and healthy eating habits among children

enrolled in after school programs. These objectives match nutrition and physical activity content and curriculum in undergraduate exercise science courses at Sacred Heart University and Norwalk Community College in addition to goals and objectives of Healthy People 2020.

The specific objectives of Fit Kids include a decrease in mean BMI and fat mass, an increase in lean body mass, and improved indicators of fitness including upper body strength and lower extremity power. Fit Kids also seeks to increase self-confidence, self-efficacy (via validated tests) and knowledge of nutrition content measured via a pre and post quiz.

The preparation and administration of Fit Kids nutrition and physical activities by the students requires integration of course content with transformative social engagement with the children and the professionals associated with the program. Service learning is the primary pedagogy used including supporting lecture content and orientations provided by the health department. The program has attracted corporate sponsors and local politicians to events including the mayor of Norwalk. The intervention duration is 12 weeks consisting of two one-hour sessions per week including 30 minutes of nutrition education and 30 minutes of physical activity.

The Fit Kids program assessed several variables among children in the intervention group and comparison group in 2011. Decreased BMI and percent fat was observed in the intervention group as well as increases in strength, power, and self-efficacy. The results from a standardized questionnaire that assesses undergraduate student service learning outcomes reveal that over 80% of student respondents found that activities were “relevant to the course” and “enhanced communication skills”.

## Dental Education

### University of California, Los Angeles

The overall goals of this course are to increase the predoctoral students’ awareness of oral health in the community and the role of clinical dentistry in maintaining oral health and making dental services available, as well as to increase the involvement of the dental profession in community events. Specifically, the course, titled “Community Oral Health Education, Screening and Service” offers students an opportunity to participate in a community event such as an educational health fair, workplace oral health education/screening, or community health screening. Each event is characterized by its target population and community. Students learn about the target population; select appropriate educational materials; plan for adequate staffing, supplies, equipment and transportation; prepare an attractive setting for their presentation at the event; use educational aids such as brochures, videos and an intraoral camera for individualized health education; and use effective communications for health education. Students are required to attend 5 one-hour didactic sessions and participate in two community oral health education events. The type of community events varies in duration from 3 to 7 hours. Credit is given for actual hours. Total= 12-18 hours. The didactic course covers the demographics of a community, facilities where fairs might be staged, and the actual operation and maintenance of the dental portable equipment.

Students participate in Community Health Fairs throughout the greater Los Angeles metropolitan area. The scope of services provided by dental students is oral health education, oral screening, topical fluoride application, and dental sealants. The majority of the fairs are held with the medical school, so dental students have an opportunity to interact with medical students. After attending two fairs, the students are required to attend a reflective session where they have an opportunity to discuss their experiences and discuss the characteristics of the different communities where they provided services.

## Medical Education

### Kansas University School of Medicine

[www.aptrweb.org/resource/resmgr/sp\\_medicine/kansasu\\_ellerbeck.cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_medicine/kansasu_ellerbeck.cs.pdf)

To promote competencies in population health, the University of Kansas developed a required 4-week clerkship which provides students with practical experiences in practice-based learning and improvement (PBLI). In this clerkship, student teams are matched with a clinician with a relevant PBLI project and assigned to a ‘methods advisor’ from the Department of Preventive Medicine and Public Health. Students receive ‘just-in-time’ training in the classroom on issues related to project development and implementation.

- Week 1: Identify need/issue for a defined patient population; investigate current literature and project methods
- Week 2: Design project plan, develop data collection tools, and select statistical tests for evaluation

- Week 3: Collect and analyze data
- Week 4: Present findings

Student teams demonstrate progress on their PBLI project by meeting weekly with their methods advisor to review project benchmarks. Within the past decade student teams have engaged in over 500 projects. Categories include: 1) Community Aspects of Practice and Public Health (56%); 2) Outpatient Clinical Practice Improvement (20%); 3) Inpatient Clinical Practice Improvement (18%); 4) Medical Education (4%); and 5) Health Policy (2%). Students demonstrated competency by successfully applying quality improvement methods to these focused population health issues. The progress to-date demonstrates that a 4-week PBLI clerkship is feasible and can provide practical quality improvement experiences in which students can achieve population health competencies.

