

**AMERICAN COLLEGE OF PREVENTIVE MEDICINE**  
*with support from the Health Resources and Services Administration of  
the Department of Health and Human Services*

**CORE COMPETENCIES AND PERFORMANCE INDICATORS  
FOR PREVENTIVE MEDICINE RESIDENTS**

During the early 1990s, the American College of Preventive Medicine (ACPM), with support from the Health Resources and Services Administration (HRSA), identified core competencies and performance indicators (measures to assess their achievement) for all preventive medicine residents. After the competencies were approved, distributed by the ACPM and HRSA, and published in the *American Journal of Preventive Medicine*, they were integrated in various ways into the operation of individual residency programs. Changes in the health care system during the decade, however, necessitated an update of the original competencies to better equip preventive medicine educators to prepare residents for new roles those in preventive medicine can play in a restructured health care system. HRSA funded an effort to produce Version 2.0 of the preventive medicine competencies based on review and refinement of the original competencies through a consensus process. For the full articles, see *American Journal of Preventive Medicine* 1999; 16(4); 367-372 and *American Journal of Preventive Medicine* 1995; 11(1); 1-8.

Similarly, the American College of Occupational and Environmental Medicine (ACOEM) has developed and published competencies for the practice of occupational medicine ([www.acoem.org](http://www.acoem.org)). The Aerospace Medicine Association (AsMA) has been instrumental in development of competencies for aerospace medicine residents (contact AsMA at 703-739-2240).

The Core Competencies are stated in general terms so they can apply broadly to all programs. Each program can add more specific competencies that correspond to its particular training opportunities, resources and concentrations.

Competencies are stated in behavioral terms; they are intended to define what preventive medicine residents can DO as opposed to what they know or understand. The knowledge base has been previously defined through the American College of Preventive Medicine curriculum outlines.

These competencies are the outcome of an attempt to achieve consensus on skills to be expected of all preventive medicine residency graduates. They can help define our specialty to potential employers and applicants to our residencies as well as to our colleagues in other specialties. In addition, they can serve as a guide to faculty, preceptors, and residents in structuring practicum experiences.

The competencies are stated in terms of what should be expected of residents when they graduate. It is understood that residents may not have performed every competency at the level indicated while in training. These are recommended competencies and not requirements for

accreditation or certification.

We have used the term “**core competencies**” to denote those that are common to all preventive medicine residents regardless of their specialty area. The core competencies include both content area competencies, and those that cut across all the content areas. No priority order or ranking is intended between crosscutting and content area competencies; all are considered essential and part of the core.

Following each of the competencies is a selected list of **performance indicators**. These are categories of evidence to be used as a basis for judging achievement of the competency. They help to distinguish competent from incompetent performance. The performance indicators listed are only examples; the range of expected outcomes is so great and the indicators so varied that it would be impossible to identify an exhaustive list for each competency.

### ***COMPETENCIES THAT ARE COMMON TO ALL CORE CONTENT AREAS***

**1. Communicate to target groups, including health professionals, the public, and the media, in a clear and effective manner, both orally and in writing, the levels of risk from real or potential hazards, and the rationale for selected interventions.**

*Communication reflects:*

- a. in-depth understanding of the group to be addressed, including the group=s perception of risk
- b. current knowledge of subject and transmission of accurate information (i.e., factual correctness and statistical soundness)
- c. appropriate approach, methodology, format, messages, language, and audiovisual aids
- d. appropriate appearance and level of formality
- e. clear delivery and organization of material
- f. effective responses to audience questions and comments
- g. effective consensus building, direction, and call to action
- h. plans to evaluate outcome of communication
- i. preparation of materials for scholarly publications
- j. appropriate management of confidentiality issues.

**2. Demonstrate the ability to prioritize new or ongoing projects or programs according to their potential impact, as defined by objective, measurable criteria.**

*This reflects:*

- a. accurate statement of current knowledge about the problem
- b. sound design and methodology
- c. evidence-based assessment of outcomes
- d. development and use of appropriate prioritization model
- e. consideration of all articulated criteria, e.g.:
  - need for program
  - fit with organization=s jurisdiction, criteria, or mandate

- feasibility
- political realities
- resource constraints
- compatibility with goals of other relevant organizations
- absolute and relative costs in relation to benefits.

