

Public Health

- **Public Health Careers At-a-Glance**
 - People who work in public health hold the common goal of improving the health of individuals and society by promoting healthy lifestyles, preventing injuries and disease, and controlling infectious diseases. They may be concerned with protecting and improving the health of a small community, or the entire planet. Job duties within the public health field can range from analyzing health statistics within a certain population to finding the cause of a disease and from educating children about proper hygiene to orchestrating a public service campaign.
- **Public Health Careers In-Depth**
 - The public health field implicates a wide variety of disciplines, many of them based on science, medicine or statistics. As a result, a high level of education is needed. The standard is a master's level degree, usually the Master of Public Health (MPH) or Master of Science in Public Health (MSPH). For careers based strongly on research, a master's degree will be a minimum, with a Doctor of Philosophy (PhD) the ideal. However, an advanced degree is not necessary to work in some areas of public health. For example, health educators need a bachelor's degree and community health workers may need only a high school diploma, certificate or associate degree.
- **Steps to Pursuing Public Health Degrees & Careers**
 - **Obtain a bachelor's degree in public health or a related concentration**
 - The bachelor's degree is the bare minimum for some public health professions. Depending on the college, there may be either a Bachelor of Science or a Bachelor of Arts degree in public health offered. Either one should give students a broad educational background in public health, allowing them to choose a master's program to fit their individual needs. Those who want to move on to higher degrees can start at the bachelor's level by using their elective choices to specialize in what they intend to pursue at the graduate level.
 - **Get a master's degree in public health**
 - The master's degree in public health (MPH) is typically a professional, practice-based degree that helps graduates assume leadership roles in a variety of public health settings at the local, state, federal and even international level. It may be offered as a Master of Science or a Master of Arts. The student will choose which of these to pursue based on future career plans. This degree is necessary for many jobs; epidemiologists, advanced health educators and health survey researchers will need a master's degree. The MPH and MSPH degrees are popular among those interested in an advanced public health degree.
 - **Gain work experience**

- This is especially important if a doctorate degree will be sought. Public health doctoral programs like to see applicants with prior relevant work experience. Ideally, a student will pursue pre-professional experience while earning a degree. Not only does this work experience provide for more well-rounded graduates, it improves the learning outcomes, as students will have the experience and knowledge to put their learning into perspective. Be sure to choose work experience that aligns with your ultimate career goals. For example, someone who wants to work in epidemiology should find work experience that includes field work and research in this area.
- **Go for the doctorate public health degree**
 - Medical scientists, advanced researchers or professors at the college or university level will almost always need a doctorate degree. And depending on the type of work, students will need to decide which type of doctorate degree to pursue. For example, the PhD is more tailored for those interested in teaching or research. Beyond that, students will typically be expected to choose a focus. Examples of public health doctorate concentrations include biostatistics, chronic disease epidemiology, environmental health and health policy and management.
- **Certificates & Degrees in Public Health**
 - **Certificates in Public Health**
 - The certificate program can be useful for those who need public health instruction, but don't need a full-fledged degree. The certificate typically takes less than six months to complete and is ideal for medical professionals who need a public health education. It's also great for those who want to enhance their opportunities for promotions and advancement. As an added bonus, credits earned in a certificate program can be used toward an eventual master's degree. Some classes a student may expect to take in a certificate program include:
 - Epidemiology
 - This course reviews the basics of disease patterns within a human population.
 - Skills Gained
 - Identification of statistical trends in medical data
 - How to apply new findings to actual health policy changes
 - Understanding the steps in studying a disease, such as origin and transmission methods
 - The United States Healthcare System
 - Students will be presented with an overview of the healthcare system in the United States, including history, current operations and future trends.
 - Skills Gained