Health of the Public (HOP) is a required fourth-year medical school clerkship offered three times in the academic year: October, February and April. During this 4-week clerkship students participate in interactive team-based learning sessions, attend seminars, and work in teams on a population-based health care project called their “capstone project.” The framework for this required team-oriented clerkship grew out of the RMPHEC population health competencies and the ACGME practice-based learning and improvement (PBLI) competencies. The course links students with practicing clinicians or members of the community who are interested in studying or improving clinical practice or addressing a health concern.

### **Kirksville College of Osteopathic Medicine**

[http://www.atsu.edu/kcom/programs/osteopathic\\_medicine/index.htm](http://www.atsu.edu/kcom/programs/osteopathic_medicine/index.htm)

Prevention and holistic care for persons, families and populations are core aspects of osteopathic medicine. As such, the Kirksville College of Osteopathic Medicine, the founding school of osteopathic medicine, threads learning in evidence-based medicine, social determinants of health, healthcare systems and health policy and community focused health across a two year Complete Doctor course within the department of Family Medicine, Preventive Medicine and Community Health. Additionally, in the Osteopathic Theory and Methods course, students are taught how to help patients maintain homeostasis thus maintaining health. These courses are designed to inculcate values, skills and knowledge leading to a well-rounded student physician ready to address the complex needs of patients, families and populations in a comprehensive manner.

Early in a foundations section of material, the Healthy People Framework is introduced to students as benchmarks for population health goals with a focus on preventive medicine. Additionally, four hours of principles of Evidence-Based Medicine (EBM) learning takes place within this section of the curriculum. Within patient-oriented systems sections (the remainder of years one and two), students are introduced to evidence-based medicine didactics appropriate for the system they are studying. The culmination of the evidence-based medicine aspect of the curriculum is juried poster presentations of students’ own topical EBM research.

To help to address physician workforce distribution and, again, to stay true to their osteopathic heritage, the school emphasizes primary care. Social determinants of health, vulnerable populations, health literacy and cultural awareness are all didactic components early in the curriculum. These frame the learner’s approach to clinical didactics across all courses. Healthcare systems and health policy are examined in the fourth semester prior to moving into clinical training sites. A day each spring is set aside to visit the state capitol to raise awareness of vulnerable patient needs and the philosophy of osteopathic physicians. While not required, approximately 70% of students make the two-hour trip to talk to legislators.

Learners have opportunity to explore some of these topics more deeply through elective coursework in Vulnerable Populations, Cultural Awareness in Medicine, Introduction to Public Health, and Health Partners. The latter teams osteopathic medical students with nursing, speech and language disorders, dental and health science students to make interprofessional house-calls on elder patients, performing health screenings and surveying issues such as fall safety and healthcare utilization and needs.

### **University of Massachusetts Worcester Family Medicine Residency Program**

[http://www.aptrweb.org/resource/resmgr/sp\\_medicine/umass\\_deligiannidis.cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_medicine/umass_deligiannidis.cs.pdf)

The University of Massachusetts Worcester Family Medicine Residency is a GME grantee through the Regional Medicine-Public Health Education Center (RMPHEC) initiative, sponsored by the Association of American Medical Colleges and the Centers for Disease Control and Prevention. RMPHEC grantees were required to integrate public/population health and prevention content into their curricula through collaborations with their local/state health agencies and other community partners. The goal of the revised curriculum is to foster a culture of incorporating fundamental public health principles into everyday clinical practice. This integrated curriculum was designed to enrich existing elements of the current residency structure through longitudinal as well as

concentrated experiences, interspersed throughout the three years of residency training. This strategy of integration has resulted in significant improvements in public health and prevention education, without stressing an already strained residency curriculum. This case study describes how one primary care residency integrated public health and prevention education into family medicine training to help residents acquire skills to improve a population's health.

