

What is Public Health?

The many factors that contribute to disease and health, or *determinants*, are complex and often break down to genetic, environmental and lifestyle factors. In addition Public Health is a multi-disciplinary enterprise that requires expertise in biology, pathology, environmental science, sociology, psychology, government, medicine, statistics, communication, and more to truly understand.

Someone who is overweight and smokes might require a expensive heart surgery to prolong their life. However, public health is about the interventions that prevent disease from occurring in the first place, so the benefits tend to be less obvious. The prevention of disease not only prolongs life, but improves the quality of life. In a sense public health is the epidemic that didn't happen, or the heart disease that didn't developed. Successful public health is the sum of the adverse health outcomes that never occurred.

Learning Objectives:

1. List and describe the three core functions of public health
2. Expand on the three core functions of public health and discuss how they relate to the 10 essential functions of public health
3. Define and give examples of primary, secondary, and tertiary prevention of disease
4. Discuss modern concepts of population health
5. Briefly explain how "Public Health 3.0" differs from earlier approaches.
6. Explain the rationale and approach of Health Impact in 5 Years (HI-5)
7. Outline the overall structure of global public health
8. Outline the overall structure of US public health

Primary, Secondary, and Tertiary Prevention

The goal of primary prevention is to prevent healthy people from becoming ill. While that sounds easy, it often creates ethical conflicts when healthy people are asked to take additional steps to prevent developing disease (i.e. vaccination, exercise, smoking).

Secondary prevention consists of screening for disease in order to find sub-clinical disease and treat it in the hope that earlier treatment will provide reduced harm or cure (e.i. cancer screening, blood pressure test for hypertension, routine urine and blood analysis).

Once an individual has been diagnosed and treated for a disease, subsequent efforts to reduce effects are regarded as tertiary prevention (i.e. cardiac rehabilitation after a heart attack, exercise and weight loss for people who developed type 2 diabetes).

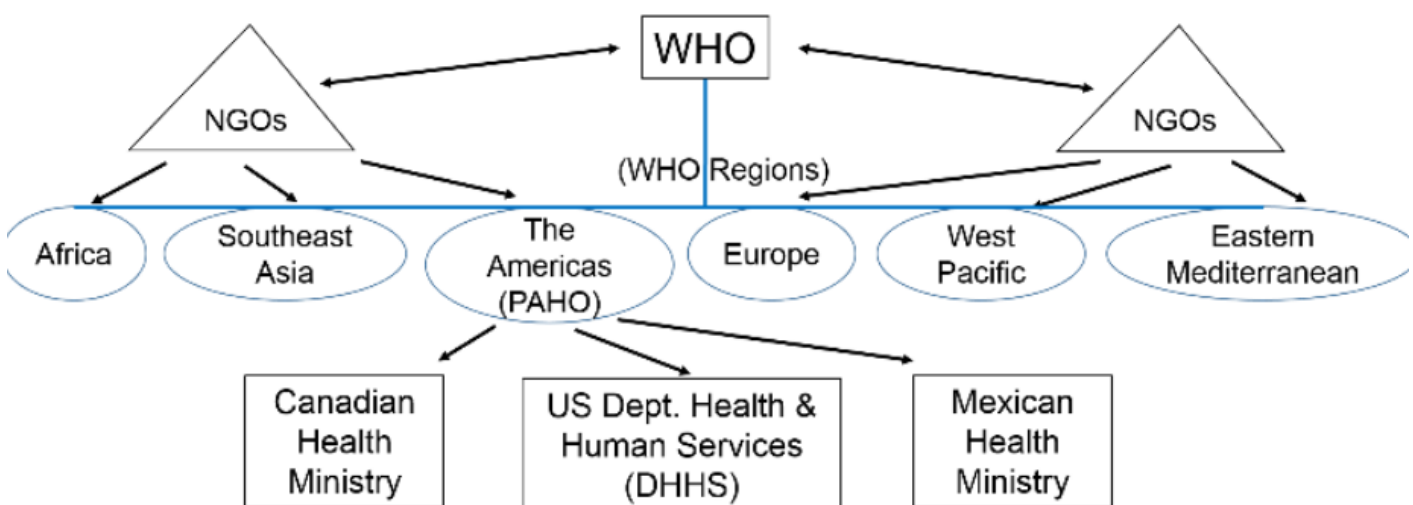
International Public Health Organizations

The World Health Organization (WHO) was created in 1948 by the UN as the global health authority that would coordinate and guide health policy, practice, research, and surveillance in participating countries. The headquarters is located in Geneva, Switzerland. The director general is appointed by the World Health assembly which consists of representatives from participating countries.