- Familiarity with definitions and concepts within the healthcare system
 - Knowledge of medical policies and how they affect medical care for patients
 - Understanding why certain healthcare procedures and systems are established a particular way
 - Public Health Program Management
 - Management and leadership methods and principles for proper running of a public health program are taught in this class.
 - Skills Gained
 - How to monitor a public health program's effectiveness
 - Ability to assess the efficacy of a public health program
 - Understanding of evidence-based decision making methods commonly used in public health
- **Associate Degree in Public Health**
 - For those who want to start working in public health as soon as possible, the associate degree might be of interest. Not only can it be completed in about two years, it can prepare students to transfer to the bachelor's degree, taking their credits along with them. The associate degree provides a foundation for a future career in health promotion, health education and disease prevention. Even though some programs offer concentrations within the public health associate degree program, core courses taken may include:
 - Public Health Community Services
 - Underlying factors that play a role in the effectiveness of public health initiatives are examined in this class.
 - Skills Gained
 - Awareness of ethical and moral issues that may arise in public health programs
 - Familiarity with social and cultural influences on individual wellbeing
 - Understanding the relationship between human behavior and healthy living
 - Health Education
 - This course goes over the fundamental principles of a successful health education program or service.
 - Skills Gained
 - Delivery methods for providing health information to the general public
 - Understanding learning behavior

- Identification of different interaction strategies for connecting with the community
 - Health Intervention
 - After taking this course, students should be prepared to improve public health by using certain strategies and methods.
 - Skills Gained
 - Familiarity with various intervention strategies for improving public health
 - How to organize a public health initiative
 - Knowing the most effective outreach services to communicate with the general public
- **Bachelor's Degree in Public Health**
 - A bachelor's degree usually takes four years to complete and provides a solid and broad background of information and training in the public health discipline. In addition to allowing for a well-rounded education due to general education credits, the bachelor's degree serves as the basis for an entry level public health career or the first step in getting a graduate degree and working in a more advanced public health field.
 - Many public health programs offer opportunities for specialization within the public health field. Some options include public health delivery, healthy behavior and occupational and environmental health. Regardless of a concentration, students may expect to take some of the following courses:
 - Health Disparities
 - This course reviews the differences in health among various population groups based on sex, race, culture and other factors.
 - Skills Learned:
 - Ability to identify traits that may signify differences in health among a group of people
 - Knowledge of environmental and cultural factors that affect health
 - Application of different approaches to improving health after taking population characteristics into account
 - Biostatistics
 - This course teaches students to understand statistical principles and how they apply to the biological and medical field.
 - Skills Learned:
 - Knowledge of the differences between descriptive and inferential statistics

- How to interpret data using statistical software
 - Methods to confirm data validity and relevancy
 - Nutrition and Public Health
 - The role of diet and nutrition and how they affect public health are taught in this class.
 - Skills Learned:
 - Familiarity with common nutrition issues within the public health context
 - Knowing the effect nutrition and diet have on disease and overall health
 - Understanding the implications of diet on human development
- **Master's Degree in Public Health**
 - For those who want the best career options within the field, a master's degree is strongly recommended. There are several master's degrees available in public health, but the Master of Public Health (MPH) is the most common and takes about two years to complete. The MPH degree will not only provide additional knowledge and training on public health topics, it may also help prepare graduates for leadership and management roles within a public health organization or program. Some of the courses included in some MPH programs are listed below:
 - Public Health Biology
 - Students will learn about the biological and physiological processes that explain how diseases cause illness, are spread and can be treated.
 - Skills Learned:
 - Identification of disease traits that can help develop treatment programs
 - Knowing how diseases work to more effectively find ways to prevent their outbreak
 - Familiarity with various intervention techniques based on disease characteristics
 - Public Health Policy
 - This course considers various public health policies and their influence on addressing public health issues.
 - Skills Learned:
 - How to address public health problems that can be affected by a change in health policy
 - Application of numerous tools to assess a policy's effectiveness
 - Awareness of important public health policies and what changes may be needed
 - Health and the Environment

