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# Population-Based Public Health Practice

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*The health of individuals and our nation are dependent on public health practice. Population-based public health practice provides one paradigm that can influence the health of multiple communities within our nation. This chapter focuses on defining public health practice; describes a population-based approach; differentiates conceptually aggregate, community-based approaches and community-based care; defines community and community health practice; differentiates community and public health nursing practice; provides public health competencies; and concludes with a review of the levels of prevention.*

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## Introduction

Public health practice focuses on the prevention of disease and disability as a means of promoting the health of communities and their constituent members. The Healthy People 2010 agenda is a strategic public health plan that strives to promote the health of communities and community members (Department of Health and Human Services [DHHS], 2000). The national objectives proposed in Healthy People 2010 come at a pivotal point, a point of crisis, in public health practice. A landmark report by the Institute of Medicine (IOM) in 1988 stated that the public health system was in disarray, resulting from uncoordinated public health efforts, a weak public health infrastructure, and inconsistent goals and functions within the public health system. The report also notes that in addition to these problems, Americans continue to take the public health system for granted. Americans appear to take for granted public health issues such as communicable disease control, workplace safety, and environmental protection.

Some of the issues the public health system faces are changing population demographics, cultural tensions, resurgence of infectious diseases, emergence of new infections, and continued environmental hazards. The present state of the public health system and the national Healthy People

2010 objectives require a new paradigm for public health practice. In addition, multiple vulnerable populations exist that would benefit from a new public health practice paradigm of population-based practice. Population-based public health practice will be presented here as the public health practice paradigm for the next century.

## Public Health Practice

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Public health activity, the public health workforce, and the entire public health system provide the defining framework for public health practice (chapter 2 provides a further description of the public health workforce and public health system). Public health activities are implemented to prevent disease and disability, and this further defines public health practice (Table 1.1). Public health practice focuses on the health of aggregates or groups, family, or community. A key feature of public health practice is the acknowledgment that health is greater than the biological determinants of individual health; public health practice also embraces a host of behavioral, social, economic, and environmental factors that affect the health of a community.

Historically, Winslow (1923) defined public health as

the science and art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and the development of social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health. (p. 1)

Winslow's definition of public health continues to remain valid today. A recent definition of public health was provided in the landmark 1988 IOM report on our nation's public health. The IOM defines public health as "organized community efforts aimed at the prevention of disease and promotion of health" (p. 41). In this same report, the IOM describes public health as "what we, as a society, do collectively to assure the conditions in which people can be healthy" (p. 41).

Based on these historical and reputable definitions, public health practice will be defined in this book as those organized public health activities, provided by an educated and trained workforce, that are based on the integration of scientific evidence from biological, behavioral, social, environmental, and epidemiological sciences and are designed to promote health, prevent disease, and improve the quality of life of a population within an

**Table 1.1** Public Health Activities

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Surveillance and monitoring of the population's health status
Prevention and control of epidemics
Environmental and occupational protection: food, water, and workplace safety practices
Assurance of quality and accessibility of services
Disaster preparation and response
Public health research to develop innovative solutions
Community mobilization and development
Public health policy development

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SOURCE: Department of Health and Human Services (1994b).