The core functions of the World Health Organization are:

1. Providing leadership on matters critical to health and engaging in partnerships where joint action is needed.
2. Shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge.
3. Setting norms and standards and promoting and monitoring their implementation.
4. Articulating ethical and evidence-based policy options
5. Providing technical support, catalyzing change, and building sustainable institutional capacity.
6. Monitoring the health situation and assessing health needs.

The WHO oversees 6 regions and each of these interacts with the national public health agencies of its member nations.



Non-Governmental Organizations (NGOs)

NGOs are private organizations that are not part of a particular government, though they often partner with governmental or inter-governmental organizations. They can be supported by public or private funding, and thus may be supported by government but not governed by them. NGOs are important to countries to provide programs to countries that do not have them such as HIV prevention, clean water allocation, and disaster relief. Ex. Red Cross, CARE for Europe.

Public Health in the US

In some respect Winslow's definition of public health is still correct today but in the US the focus has shifted over the last several decades.

In 1988 The institute of Medicine issued a report entitled "The Future of Public Health" which concluded the US public health system needed refocusing because there was a lack of clarity regarding its roles and responsibilities. The report introduced the concept of three core functions:

1. Assessment - Assessing needs of communities by collecting statistics and information related to the community's health needs. Assessment also means identifying the sources of health problems and the determinants of health and disease.
2. Policy Development - Prioritizing public health needs, advocating for public health, building constituencies and coalitions and pursuing the enactment of policies and laws that promote health.
3. Assurance - Establishing and maintaining an infrastructure for public health and implementing programs to monitor the effectiveness of public health interventions. Assurance also requires effective communication of public health information to the general public.

In 1994 the CDC expanded the 3 core functions and identified 10 essential services which should be undertaken in all communities, regardless of size:

1. Monitor health status to identify and solve community health problems
2. Diagnose and investigate health problems and health hazards in the community
3. Inform, educate, and empower people about health issues
4. Mobilize community partnerships and action to identify and solve health problems
5. Develop policies and plans that support individual and community health efforts
6. Enforce laws and regulations that protect health and ensure safety
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable

8. Assure competent public and personal health care workers
9. Evaluate effectiveness, accessibility and quality of personal and population-based health services
10. Research for new insights and innovative solutions to health problems

In 2002 the Institute of Medicine titled "Who Will Keep the Public Healthy?", which concluded public health professionals must have a framework for action and an understanding of the forces that impact health.