- The effect the environment plays on human health is examined in this class.
- Skills Learned:
 - Understanding the environment's role in human health and behavior
 - Familiarity with various chemical and biological factors that affect human health
 - Understanding how the physical environment and disease propagation are interrelated
- **PhD Degree in Public Health**
 - The PhD in public health is a terminal degree that can easily take over four years to complete. While the path to a PhD may be long, it allows graduates some of the widest range of public health career possibilities. For example, advanced research methods will be regularly utilized in a PhD program, which will prepare students for analyzing and conducting high-level research. The PhD may also allow graduates to teach at the college or university level. Other doctorate degrees in public health exist, such as Doctor of Public Health (DrPH) which is more suited for leadership and professional practice compared to a PhD.
 - Regardless of which doctorate is obtained, common classes doctoral students can expect to take include:
 - Research Methods and Design
 - Students will be exposed to conducting, interpreting and designing research at a very high level.
 - Skills Learned:
 - Knowing when to use different types of research philosophies
 - Familiarity with qualitative, quantitative and mixed-method research methods to effectively find ways to prevent their outbreak
 - Understanding how to apply research theories to real world questions
 - Health Informatics
 - This class will address the use of computer information systems in healthcare.
 - Skills Learned:
 - Awareness of types of computer information technology and their application to public health
 - Understanding the effect electronic medical records, health information exchange and other electronic technology has on the delivery of healthcare
 - Ability to anticipate future trends in technology and how they can be applied to public health

- Secondary Data Advanced Analysis
 - This class looks at advanced statistics analysis from secondary data sources.
 - Skills Learned:
 - Knowing how to effectively analyze secondary data to obtain useful conclusions
 - Awareness of limitations of using secondary data
 - Familiarity with using secondary and biomedical data in research
- **Career Paths in Public Health**
 - The Centers for Disease Control and Prevention defines public health as, “... the science of protecting and improving the health of families and communities through promotion of healthy lifestyles, research for disease and injury prevention and detection and control of infectious diseases.” For anyone thinking about entering the public health profession, this also means there is a generous selection career options, each with its own education, training and work experience requirements. The list below outlines some of the most popular career choices in public health and what’s needed to make them happen:
 - **Dietitian and Nutritionist**
 - Dietitians and Nutritionists work with clients to evaluate their health and, based on their findings, make recommendations on diet planning and which foods to eat in order to overcome specific diet-related issues and/or improve the client’s overall health. They often work in conjunction with physicians and health care staff to develop nutritional plans and dietary restrictions for specific patients. Dietitians and Nutritionists work in a number of settings including hospitals, neighborhood clinics, assisted living facilities and in private practice. They may be directly involved in the monitoring or supervision of food service operations to ensure that they meet quality, safety and sanitation regulations and standards.
 - Education requirements
 - Most Dietitian and Nutritionist positions require a bachelor’s degree in nutrition, dietetics, food services management or related field. Many Dietitians and Nutritionists, particularly those who wish to advance to supervisory positions, will go on to earn an advanced degree. Additionally, most states require some form of licensure or certification.
 - **Emergency Management Specialist**
 - Emergency Management Specialists are those professionals responsible for both planning for preparedness training and emergency response training prior to an emergency or disaster event, and for coordinating crisis management and disaster

response during an emergency or disaster event. Emergency Management Specialists must have strong organizational and communication skills in order to manage and coordinate the efforts of emergency response teams that include firefighters, paramedics, police officers and others, as well as work effectively under pressure during disaster events. Additionally, Emergency Management Specialists must keep abreast of emergency preparedness programs and facilities, and ensure that all local, state and federal regulations concerning emergency preparedness are followed at all times.

- Education requirements
 - Educational requirements for Emergency Management Specialists can vary greatly depending on the specific job and its requirements. However, most positions require a bachelor's degree in emergency management, public safety or a closely related field, as well as two to five years of emergency management experience.
- **Epidemiologist**
 - An Epidemiologist is a professional who researches and investigates the causes and patterns of diseases, particularly communicable diseases, in human beings in order to eliminate or reduce their negative impacts. Epidemiologists plan and conduct studies on specific public health issues, collect and analyze data to locate the causes of diseases and other health related issues. There are two general areas in which Epidemiologists are employed: research epidemiology and applied epidemiology. Research Epidemiologists typically work for universities or in connection with federal agencies (like the CDC). Applied Epidemiologists are commonly employed by state and local government agencies working directly with the public through education programs and by conducting surveys on relevant public health issues.
 - Education requirements
 - Epidemiologists must earn a master's degree in epidemiology, public health or other closely related subject. A Ph.D. is typically required for those individuals whose goal is to direct research projects and/or teach at the postsecondary level.
- **Health Educators and Community Health Workers**
 - The primary responsibility of Health Educators and Community Health Workers is to teach individuals in the community about health and wellness issues in order to improve overall wellbeing. Public Health Educators create and present education programs and events for their communities, provide training for health care

workers and other health professionals, advocate for improved health resources and more. Community Health Workers must have a solid understanding of their community's unique health problems and issues in order to effectively counsel individuals about those concerns, as well as report their findings to health educators and professionals to better serve community health needs.