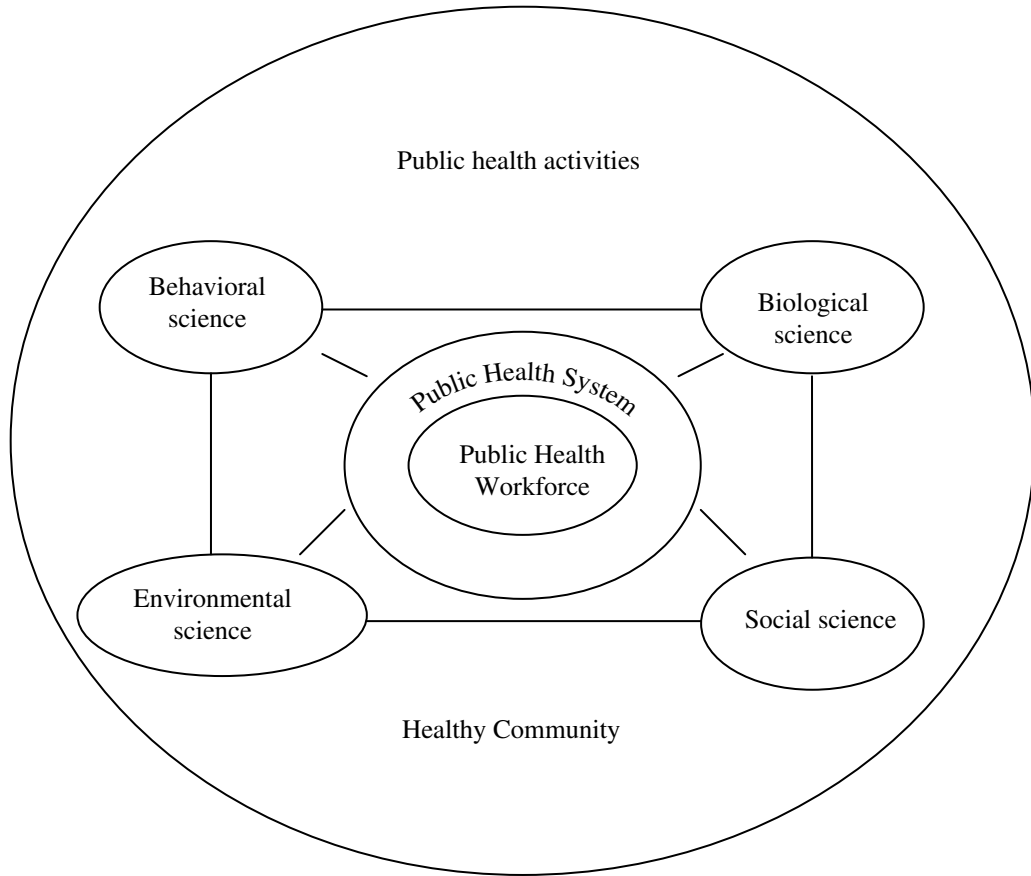
existing community (Figure 1.1). Public health practice is grounded in public health activities (Table 1.1) that are provided within an organized health-care system comprising multiple types of institutions, both public and private, that promote the health of a community.

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## The Population-Based Approach

The distinguishing attribute of community and public health practice when compared to medical practice is public health's central focus on the health of a population. The population-based approach uses a defined population (community) as the organizing principle for preventive action targeting the broad distribution of diseases and health determinants. Population-based principles use population-based data as the scientific basis for community level interventions (Novick, 2001; Thomas, 1999). Five principles that characterize the population-based approach are (a) a community perspective, (b) a clinical epidemiology perspective (using population-based data), (c) evidence-based practice, (d) an emphasis on effective outcomes, and (e) an emphasis on primary prevention (Ibrahim, Savitz, Carey, & Wagner, 2001; Novick, 2001). Another term, *population-focused care*, refers to a process that uses the population-based approach. Population-focused care is defined as interventions *aimed* at disease prevention and health promotion that shape a community's overall profile (DHHS, 1994a). For the purposes of this textbook, population-based care will be defined as *community-level interventions* that focus on health promotion and disease prevention activities that *influence the community's overall health profile*.

Community level interventions that affect the determinants of disease within an entire community rather than simply those of a single, high-risk individual are considered population-based interventions. Population-based and individual interventions are not exclusive but complementary strategies (Novick, 2001). The DHHS (1994a) described population-based public health services as interventions aimed at disease prevention and health promotion that shape a community's overall health status profile.



**Figure 1.1** Public Health Practice

Clearly, the population-based approach transcends the individual level. The population-based approach does not limit itself to the biological, environmental, and agent determinants of illness but includes as well lifestyle factors and health care organizations (as determinants), as well as other factors that contribute to health determinants. This is consistent with Rose's (1992) philosophy that a widespread problem must have a corresponding widespread intervention. The population-based approach is consistent with Rose's preventive medicine axiom: "A large number of people exposed to a small risk may generate many more cases than a small number exposed to a high risk" (p. 24). Therefore, a preventive strategy targeting only high-risk individuals may benefit these individuals—with little resultant effect on the total burden of a disease within a community.