Population Health

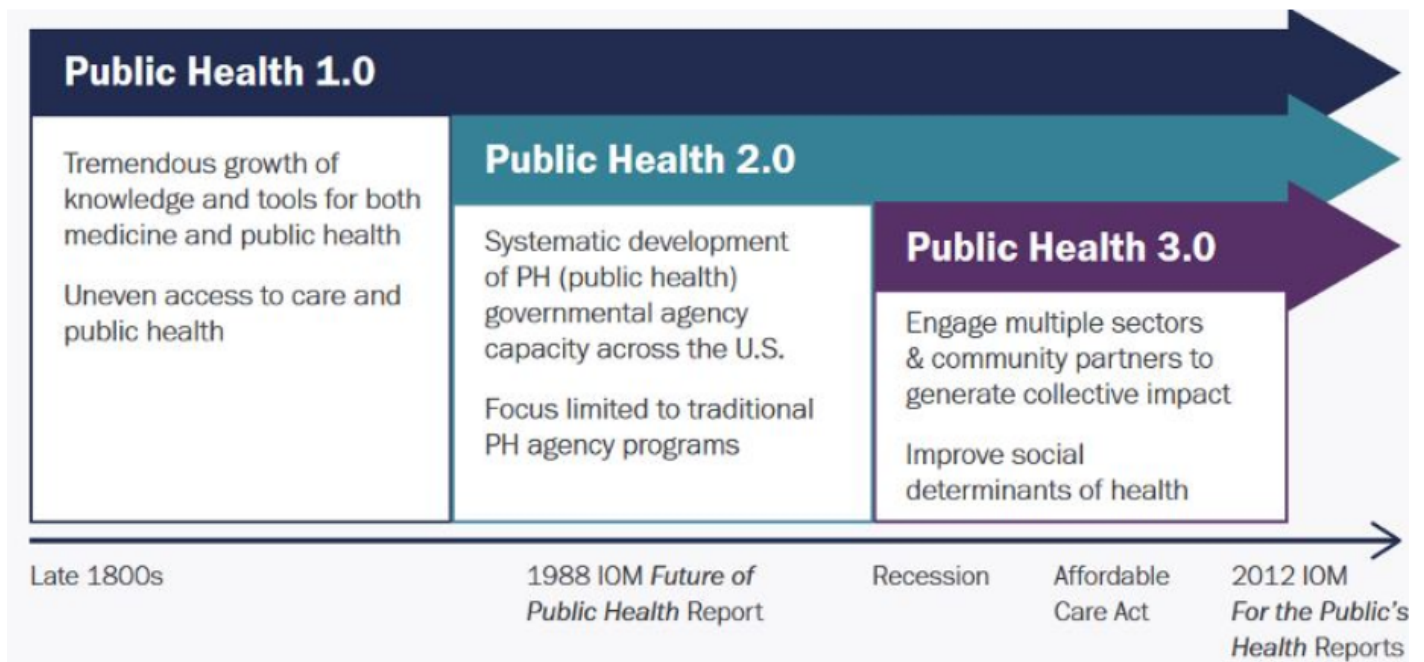
The final decades of the 20th century placed heavy emphasis on individual responsibility for health and behavior modification. The newer definition by the CDC reflects a shift to population health. This shift was brought on by the recognition of the social determinants of health and acknowledgement of effective strategies to make communities safer and healthier. Other factors were threat of bio-terrorism, disparities in healthcare. During the 20th century, Winslow's definition of public health focused mainly on physical health of a geographical region, but this has been redefined in the 21st century to conciser mental health and envision populations not only geographically but by needs (the mentally ill, poor, those with HIV, etc).

Population health might include:

1. Healthcare - Delivery of 1 on 1 screening, prevention, cure and rehabilitation
2. Traditional public health - Surveillance, control of infection of disease and environmental hazards, food and drug safety, education to public, and behavior modification
3. Social intervention - improvements to the environment, better access to healthy food, community safety and reduction in disparities.

Public Health 3.0

The birth and evolution of public health during the enlightenment is identified by the US Health and Human services separates into 3 eras:



Public Health 1.0 - Modernized by the invention of vaccine, antibiotics, development of epidemiology, and advances in biological sciences. Led to advances in sanitation in safety.

Public Health 2.0 - Spurred by 1988 and 2002 report by National Institute of Medicine papers regarding the governments inability to act on mental health issues and HIV. The ability to cope with these problems were made worse during the budget cuts in the great recession (2008)

Public Health 3.0 - Innovative ideas on improving environmental factors in communities. Requires collective action and inter-organizational cooperation. In many communities the local health officer will take the role of Chief Health Strategist who guides community efforts and analyzes data mathematically to determine if best response has been enacted.

Health Impact in 5 Years

Achieving lasting impact on health outcomes requires a focus on community wide approaches to improve population health. Programs that address the conditions where we work and live. By changing the context that make healthy choices easier we can improve the health for everyone. The health impact in 5 years initiative highlights non-clinical community-wide approaches that have evidence reporting:

1. Positive health impacts
2. Results within 5 years
3. Cost effectiveness or cost savings

The public health impact pyramid shows the potential impact of public health interventions.



The base of the pyramid has the interventions that have the greatest potential for impact on public health. They reach entire populations at once and require less individual effort. The HI-5 initiative maps to the bottom 2 tiers of the pyramid with greatest potential which are often hardest to implement, and the most obvious aspect at the top.

Social determinants have an enormous impact on health across the globe, solving problems like poverty, ignorance, nutrition, housing and sanitation. But these are complicated problems with no meaningful solution. Although counseling people on their behaviors tend to have the smallest impact, however it is the easiest to accomplish.

Public Health Structure

Unlike some countries, the US constitution does not explicitly establish a structure for provision of public health. However Congress has the power to levy funds to public health services. On a federal level, the US Department of Health and Human Services is responsible for protecting the health and well-being of all Americans by providing effective health and human services, and fostering advances in medicine and public health.