The enriched curriculum has 5 elements: 1) chart rounds; 2) home visits; 3) resident workshops; 4) Family Medicine and Community Health (FMCH) rotation; and 5) senior projects. These elements are longitudinal: chart rounds are required daily, case-based teaching conferences that occur at each of the residency's outpatient training sites; home visits and resident workshops occur throughout the 3 years of residency; and although the FMCH rotation (a one-month intern rotation) and senior projects occur at the beginning and end of residency, they are longitudinal as they set up the framework for resident senior projects. Because these elements already exist as part of the longitudinal curriculum, and are not additional discrete activities, they are sustainable.

The prior structure of Chart Rounds was: residents finished their afternoon clinic session and attended Chart Rounds for 1 to 1.5 hours, where they presented problem-focused, challenging patient cases to fellow residents, the preceptor, and other attendings. This discussion was to elicit additional opinions and advice to help in managing the case. Curriculum enrichment resulted in developing a mnemonic, COMPLETE, that expanded these discussions by reminding participants to consider: Context, Outside visitors, Mental health, Population perspective, Learning from others, Expectations, Time, and Ending with a culture of continuity. In this new "COMPLETE" Chart Rounds, the preceptor leads the discussion and incorporates visiting experts - e.g. pharmacists, behavioral therapists, librarians, and/or public health department partners - into the discussion, using information from the Massachusetts Community Health Information Project (MassCHIP), an online public health database, to provide a public/population health context for the topic being discussed. Chart Rounds discussions have been enriched and employ a population health/public health perspective.

Prior to these curricular changes, home visits occurred in the second and third residency year, focused on patients' medical issues, and the second year curriculum included two afternoon workshops on home visit care. This provided an opportunity to integrate population health into the home visit assessment. This comprehensive review of the home environment and how it affects patients' health, make the social and behavioral determinants of health more vivid for our residents.

Resident workshops were broadened to introduce public health principles. Prior to the curricular change, first year residents had an introductory exposure to their health center's community during their first year FMCH rotation. As a result of curricular improvements, the following additional changes occurred: 1) Residents participate in a Foundations rotation during their first residency month. This provides an introductory exposure to their outpatient health center site as well as to their inpatient settings. At the end of this rotation, combining their interests with community need, residents create a draft framework of a project that they will carry out during their residency. 2) Midway through the first year of residency, interns return to focus on their outpatient health center community for the FMCH rotation that includes training in community assessment. As a group, the residents revisit their chosen focused area of interest to develop a mini-project. This work becomes the basis of an early spring workshop where residents present their assessment and project work to their colleagues and their health center's community medicine faculty champions. 3) Senior projects are the final aspect of the enriched curriculum. Residents work with faculty advisors who guide them in the research, implementation, and evaluation of their project, with a goal of including a public health perspective.

Enriching elements have been incorporated into the curriculum with the goal that, on graduation, residents will be able to: a) apply population health principles within the context of individual patient care and b) consider a population-wide approach to particular health problems as a means of promoting the health of specific groups within the community.

### **Rutgers New Jersey Medical School**

[www.aptrweb.org/resource/resmgr/sp\\_medicine/umdnj\\_bronson.cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_medicine/umdnj_bronson.cs.pdf)

In 2006 New Jersey Medical School (NJMS) reassessed its preventive medicine and public health curriculum, using the mandates outlined in the APTR Clinical Prevention and Population Health Curriculum Framework as a guide. As a result, NJMS created a mandatory 4th year clerkship to extend the preventive medicine and public health training of medical students specifically into the clinical years, in the context of multiple specialties. At the time of the assessment, NJ MS already had a comprehensive preclinical public health curriculum. That curriculum focuses on clinical nutrition, clinical prevention (i.e., recommended screening and lifestyle modifications), and biostatistics

and epidemiology (directed at understanding the medical literature). The new Preventive Medicine/Public Health Clerkship, as offered by the Department of Preventive Medicine and Community Health, consists of two-week clinical rotations created in collaboration with preceptors from a variety of clinical departments. The core curriculum includes seminars on paradigms in preventive medicine and public health, sentinel health events and surveillance, healthcare law and clinical practice, healthcare systems, and medical errors. Preceptors develop specialized curricula that focus on the clinical application of public health and preventive medicine concepts within their respective specialties, while incorporating and responding to the core concepts and topics discussed within the clerkship seminars.