## The Aggregate and Community-Based Approaches and Community-Based Care: Conceptual Differences

The focus of community or public health practice is the health of an entire community. To affect the health of an entire community, the public health nurse targets specific groups and designs interventions at multiple levels (individual, aggregate or group, family, and community). The manner in which the public health nurse identifies the target population, based on population-based data, determines the public health approach to the community: aggregate or community-based care.

An *aggregate* is a subgroup of the community population and is also referred to as a subpopulation. Any community consists of multiple aggregates. The manner in which the aggregate is identified determines the type of aggregate and, eventually, the type of community interventions planned. Community members can be grouped into simple aggregates based on demographic or geographic location; this is the least common type of aggregate used in community health practice. The most common aggregate type is the high-risk aggregate. A *high-risk aggregate* is a subgroup or subpopulation of the community that has a high-risk commonality among its members, such as risky lifestyle behaviors or high-risk health conditions (e.g., adolescent pregnancy). The aggregate concept is used in public health practice to target interventions to specific aggregates or subpopulations within a community.

The concepts of aggregate and community-based approaches and community-based care are different in their intended focus. An *aggregate approach* targets a specific subpopulation within the community. The *community-based approach* focuses the interventions on the entire community, using population-based data. In the community-based approach, interventions are designed to affect the health of an entire community at one time, such as fluoridation of an entire community's water supply. *Community-based care* is often confused with the community-based approach. Community-based care (also referred to as community-based practice) is the delivery of health-care services outside the typical institutional setting, but these services do not necessarily focus on the entire community (American Nurses Association [ANA], 1995). Community-based care is the delivery of health-care services within the community environment, services that target individuals and families. For example, an ambulatory clinic that provides acute episodic care to individuals strategically located within a geographical community is delivering community-based care. The services planned in this clinic may be based on the assessed health needs of individual community members, but they do not strive to affect the health of the community using community-level interventions; rather, these services provide individual-level care. The differentiating factor is the implementation of interventions that affect (a) the individual or family

(community-based care) or (b) the community's health (community-based approach). It is possible to deliver community-based care using a community-based approach, provided the public health interventions are community level, delivered in the community, and based on population data.

## Community and Community Health Practice

*Community* and *community health practice* are considered very elusive concepts. The focus of public health and community health practice is the health of a defined population, which is frequently described as a community. A community can be defined in terms of (a) common interest or characteristics, (b) geographical boundaries, or (c) a system (Helvie, 1998). An individual within a given population can be a member of several different communities at the same time, depending on the defining characteristics of the community. Additionally, depending on the type of community, community members may never have personal contact with each other.

Communities defined by common interest or characteristics may possess similar demographic variables such as age, race, gender, social class, or cultural identity. Communities defined by common interest or characteristics are frequently referred to as associative communities (Turnock, 2001). A geographical community is defined by physical geographic boundaries such as mountains, rivers, or interstates. Other geographical community boundaries are political in nature, such as a census tract or political region. A smaller subsystem or community sector that exists within the larger societal system can be the defining characteristic of a community. Systems that may be considered a community are transportation, emergency response (fire and police), health care, and education.

*Community health practice* focuses on a defined community and on the capacity of that community to achieve its health goals through effective use of community assets (Turnock, 2001). Community health practices recognize the importance of health determinants that are behavioral, social, and environmental in nature, in addition to the biological determinants of health. Community and public health nurses use community mobilization efforts, such as community engagement, community collaboration, and partnerships, to organize a community to work collectively for community health. Community health practice focuses on population-based problems (identified from population-based data), thereby using a population-based approach to influence the health of a community.

## Community Health and Public Health Nursing Practice

The Quad Council consists of four organizational constituents: the American Nurses Association (ANA), the Association of Community

Health Nurse Educators (ACHNE), the American Public Health Association (APHA), and the Association of State and Territorial District Nurses (ASTDN). The Quad Council defines the scope and standards of practice for each nursing specialty. Table 1.2 presents the respective definitions and standards for community health and public health nursing practice. The scope of practice and standards of practice for community health and public health nursing complement the definition of public health practice given earlier. ACHNE's Task Force on Community Health Nursing Education supports the title and definition of public health nursing by the Quad Council (ACHNE, 2000). Public health nursing practice is considered to include the core functions of public health: assessment, policy development, and assurance activities.