**3. Use information technology for specific applications relevant to preventive medicine and public health.**

- a. Given the organization=s options for automation, identify:
  - X appropriate and inappropriate uses for computers
  - X potential for networking and interface between system and user.
- b. Be able to use computers for each of the following:
  - X word processing
  - X communications through the Internet
  - X reference retrieval
  - X statistical analysis and computations
  - X graphics and spreadsheets
  - X database management.

**4. Interpret relevant laws and regulations relating to protection and promotion of the public=s health.**

*This reflects:*

- a. review of legislation of all relevant jurisdictions on a particular issue, identifying to whom responsibilities are authorized and whether resources for implementation are appropriated
- b. identification of need for statutes and regulations and the process by which they are developed
- c. identification and explanation of methods to assess laws and regulations germane to the resident=s assignment
- d. recommendation of courses of action when questions arise based on recognition of legal and regulatory options.

**5. Identify ethical, social, and cultural issues relating to policies, risks, research, and interventions in public health and preventive medicine contexts.**

*This reflects:*

- a. recognition of cultural diversity and its impact on community health issues
- b. determination of risk as it relates to ethnic and cultural identification
- c. development of a health program approach appropriate to and involving relevant groups that demonstrates awareness of:
  - organizational values
  - knowledge, attitudes, and behaviors related to health and disease
- d. recognition of ethical issues related to interventions (including issues relating to gender)
- e. conscientious use of human subjects review and informed consent, including sensitivity to individual rights.

**6. Identify the processes by which decisions are made within an organization or agency**

**and their points of influence.**

*This reflects:*

- a. identification of organizational structure and its relevance to the decision-making process
- b. identification of stakeholders and their interests
- c. determination of decision-makers and their influence, perspectives on the issues, and style of decision-making
- d. communication of findings to appropriate audiences.

**7. Identify and coordinate the integrated use of available resources to improve the community's health.**

*This reflects:*

- a. assessment of resources needed for a health program and methods to obtain resources not currently available
- b. development of a plan for the health program negotiating with community elements and groups, and using consensus building and a team approach
- c. coordination and implementation of the negotiated plan
- d. evaluation of health program outcome through use of predetermined measurable criteria.

## ***BIOSTATISTICS/EPIDEMIOLOGY***

**1. Characterize the health of a community.**

*This reflects:*

- a. assembly and review of existing data, including census, vital statistics, health care/public health, and law enforcement
- b. analysis and interpretation of information based on the above data
- c. validation and justification of methods, noting limitations
- d. review of relevant literature
- e. further investigation as needed
- f. reporting to community, including recommendations.

## **2. Design and conduct an epidemiologic study.**

*Study includes:*

- a. definition of problem
- b. collection and review of background information
- c. selection and application of appropriate data collection and management methods and biostatistical techniques
- d. implementation of protocol as designed
- e. interpretation of results
- f. identification of study limitations
- g. formulation and dissemination of conclusions and recommendations.

## **3. Design and operate a surveillance system.**

*Surveillance system reflects:*

- a. determination and documentation of rationale and feasibility of surveillance
- b. operational definition of case and identification of appropriate data sources
- c. use of appropriate surveillance tools (e.g., screening, lab reports, vital records)
- d. analysis and use of data generated
- e. evaluate the sensitivity and specificity of a surveillance system.

## **4. Select and describe limitations of appropriate statistical analyses as applied to a particular data set.**

*Description reflects:*

- a. identification and documentation of data set characteristics
- b. appropriate use of statistical methods.

## **5. Translate epidemiologic findings into a recommendation for a specific intervention to control a public health problem.**

*Recommendation reflects:*

- a. demonstration of critical review of literature on a specific preventive medicine issue
- b. identification of data on which findings were based
- c. application of epidemiologic principles
- d. identification of operational limitations and realities
- e. development of practical intervention strategies
- f. presentation of findings to decision-makers.

## **6. Design and/or conduct an outbreak and/or cluster investigation.**

*This reflects:*

- a. application of epidemiologic principles
- b. identification of unusual occurrences of disease, injury, or other adverse health conditions
- c. management of acute situation as appropriate
- d. recommendation of control measures

- e. communication of findings to appropriate audiences.

## ***MANAGEMENT AND ADMINISTRATION***

### **1. Assess data and formulate policy for a given health issue.**

*Policy reflects assessment of:*

- a. need
- b. interest of stakeholders (including but not limited to vested, public, and professional interest groups)
- c. current scientific evidence
- d. legal/regulatory requirements
- e. resource constraints
- f. costs and benefits.