This clerkship demonstrates that clinically-focused public health education is effective in increasing medical students' awareness of the clinical relevance of public health. This clerkship provides a necessary perspective for future doctors, and is an effective step towards improved training for medical students in population-based medicine. The course employs interactive case studies, lectures, clinical interactions, independent study, reading assignments, and student presentations. Evaluation and grading are based on direct observation and faculty evaluation of student presentations. Two-week Preventive Medicine/Public Health (PM/PH) clinical rotations across specialties were created, with goals and objectives specified by the Department (DPMCH), but designed in collaboration with clinical preceptors. A concentrated effort was made to identify preceptors from a wide variety of specialties, in order to provide students with opportunities to engage public health concepts in their areas of clinical interest. In accordance with LCME requirements for mandatory clerkships, a core curriculum for all clerkship sites was also developed:

- 1) An introductory lecture on important paradigms of preventive medicine and public health, as applicable to clinical medicine.
- 2) Four interactive seminars, as proposed by DPMCH faculty and correlating with the CPPH Framework: Sentinel health events and surveillance; Healthcare law and clinical practice; Comparative healthcare systems— models for healthcare delivery and their impact on outcomes and disparities; and Preventing medical errors – a systems approach. The interactive seminars allow students to learn through group discussion and feedback from peers and faculty.

Matching students to sites relevant to their clinical interests required the recruitment of public health practitioners from a wide variety of departments throughout the medical school, as well as at affiliated institutions. Preceptors developed curricula focused on the clinical application of public health and preventive medicine concepts within their specialties, while incorporating and responding to the core concepts and topics discussed within the clerkship seminars. In addition, preceptors guided their students in identifying sentinel health events and preparing presentations about them specific to their area of clinical practice.

## Nursing Education

### San Diego State University School of Nursing

[http://www.aptrweb.org/resource/resmgr/sp\\_nursing/sdsu\\_fitzsimmons\\_cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_nursing/sdsu_fitzsimmons_cs.pdf)

The College of Health and Human Services at San Diego State University (SDSU) established a partnership with Senior Community Centers in San Diego to support an interprofessional clinical site, the SDSU Clinic, based in a senior wellness center to train students to deliver health and wellness services. The College of Health and Human Services is composed of the Schools of Nursing; Social Work; Nutrition and Exercise Science; Speech, Language and Hearing Sciences; and the Graduate School of Public Health. The SDSU Adult-Gerontology nurse practitioner (NP) faculty envisioned opportunities for students to work with culturally diverse, low-income seniors with chronic health problems without the time constraints of the traditional primary care setting. The faculty spearheaded the plan for the delivery of healthcare services and contributed to the architectural design of the SDSU Clinic, taking into consideration the space needed for student learning.

In fall semester 2010, students from each School in the College began engaging in clinical or non-clinical activities at the SDSU Clinic. Services provided by students from the various disciplines in the College were components of courses and internships in their disciplines. The NP students and faculty provided health services weekly at the SDSU clinic and initiated referrals to other disciplines. Interdisciplinary conferences were held to discuss cases, share information, and to plan services.

The clinical services provided by NP faculty and students at the SDSU Clinic were part of the clinical coursework in the Adult-Gerontology NP curriculum and were partially supported by the instructional budget of the School of Nursing. The SDSU Clinic provided the environment for students to meet select competencies delineated in the Adult-Gerontology Primary Care Nurse Practitioner Competencies. For example, a Health Assessment Clinic

offered beginning NP students the opportunity to develop and refine their history and physical exam skills with seniors. In addition, faculty designed specialty clinics to offer NP students a chance to address high volume chronic health problems of seniors. Over the first year, approximately 350 NP student/senior health and wellness service encounters had occurred and clinical data entered into the wellness center's electronic database.