In addition to the Quad Council's definitions, the APHA Ad Hoc Committee on Public Health Nursing (1981) defined public health nursing as

the synthesis of the body of knowledge from the public health sciences and professional nursing theories for the purpose of improving the health of the entire community. This goal lies at the heart of primary prevention and health promotion and is the foundation of public health nursing practice. . . . Identifying subgroups (aggregates) within the population which are at high risk of illness, disability, or premature death, and directing resources toward these groups, is the most effective approach for accomplishing the goal of [public health nursing]. (p. 10)

Public health nursing has specific characteristics (e.g., a focus on public health activities), but it is viewed as a part of the broad area of community health nursing practice. Common characteristics of community and public health nursing are (a) provision of services to an entire population, (b) a focus on the promotion and preservation of health, and (c) care directed to community-level problems.

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## Public Health Competencies

Public health practice is dependent upon an educated, trained, and competent workforce. The public health workforce is composed of individuals from multiple disciplines and professions associated with health-care delivery. Each discipline and profession brings a specialized combination of knowledge, skill, abilities, perspectives, and competencies to public health practice. The diversity within the public health workforce adds to the richness of public health practice. However, there must be a clear correlation between these diverse sets of competencies in the public health workforce and the community needs. The 1988 IOM report calls for improvements in the training of public health professionals and an improvement of the linkage between academe and public health practice.

**Table I.2** Quad Council Definitions and Standards**Public Health Nursing****DEFINITION**

Public health nursing is the practice of promoting and protecting the health of populations using knowledge from nursing, social, and public health sciences (American Public Health Association, Public Health Nursing Section, 1996). Public health nursing is population-focused, community-oriented nursing practice. The goal of public health nursing is the prevention of disease and disability for all people through the creation of conditions in which people can be healthy (American Nurses Association, 1999).

**STANDARDS OF CARE**

The public health nurse standards of care focus on

1. Assessment of the population's health status using data, community resources identification, input from the population, and professional judgment.
2. Analysis of the assessment data collected in collaboration with community partners to attach meaning to that data and determine opportunities and needs.
3. Participation with community partners to identify expected outcomes in the populations and their health status.
4. Promotion and support of public health program development, policy development, and provision of services that include interventions that improve the health status of populations.
5. Assuring the population access and availability of programs, policies, resources, and services.
6. Evaluation of the population's health status.

**STANDARDS OF PROFESSIONAL PERFORMANCE**

According to the standards of professional performance, the public health nurse

1. Systematically evaluates the availability, accessibility, acceptability, quality, and effectiveness of nursing practice for the population.
2. Evaluates his or her own nursing practice in relation to professional practice standards and relevant statutes and regulations.
3. Acquires and maintains current knowledge and competence in public health nursing practice.
4. Establishes collegial partnerships when interacting with health-care practitioners and others and contributes to the professional development of peers, colleagues, and others.
5. Applies ethical standards in advocating for health and social policy and in delivery of public health programs to promote and preserve the health of the population.
6. Collaborates with the representatives of the population and other health and human service professionals and organizations in providing for and promoting the health of the population.
7. Uses research findings in practice.
8. Considers safety, effectiveness, and cost in the planning and delivery of public health services when using available resources, to ensure the maximum possible health benefit to the population.

(Continued)



**Table 1.2** (Continued)**Community Health Nursing****DEFINITION**

Community health nursing is a synthesis of nursing practice and public health practice, applied to promoting and preserving the health of populations. Health promotion, health maintenance, health education and management, coordination, and continuity of care are used in a holistic approach to the management of the health care of individuals, families, and groups in a community (American Nurses Association, 1986).

**STANDARDS**

Community health nurse standards of care focus on

1. The application of theoretical concepts as a basis for practice decisions.
2. The systematic collection of comprehensive and accurate data.
3. The analysis of community, family, and individual level data to determine diagnoses.
4. The development of plans to specify nursing actions unique to individual client needs based on the level of prevention.
5. Nursing plans developed to guide interventions that promote, maintain, or restore health; prevent illness; and effect rehabilitation.
6. Evaluation of community, family, and individuals' responses to interventions as a means of determining progress toward goal achievement and revising the database, diagnoses, and plan.
7. Participation in peer review and other means of evaluation to assure quality of nursing practice. The responsibility for professional development and professional growth of others is a responsibility of the nurse.
8. Collaboration with other health-care providers, professionals, and community representatives in the assessment, planning, implementation, and evaluation of community health programs.
9. Use of research as a means of contributing to theory and practice development in community health nursing.