### **2. Develop and implement a plan to address a specific health issue or problem.**

*Plan includes:*

- a. definition of issue or problem
- b. needs assessment
- c. goals and objectives with measurable outcomes
- d. well defined, realistic, measurable, and specific tasks and activities related to goals and objectives
- e. proper involvement and consultation with responsible parties including implementation authority
- f. accurate assessment of fiscal and personnel resources and time requirements
- g. marketing plan developed and incorporated
- h. evaluation strategy for the plan.

### **3. Conduct an evaluation or quality assessment based on process and outcome performance measures.**

*Evaluation reflects:*

- a. definition of appropriate performance measures to assess progress in achieving goals and objectives
- b. where indicated, performance measures relate to health status and are conducive to epidemiologic evaluation
- c. performance measures are compared before and after the implementation of a plan or intervention
- d. analysis should lead to meaningful conclusions and to recommendations for change, where indicated.

### **4. Manage the operation of a program or project, including human and fiscal resources.**

*This reflects appropriate use of:*

- a. organization documents (e.g. a table of organization) that specify responsibilities for accomplishing the program

- b. human resource management, including personnel job classifications needed
- c. budget management, including developing a line item budget that delineates human and other resources to be used
- d. milestone tracking system or work plan that specifies time allocated to accomplish the program as well as the results of the effort
- e. relationships between the organization and federal, state, and local public, private, and voluntary organizations with which the agency interacts.

### ***CLINICAL PREVENTIVE MEDICINE***

#### **1. Develop, implement, and refine screening programs for groups to identify risks for disease or injury, and opportunities to promote wellness.**

*Development/implementation/refinement reflect:*

- a. characterizing the population to identify target conditions
- b. assessing the utility of screening tools
- c. assessing the screening programs using WHO or similar standards
- d. assessing resources
- e. creating structures (clinic staffing, etc.)
- f. monitoring program effectiveness
- g. reporting results appropriately.

*(Competency is reflected by application of Clinical Preventive Services Task Force Guidelines and other recognized guidelines).*

#### **2. Design and implement clinical preventive services for individuals.**

*Design and implementation reflect:*

- a. conducting risk assessment
- b. providing screening and counseling services
- c. providing chemoprophylaxis (immunization, prophylaxis for TB).

#### **3. Implement community-based interventions to modify or eliminate identified risks for disease or injury and to promote wellness.**

*Implementation reflects:*

- a. characterizing the population to identify target conditions and effective interventions
- b. assessing the effectiveness of interventions, based upon behavioral, environmental, and occupational factors
- c. monitoring groups to implement interventions
- d. monitoring program effectiveness.

#### **4. Diagnose and manage diseases/injuries/conditions in which prevention plays a key role.**

*Diagnosing and managing reflect:*

- a. identification of diseases/injuries/conditions in which prevention plays a key role

- b. diagnosing diseases/injuries/conditions in which prevention plays a key role
- c. managing and referring diseases/injuries/conditions in which prevention plays a key role
- d. preventing and controlling exposures to diseases/injuries/conditions in which prevention lays a key role.

## ***OCCUPATIONAL AND ENVIRONMENTAL HEALTH***

### **1. Assess individual risk for occupational/environmental disorders using an occupational and environmental history.**

Competent assessment reflects:

- a. obtaining brief as well as comprehensive patient histories, accurately and with an emphasis on occupation and exposure
- b. recognizing the potential relationship between patient symptoms and occupational and environmental exposures
- c. identifying occupational/environmental illnesses and injuries with the appropriate use of consultants in related disciplines
- d. reporting findings to affected individuals and appropriate organizations, advocating for the health and safety of patients and employees, as well as the interests of employers and other stakeholders
- e. intervening to mitigate occupational and environmental risk, promoting health and safety of the patient, the workplace, and the community
- f. evaluating the effectiveness of prescribed interventions.