The SDSU NP faculty and students have embraced a model that fosters interprofessional collaboration and offers a clinical practice site that combines learning activities that meet student-learning needs with providing quality health and wellness services for seniors. The NP faculty has planned additional interprofessional learning activities with other disciplines and recognizes the value of the clinic for developing rich clinical practice and research opportunities to support doctoral education. The mutual benefits of the academic partnership with the community senior center make this a successful model for replication by other NP programs.

### **Southern Illinois University Edwardsville School of Nursing**

[www.aptrweb.org/resource/resmgr/sp\\_nursing/southernillinoisedwardsville.pdf](http://www.aptrweb.org/resource/resmgr/sp_nursing/southernillinoisedwardsville.pdf)

Students from SIUE Nursing School are required to produce a project in the community during their public health nursing clinical experiences. After performing the community assessment as a group assignment, the students create a collaborative plan with the community residents and local stakeholders that includes a mutually agreed upon timeline for implementation. This nursing student activity has resulted in a formalized resident and academic partnership named the Green Partnership.

Nursing students initially performed a Community Health Living Index (CHLI) assessment in order to implement a healthy lifestyle and activity program in a zip code. After meeting in the homes of residents, cleaning up trash and discarded tires which litter the city became a mutually agreed upon outcome. Working with other universities, nursing students participated in multi-disciplinary, community-based approaches to renovate an existing Jones Park greenhouse and to build raised growing beds. Eight months after the community garden opened, the vegetables, herbs and flowers were thriving and providing food sources and plants for residents to start their own gardens. Jones Park gardens provide resources to the residents for seeds, seedlings, plants, trees and garden coaching.

The Green Partnership grew from this activity and is engaged in health fairs, planting demonstrations, mentoring new gardeners, produce give-a-ways, and gardening education to children as well as providing produce to homeless shelters. The Green Partnership works with the East Side Health District, which serves as the public health department for East St. Louis. There, the Green Partnership sponsors the teaching garden and orchard located at the health department offices. Future plans include a teaching kitchen that will offer demonstrations on cooking, canning, freezing and drying produce. The Green Partnership engages the school systems by supporting gardens that serve as teaching environments for science, math, and biology classes in two schools. The schools use the produce for school lunches and snacks. Finally, the Green Partnership is involved with the public housing population through the development of five new gardens using "lasagna" gardening, in which layers of organic materials can be placed on top of any subsurface, including paving and contaminated soils. Additional gardens using discarded tires as planters provide beds for potatoes and carrots.

The Green Partnership has developed a five-year plan with annual goal achievement benchmarks. Classes now perform annual evaluations of these achievements, reassess the goals, and set benchmarks for the coming year. Quarterly strategic priorities are assigned to the students in nursing as well as to the community and collaborating universities that include the Urban Research Institute of Southern Illinois University Edwardsville, the University of Illinois Schools of Informatics and Urban Research, and social work students from Washington University. Key success factors are the students working in diverse populations while learning first-hand the barriers and obstacles impacting the population's health; creating trust and relationships in the community between residents and with academia that are "living partnerships"; resident involvement and awareness of the assessment; implementation of a viable program being done cooperatively with residents and not to them; advancing the concept of health literacy with social marketing that has created a sense of pride, ownership, and empowerment among the city's residents.

The public health nursing curriculum's clinical rotation was previously limited to visiting a Public Health department and rotating through the department's service offerings. Typically, a community assessment was completed during the course. Since implementation of this program, didactic curricula on Public Health core functions, population issues, and management have remained as before. Using the healthy communities approach has created a "living the theory" model and afforded deeper understanding and appreciation of the Healthy People 2020 objectives.

This program has expanded into the pediatric nursing curriculum. Within the SIUE academic community, it has increased collaboration with engineering, urban studies, student organizations and general university support. The program has expanded to include other universities in the St. Louis metro area. Students of social work, engineering, political science, business, architecture, horticulture, education, economic development and marketing are involved in the numerous components and work groups of the Green Partnership. The core community agencies involved include to date: the county and local health departments, school districts, city and park administration, school districts, universities, county water department, police departments, housing developments, faith-based organizations and local media outlets (newspapers, cable and network news outlets).

