5 CORE DISCIPLINES OF PUBLIC HEALTH

Public health professionals are involved in a wide range of initiatives, from conducting community outreach on health issues and reducing the impacts of climate change to creating school lunch programs and producing disaster readiness materials. Understanding what the core public health disciplines are is important not only to members of the general public who are seeking important public health resources but also to prospective public health students who are considering pursuing a career in this important field.

WHAT IS PUBLIC HEALTH?

Public health is a professional field devoted to preventing disease and increasing longevity among members of the public by using science and research to create organized public efforts that promote the health of individuals, organizations, and society as a whole.

- Public health efforts target all areas of human life, including workplaces, schools, recreation centers, and homes.
- Public health professionals serve in government agencies at all levels of government, nonprofit organizations, community groups, health advocacy and patient education organizations, research institutions, and schools.

5 PUBLIC HEALTH DISCIPLINES

Public health is a broad field that encompasses a number of speciality areas. There are five core disciplines of public health.

BIOSTATISTICS

Biostatistics is a mathematics specialization that focuses on using statistical methods to collect and analyze human health data. It sits at the nexus of big data, population studies, and public health.

Biostatisticians may use statistical data to understand, for example, the effectiveness of vaccines, the social components of disease progression, or the cost-benefit comparisons of disease reduction campaigns.

Work in biostatistics supports the following public health efforts:

- Clinical drug trials
- Health policy development
- Health trend analysis
- Medical study design
- Treatment efficacy measurement

EPIDEMIOLOGY

Epidemiology is the science of investigating the causes and trends of diseases and their spread within a population. Epidemiologists use rigorous scientific research and causal reasoning to understand the actions and circumstances that are related to a group's health.

Duties epidemiologists perform include:

- Data analysis and interpretation
- Disease tracking
- Public education
- Public health research
- Reporting and article writing

ENVIRONMENTAL HEALTH

The environmental health discipline within public health focuses on studying environmental risks, such as air pollution, water contamination, radiation, and chemicals, and how they affect the health of a population and of individuals.

Environmental health experts use this research to help prevent accidents and diseases, educate the public about mitigation efforts, and influence public policy.

As examples of the types of work environmental health professionals perform, here are the Centers for Disease Control and Prevention (CDC) Division of Environmental Health Science and Practice branches:

- Asthma and Air Quality
- Climate and Health Activity
- Emerging Environmental Hazards and Health Effects
- Environmental Public Health Tracking
- Lead Poisoning Prevention and Surveillance
- Water, Food, and Environmental Health Services

HEALTH POLICY AND MANAGEMENT

Health policy and management efforts within public health are centered on examining health care-related topics such as legal and ethical considerations, policy development, health care delivery oversight, and access to care concerns.

The World Health Organization (WHO) states that effective governance of health care systems ensures that a nation's health care services are "accessible, equitable, efficient, affordable, and high quality for all."

Health policy and management professionals work to establish and strengthen the health care-related relationships among the following:

- Communities
- Government entities
- Health care providers
- Health care system users
- Nongovernment organizations (NGOs)
- Nonprofit groups
- Other private sector groups

SOCIAL AND BEHAVIORAL SCIENCES

The social and behavioral sciences discipline within public health is concerned with looking at how cultural, social, and behavioral issues affect health system outcomes in communities.

Professionals working in this discipline take a multidisciplinary approach to understanding how public health policies and practices affect the health of a population or community.

Because of the discipline's broad approach, social and behavioral science professionals are involved in many aspects of public health, including:

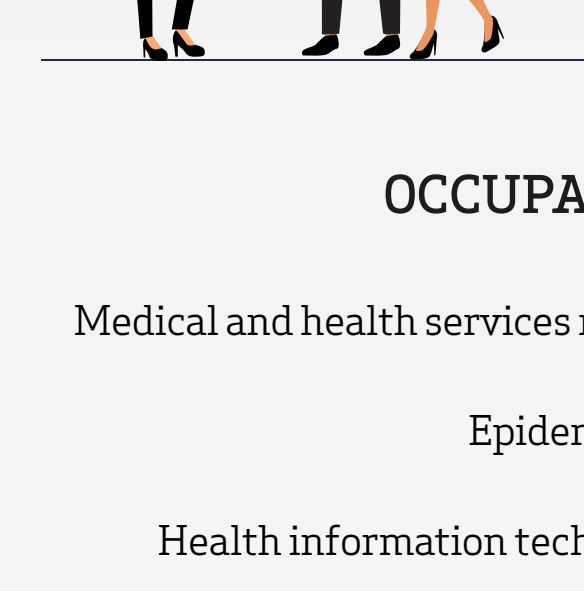
Researching factors that can lead to health disparities:
- Behavioral
- Clinical
- Contextual
- Individual

Studying processes that lead to discrepancies in health promotion and clinical decision-making:
- Environmental
- Institutional
- Social
- Structural
- Psychological