- Education requirements
 - Working as a Health Educator will require a bachelor's degree in health education or health promotion. Additionally, some employers require their employees to hold the Certified Health Education Specialist (CHES) credential. Community Health Workers may find employment with just a high school diploma, but may also be required to attain some level of postsecondary education in a one-year certificate or two-year associate's degree program in the field.

▪ **Microbiologist**

- Microbiologists study organisms that are too small to be seen with the naked eye to better understand their nature, how they grow and how they interact with other organisms, like human beings. These microorganisms come in the form of viruses, bacteria, algae, fungi and parasites, many of which can be infectious to humans. Microbiologists working in the field of public health plan and conduct research on microorganisms aimed at developing drugs to fight infectious diseases. They are also employed in creating and developing genetically engineered crops and higher quality biofuels. In the course of their research, Microbiologists often work with scientists from a range of disciplines, as well as supervise the work of technicians and other staff members.
- Education requirements
 - At minimum, a prospective Microbiologist will need to earn a bachelor's degree in microbiology or closely related subject. It is essential for bachelor's degree holders to have obtained a substantial amount of laboratory experience before seeking a job in the field. A graduate degree, specifically a Ph.D. with work in a specialized area of microbiology, will be required for anyone intending to conduct independent research at a college or university.

▪ **Occupational Health and Safety Specialist**

- Occupational Health and Safety Specialists are concerned with identifying and analyzing health and safety conditions in the workplace, with the ultimate goal of eliminating hazards that result in occupational illnesses and injuries. Job tasks for Occupational

Health and Safety Specialists include inspection of workplaces to determine adherence to safety rules and regulations, designing and implementing workplace processes and procedures aimed at improving working conditions, investigating accidents and incidents to determine cause and to find solutions to prevent future accidents and hazards, and conducting education and training programs on health and safety-related subjects such as emergency preparedness.

- Education requirements
 - A bachelor's degree in occupational safety, occupational health, or a related field such as biology or engineering, is commonly required for employment as an Occupational Health and Safety Specialist. Some areas of the profession, such as health physics or industrial hygiene, may require a master's degree.
- **Public Health Nurse**
 - Public health nursing is a specialized area of nursing that is, not surprisingly, focused on public health. A Public Health Nurse works within a community to improve the overall health of its members. The emphasis is on understanding the unique needs of a discrete "community" as opposed to the individual patient. The community can be defined geographically, but also by non-geographical factors. Examples include, women, children, ethnic groups, as well as groups with a particular health issue, such as HIV/Aids. Public Health Nurses typically work for government agencies or large private health organizations, providing educational and advocacy services to at-risk individuals and groups.
 - Education requirements
 - Employment as a Public Health Nurse typically requires becoming a registered nurse, which in turn requires completing one of three education paths: a bachelor's degree in nursing; an associate's degree in nursing; or a diploma from an accredited nursing program. Becoming an RN additionally requires obtaining licensure.
- **Social and Community Service Managers**
 - Social and Community Service Managers organize and supervise community and social service and health programs. In their supervisory capacity, Social and Community Service Managers recruit and train new staff members, and supervise staff and others who provide direct service to clients. They are also called upon to write funding proposals and prepare reports to provide evidence of justification for continued sponsorship of their programs. Social

and Community Service Managers may work for government agencies, but most often are employed by non-profit organizations. Their work may involve a general demographic or be focused on a particular group such as children, seniors, the homeless, veterans or the handicapped.

- Education requirements
 - A bachelor's degree in social work, public administration or related field is normally the minimal requirement for employment as a Social or Community Service Manager. Some employers, especially larger governmental agencies or non-profit organizations, may require an MBA or master's degree in a public health or services-related field.