SOURCE: American Nurses Association (1986, 1999), American Public Health Association, Public Health Nursing Section (1996).

As a measure to meet both of these objectives—improving public health workforce training and linking academic research and knowledge to public health—the Council on Linkages Between Academia and Public Health Practice was formed. The council comprises leaders from national organizations representing both public health practice and academic communities. The council's mission is “to improve public health practice and education by defining and implementing recommendations of the Public Health/Faculty/Agency Forum, establishing links between academia and the agencies of the public health community, and creating a process for continuing public health education throughout one's career” (Council on Linkages Between Academia and Public Health Practice, 2001). This mission is

consistent with the U.S. Public Health Service's efforts to implement certain components of *The Public Health Workforce: An Agenda for the 21st Century* report (Public Health Functions Project, 1997) pertaining to public health competencies.

The Council on Linkages adopted core competencies on April 11, 2001, for a 3-year period. These core competencies represent a set of skills, knowledge, and attitudes designed to transcend the boundaries of a specific discipline and ensure the delivery of essential public health services. The competencies are divided into eight domains:

- Analytic assessment skills
- Basic public health science skills
- Cultural competency skills
- Communication skills
- Community dimensions of practice skills
- Financial planning and management skills
- Leadership and system thinking skills
- Policy development and program planning skills

The skill or knowledge level (ranging from aware to knowledgeable to proficient) required for each competency is defined for frontline staff, senior-level staff, and supervisory and management staff. Appendix A presents the Council on Linkages Between Academia and Public Health Practice competencies for each domain. It is expected that all public health professionals should be aware of these core competencies, including public health nurses. Additionally, public health professionals should be educated and trained to ensure that they have the appropriate level of knowledge and skills that corresponds to their respective public health duties for each core competency (Council on Linkages Between Academia and Public Health Practice, 2001).

## **Prevention Levels:**

### **Primary Prevention and Health**

### **Promotion—A Public Health Focus**

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Public health practice focuses on altering the interaction of biologic, behavioral, social, cultural, and environmental determinants that would result in disease. Alterations in the interaction of these health determinants are based on planned public health interventions from population-based data. These public health interventions can be characterized as three levels—primary, secondary, and tertiary prevention. A major emphasis of public health practice that is aligned with public health goals is primary prevention. Primary prevention involves individual, aggregate or group, or community-level

**Table 1.3** Primary, Secondary and Tertiary Prevention Strategies**Primary Prevention Strategies**

- Health education and counseling—healthy lifestyle behaviors, exercise, stress management, nutrition, genetic, family
- Immunizations
- Adequate housing and employment opportunities
- Educational and recreational opportunities
- Environmental modifications and regulations—clean air and water, environmental sanitation
- Occupational hazard protection
- Injury prevention

**Secondary Prevention Strategies**

- Screening test and surveys
- Community assessments
- Case-finding activities
- Routine physical and mental exams
- Early medical treatment

**Tertiary Prevention Strategies**

- Effective and complete medical treatment
- Work therapy and workforce retraining and reeducation

interventions, based on population data, to promote and protect health (health promotion) and prevent disease (disease prevention). Health promotion and disease prevention are two different concepts. Health promotion consists of lifestyle-related activities designed to improve or maintain health. Disease prevention consists of those activities designed to prevent the development of disease or its related consequences (Thomas, 1999). Secondary prevention involves individual, aggregate or group, or community-level interventions, based on population data, to promote early detection and treatment of disease. After a disease state exists, tertiary interventions are directed at preventing disability through restoration of optimal functioning. Table 1.3 presents primary, secondary, and tertiary prevention strategies.