### **University of North Florida School of Nursing**

[www.unf.edu/brooks/nursing/undergraduate\\_programs.aspx](http://www.unf.edu/brooks/nursing/undergraduate_programs.aspx)

The undergraduate nursing program at the University of North Florida has a community-based, population-focused curriculum that integrates the principles of population health and community engagement throughout the undergraduate nursing program. The program has been in-place for ten years and is based on a community ecology model that encourages holistic thinking about the relationship of health to community development. Students enter the professional nursing component of the undergraduate program in the third year of their university career with prerequisite courses in basic statistics, psychology, sociology and the liberal arts. At the start of their five semester sequence of nursing courses they are introduced to their community home-base, the service-learning site for the duration of their undergraduate nursing program. Students are mentored throughout the five semester experience by two faculty members who remain with them for the duration of their service learning experience. The faculty members do not always have a public health nursing background, but do have strong interests in the community or may have an association with a community agency.

At the start of the experience students learn basic public health concepts in an introductory class and begin a community assessment in their community home-base. They are briefly introduced to public health nursing roles, family and community assessment, descriptive epidemiology, environmental health and transcultural nursing. Throughout the first four semesters, students plan, implement, and evaluate various community projects for at risk populations in cooperation with community stakeholders and faculty mentors. Their relationship with the community moves from development of familiarity with the people and place to a deepening level of engagement and commitment. Their projects focus on health promotion and illness prevention by providing screening, health education, resource development, referrals, and many more. Through these activities, population health concepts are threaded across the curriculum.

During the senior year of the baccalaureate program there is a 5 credit course that provides 2 credits of didactic content and 90 hours of public health nursing content. This course provides didactic content in epidemiology, policy and advocacy, health system organization and financing, and change theory. Students also complete community projects as part of this course sequence.

## **Pharmacy Education**

### **Albany College of Pharmacy**

[www.aptrweb.org/resource/resmgr/sp\\_pharmacy/albanyu\\_scarpace\\_cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_pharmacy/albanyu_scarpace_cs.pdf)

The Joint Commission of Pharmacy Practitioners Future Vision of Pharmacy Practice 2015 suggests that pharmacists will provide both "patient-centered and population-based care...and...promote health improvement, wellness, and disease prevention." Furthermore, the Accreditation Council for Pharmacy Education (ACPE) Standards and Guidelines 2007 include various aspects of public/population health competencies throughout their guidelines. Albany College of Pharmacy and Health Sciences (ACPHS) places an emphasis on real-time interaction with local public health organizations to provide students with real field experience in public health. In addition, our core group of community pharmacy-based faculty offers a "Well-Tip" program which includes various health screenings and promotion activities for the public at local pharmacies. Additional didactic coursework in wellness/preventive medicine includes elective courses in tobacco cessation; cancer screening, prevention, and early detection; and a required course in immunizations.

A 40-hour Introductory Pharmacy Practice Experience (IPPE) in Public Health is a required component of our professional curriculum and must be completed the summer following the students first professional year (P1). Students are required to take a 6-week Advanced Pharmacy Practice Experience (APPE) in Community Pharmacy that provides them the opportunity to participate in various "Well-Tips" initiatives. These initiatives include blood pressure screenings, education about cancer screenings, and other disease prevention services. Didactic

coursework in tobacco cessation, cancer screening, prevention and early detection and immunizations complement this community pharmacy experiential offering.

## Physician Assistant Education

### Touro University, CA

[www.aptrweb.org/resource/resmgr/sp\\_pa/tourou\\_ghebrekidan\\_cs.pdf](http://www.aptrweb.org/resource/resmgr/sp_pa/tourou_ghebrekidan_cs.pdf)

In September 2002 the Touro University, California – College of Education and Health Sciences (TU-C COHS) established a Joint MSPAS/MPH Program which sought to develop an integrated Medical and Public Health (PH) curriculum. Since its inception, the Joint Program has graduated seven cohorts of MSPAS/MPH graduates and is one of the first to have a mandated and integrated clinical and public health curriculum. The success of the program can be measured by the increasing number of applicants it attracts and survey data from applicants which indicate that an overwhelming percentage apply because of the joint degree program.