Creating programs to improve health outcomes:
- Increased access to health information
- Better connections between patients and providers
- Greater collaboration on health care decision-making

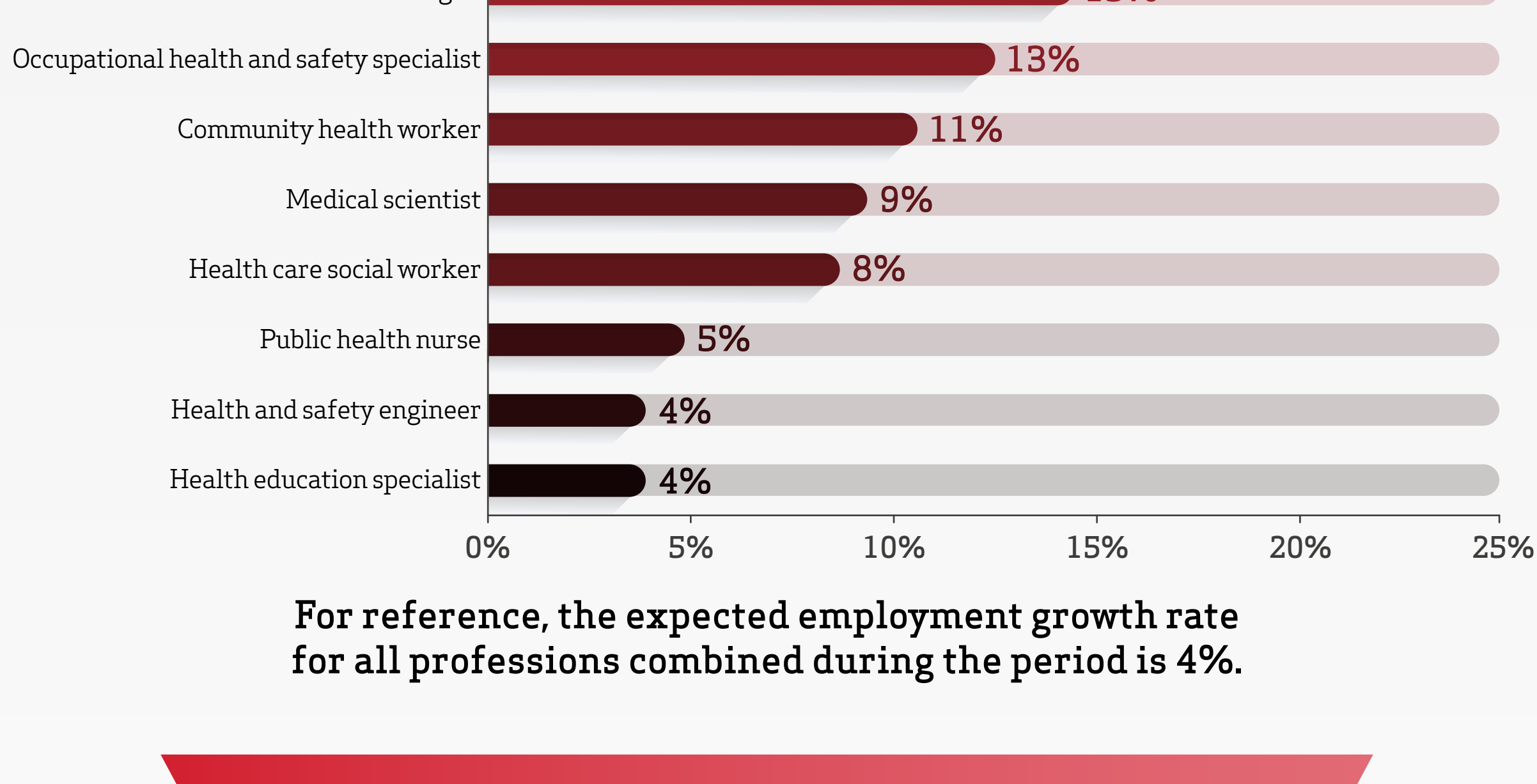
Global health is sometimes considered a sixth core discipline of public health. It takes a global view of health systems and the ways gaps and risk factors change among populations. Global health experts support international groups working to improve health care delivery and parity around the world.

PUBLIC HEALTH ROLES



Since the five core disciplines of public health cover such a broad range of areas, those who earn a degree in public health can choose from a variety of professional roles.

Here are just a few of the employment possibilities for individuals who earn a Master of Public Health (MPH) degree, along with the projected employment growth rate for each from the U.S. Bureau of Labor Statistics (BLS):



For reference, the expected employment growth rate for all professions combined during the period is 4%.

PUBLIC HEALTH HELPS ALL

Public health is an important and growing field that has myriad applications in areas that include mathematics, social work, education, and technology. With the rise in global travel, urbanization, and the effects of climate change, the risks for future pandemics and other multinational health events are increasing, which means the study and implementation of public health programs can help us all.

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