### **2. Identify occupational and environmental hazards, illness, and injuries in defined populations, and assess and respond to identified risks.**

*Identification and response reflect:*

- a. characterizing existing and potential occupational and environmental hazards within the defined population
- b. recognizing the health effects of toxic chemicals and other occupational and environmental exposures
- c. identifying sources and routes of environmental exposures, and recommending methods of reducing environmental risk
- d. evaluating the effectiveness of risk reduction methods
- e. utilizing occupational and environmental information resources to conduct a literature search or to res

## **MEDICAL MANAGEMENT COMPETENCIES AND PERFORMANCE INDICATORS**

Developed as part of HRSA/ACPM Update and Revision of  
Core Competencies for Preventive Medicine Residents, 1997

### ***Delivery of Health Care***

#### **1. Design, manage and evaluate health service delivery programs to improve the health of a defined population.**

This reflects demonstrated ability in:

- a. planning and implementation of strategies for health promotion, disease prevention, demand management (self care), and disease management in a health care organization.
- b. design, implementation, and evaluation of clinical practice guidelines, quality management/quality improvement programs, utilization management, case management, and other activities to enhance an organization's performance and reduce practice variation.
- c. evaluation of health service delivery through application of techniques such as process improvement, benchmarking, outcomes assessment, and clinical epidemiology.
- d. analysis of the impact of managed care (e.g., HMO, POS, PPO) and other health service delivery systems/reimbursement models (e.g., fee for service, third party payer, managed indemnity) on the health of defined populations, patient, payor and provider needs and behaviors, and organizational performance.
- e. use of marketing strategies to promote appropriate participation in a population-based health service, to alter patient, provider, or organizational behavior in order to improve health and the delivery of health services, and/or to support the development of health care products or services.
- f. use of systematically collected data to prioritize system problems, identify and implement best practices, continue to improve service delivery, and assure appropriate utilization of services.
- g. evaluation of the effectiveness, medical necessity, and appropriate use of products and interventions.
- h. design of systems of care that meet patient needs for access and acceptability, and measurement of patient satisfaction with these systems.

### ***Financial Management***

#### **2. Apply appropriate financial and business management techniques to assure efficient delivery of cost-effective health services.**

This reflects demonstrated ability in:

- a. critical interpretation of capitation and standard financial management reports and development of recommendations to enhance organizational effectiveness.
- b. use of techniques such as cost-effectiveness analysis, cost-benefit analysis, and decision analysis (including prioritization) to allocate and manage clinical and financial resources.
- c. preparation of a business and financial plan that incorporates basic accounting principles (e.g., analysis of balance sheet, income statements, proforma projections, statement of

cash flow), and techniques such as cost accounting, pricing of services, analysis of return on investment, market prediction and analysis, economic valuation of service to client and group, recognition of the need for capital formation and budget development to evaluate current or proposed health care products or services.

- d. assessment, negotiation, and management of provider contracts, including such issues as basis of payment (e.g., capitation, fee-for-service), risk-sharing, and reporting requirements.
- e. preparation of a strategic plan that analyzes the external environment (including competition and legislative regulatory changes), the internal environment (including staffing and ethical issues), and strengths, weaknesses, opportunities, and threats related to the success of the enterprise.
- f. analysis of insurance principles (e.g., adverse selection, law of large numbers, risk analysis, community/experience rating) and ways insurance benefits are packaged, priced and implemented to facilitate the provision of quality health care and avoid business problems.

### ***Organizational Management***

#### **3. Apply organizational principles to manage a health care organization or unit.**

This reflects demonstrated ability in:

- a. determination of management information needs and use of medical informatics, electronic health and patient care data, and management information systems.
- b. appropriate use of human resources management principles in selection, retention, promotion, motivation, appraisal, and discipline of employees; and in managing workforce diversity
- c. appropriate use of management principles in conflict resolution, negotiation, consensus building, problem solving, team building, and change management.
- d. effective leadership capabilities, including creation of a vision, development of a shared strategy, coordination of affected parties and resources, and communication with stakeholders.

### ***Legal and Ethical Considerations***

#### **4. Assure that health service activities reflect ethical standards, comply with all pertinent legal and regulatory requirements (e.g., ERISA, ADA), and incorporate risk management principles and practices.**

This reflects demonstrated ability in:

- a. identification and analysis of an ethical issue in a health care setting (e.g., access to bone marrow transplant) and effective communication of a recommended resolution.
- b. identification and analysis of a liability issue in a health care setting, and design and communication of a risk reduction strategy.
- c. incorporation of knowledge of statutes, regulations, case law, contract law, administrative law, and regulations and accreditation requirements in the operation of health care organizations in areas such as liability, restraint of trade, conflict of interest, privileging, credentialing, certification practices, confidentiality, discrimination, and unionism.

d. influencing state and federal legislative and regulatory processes toward the goal of creating or rew

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