Each prevention level has a different impact on the status of diseases within a population. Primary prevention interventions prevent disease occurrence; therefore, the incidence rates of diseases within a population are reduced. Screening, testing, and treatment are secondary prevention strategies that result in earlier identification of cases of the disease and promote early treatment of disease; therefore, the prevalence rates of a disease within a population are reduced. Secondary prevention strategies strive to decrease a population's burden of a disease. Tertiary prevention strategies reduce the long-term complications and disabilities that result from a disease and also affect prevalence rates of disease within a population. Tertiary prevention strategies that promote quality of life but do not end the disease state can increase the prevalence rate of a disease within a population. Although tertiary prevention strategies do affect the individual's disease

burden, if they increase the disease burden within the community, more population-based services will be required.

Public health levels of prevention can also be related to medical practice. *Medical practice* is defined as the services provided under the direct supervision of a health-care provider, which can be divided into four service levels: population-based public health services, primary medical care, secondary medical care, and tertiary medical care. These levels of medical practice were developed independently from the levels of prevention, but they correlate with the levels of prevention (Turnock, 2001).

Population-based public health services consist of health promotion and disease prevention interventions that affect the health of an entire community. Population-based public health and medical practice are not mutually exclusive concepts. Population-based public health practice uses medical interventions to affect the health of an entire community. Primary prevention correlates with population-based public health practice. Primary medical care consists of medical services delivered at the first point of contact that includes clinical preventive services and ongoing care for common medical conditions. Primary medical care frequently encompasses primary, secondary, and tertiary levels of prevention. Secondary medical care consists of medical services requiring specialized treatment and ongoing management of common and less common medical conditions. Secondary medical care is correlated with secondary prevention (routine examinations or screenings and treatment of health conditions). Tertiary medical care consists of medical services that require highly specialized and technologically sophisticated medical and surgical care for unusual and complex medical conditions. Secondary and tertiary medical care are correlated with tertiary prevention (DHHS, 2000; Turnock, 2001).

## Summary

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Key issues in population-based public health practice are as follows.

- Public health practice focuses on the prevention of disease and disability as a means of promoting the health of communities and their constituent members.
- A key feature of public health practice is the acknowledgment that health is greater than the biological determinants of individual health. Public health practice also embraces a host of behavioral, social, economic, and environmental factors that affect the health of a community.
- Public health practice is defined as the organized public health activities that are (a) provided by an educated and trained workforce; (b) based on the integration of scientific evidence from biological,

behavioral, social, environmental, and epidemiological sciences; and (c) designed to promote health, prevent disease, and improve the quality of life of a population within an existing community.

- The population-based approach uses a defined population (community) as the organizing principle for preventive action that targets the broad distribution of diseases and health determinants.
- Five principles that characterize the population-based approach are (a) a community perspective, (b) a clinical epidemiology perspective (population-based data), (c) evidence-based practice, (d) emphasis on effective outcomes, and (e) emphasis on primary prevention.
- Community-level interventions that affect the determinants of disease within an entire community rather than those of a single high-risk individual are considered population-based interventions.
- An aggregate, also referred to as a subpopulation, is a subgroup of the community population.
- A high-risk aggregate is a subgroup of the community population that has a high-risk commonality among its members.
- The community-based approach focuses interventions on the entire community, using population-based data.
- Community-based care is the delivery of health-care services outside the typical institutional setting. These services do not necessarily focus on the entire community.
- A community can be defined in terms of (a) common interest or characteristics, (b) geographical boundaries, or (c) a system.
- Community health practice focuses on the capacity of a community to achieve its health goals through effective use of community assets.
- Common characteristics of community and public health nursing are (a) provision of services to an entire population, (b) a focus on the promotion and preservation of health, and (c) care directed to community-level problems.
- Public health competencies are divided into eight domains: (a) analytic assessment skills, (b) basic public health science skills, (c) cultural competency skills, (d) communication skills, (e) community dimensions of practice skills, (f) financial planning and management skills, (g) leadership and system thinking skills, and (h) policy development and program planning skills. The skill or knowledge level (aware, knowledgeable, proficient) required for each competency is defined for frontline staff, senior-level staff, and supervisory and management staff.
- Public health levels of prevention are primary, secondary, and tertiary.
- Medical practice has four service levels—population-based public health services, primary medical care, secondary medical care, and tertiary medical care—that are different from but relate to the levels of prevention.

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