The uniqueness of the Joint Program is that it makes clear that together both disciplines yield better overall health outcomes for prevention and population health, as one discipline does not exist without the other. The philosophical approach of the Joint MSPAS/MPH Program is to train health professionals to understand that medicine and public health are complementary professions. More specifically, the MSPAS/MPH curriculum stresses that treating individuals and diseases is not sufficient. Clinicians must also address the root causes of disease as it relates to socio-economic factors, environmental conditions as well as other factors which directly affect the health of communities. The Joint Program is a collaboration of two programs, the Master of Science in Physician Assistant Studies and the Master of Public Health, which is based on firm interdisciplinary collaboration, and the integration of public health and clinical courses into one curriculum.

Instruction within the Public Health courses ensures that relevant clinical examples and case studies are included for Joint Program students. Likewise, the Physician Assistant curriculum promotes the public health framework throughout a number of clinical courses to reinforce the need to integrate public health and medicine.

Furthermore, faculty from the Public Health Program regularly lecture in certain PA courses, and four Physician Assistant faculty hold public health degrees and five Public Health faculties hold clinical degrees, all which helps to further highlight the relevancy of the integration within both disciplines.

Structurally, Phase 1 is delivered as a 32 month program (8 academic semesters). The first four semesters are didactic (pre-clinical) and clinical and public health coursework are completed concurrently. The clinical year includes 8 clinical rotations; students then return to campus for a final semester, which includes 1 public health field study, the physician assistant summative course and the culminating public health capstone course.

## Appendix D: Healthy People Curriculum Task Force Members

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### ALLIED HEALTH

Association of Schools of Allied Health Professions  
Washington, DC

**Kenneth L. Johnson, PhD, CHES**  
Dumke College of Health Professions  
Weber State University  
Ogden, UT

### ALLOPATHIC MEDICINE

Association of American Medical Colleges  
Washington, DC

**Malika Fair, MD, MPH**  
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### OSTEOPATHIC MEDICINE

American Association of Colleges of Osteopathic  
Medicine  
Chevy Chase, MD

**Stephen C. Shannon, DO, MPH**  
CEO  
**Luke H. Mortensen, PhD**  
Vice-president & Chairperson for Medical Education

### DENTISTRY

American Dental Education Association  
Washington, DC

**Vladimir W. Spolsky, DMD, MPH**  
UCLA School of Dentistry  
Division of Public Health and Community Dentistry  
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### NURSING

American Association of Colleges of Nursing  
Washington, DC

**Joan Stanley, PhD, RN, CRNP**  
Senior Director of Educational Policy  
**Mary A. Paterson, PhD, MSN**  
Project Director

### ADVANCED PRACTICE NURSING

National Organization of Nurse Practitioner  
Faculties  
Washington, DC

**Kathryn Werner, MPA**  
Executive Director  
**Kathryn Ellis, DNP, APRN, ANP-BC, FNP-BC**  
Georgetown University

### PHARMACY

American Association of Colleges of Pharmacy  
Alexandria, VA

**Will G. Lang, MPH**  
VP Policy and Advocacy

### PHYSICIAN ASSISTANTS

Physician Assistant Education Association  
Alexandria, VA

**Sara Fletcher, PhD**  
Chief Academic Officer  
**Rachel Hamann**  
Manager, Research

### TASK FORCE FACILITATORS

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**Rika Maeshiro, MD, MPH**  
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**Vera S. Cardinale, MPH**  
Director, Training and Education  
Association for Prevention Teaching and Research

**Allison L. Lewis**  
Executive Director  
Association for Prevention Teaching and Research

### RESOURCE ORGANIZATIONS

Community-Campus Partnerships for Health  
Seattle, WA

**Suzanne Cashman, ScD**  
University of Massachusetts Medical School  
Worcester, MA

Association of Schools and Programs of Public  
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Washington, DC  
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