His Strategic Plan describes HHS's efforts within the context of five broad strategic goals:

Strategic Goal 1: Protect and Strengthen Equitable Access to High Quality and Affordable Healthcare

Strategic Goal 2: Safeguard and Improve National and Global Health Conditions and Outcomes

Strategic Goal 3: Strengthen Social Well-being, Equity, and Economic Resilience

Strategic Goal 4: Restore Trust and Accelerate Advancements in Science and Research for All

Strategic Goal 5: Advance Strategic Management to Build Trust, Transparency, and Accountability

Healthy People

Healthy people provides science-based 10-year national objectives for improving the health of all Americans. For 3 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
- Measure the impact of prevention activities

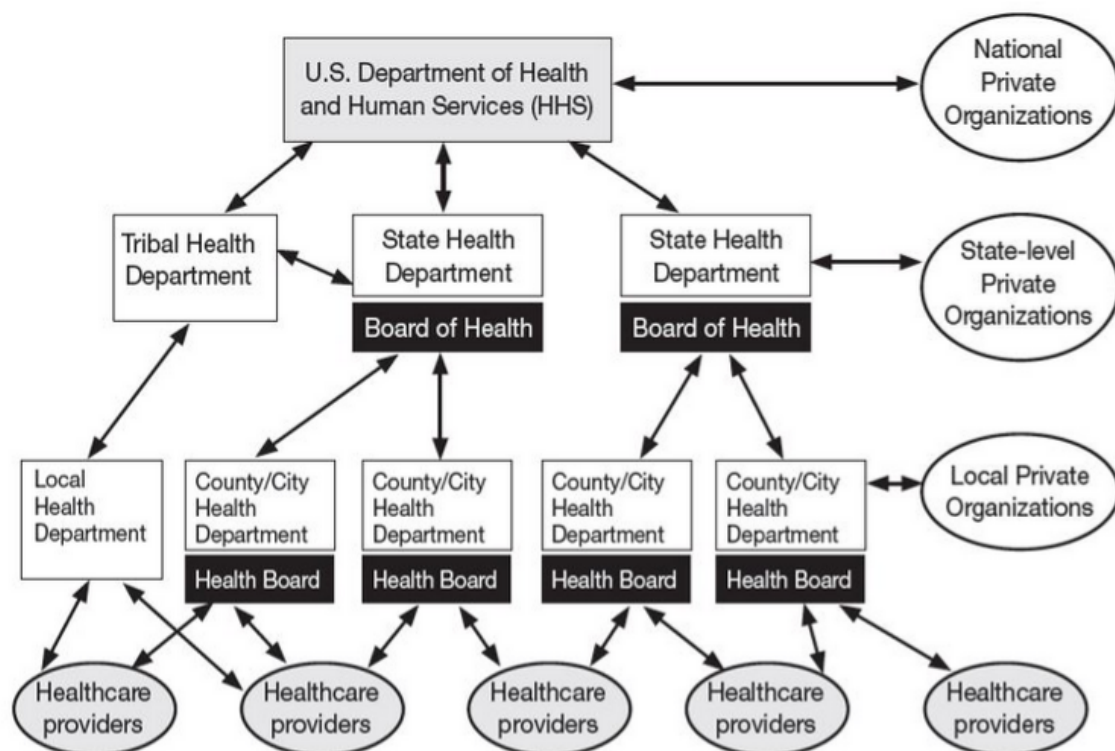
Healthy People periodically sets 10 year agenda of goals for improving health in the US. Healthy People 2020 strives to:

- Identify nationwide health improvement priorities
- Increase public awareness and understanding of the determinants of health disease and disability and opportunity for progress

- Provide measurable objectives and goals that are applicable at the national, state, and local levels.
- Engage multiple sectors to take actions to strengthen policies and improve practices that are driven by the best available evidence and knowledge
- Identify critical research, evaluation and data collection needs

Police Power

Powers that are not specifically given to the federal government are retained by the states and referred to as *police power*. It allows each state to enact laws for the welfare to its citizens. Federal health laws supersede state laws, but in absence of federal law, states enact their own. Similarly, state laws take precedent over local laws. There is still significant interaction between HHS and state departments as well as national and state level organizations.



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