

# INTRODUCTION to PUBLIC HEALTH

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*"...public health promotes and protects the health of people and the communities where they live, learn, work, and play."*

# Learning Objectives

**At the end of this course, you will be able to :**

- *Define «Public Health» as an essential medical discipline*
- describe the main purposes of Public Health
- *define key terms used in Public Health*
- identify prominent events in the history of Public Health
- *recognize the core Public Health functions and services*
- describe the role of different stakeholders in the field of Public Health
- *list determinants of health*
- recognize how individual determinants of health affect population health



## Course Topics

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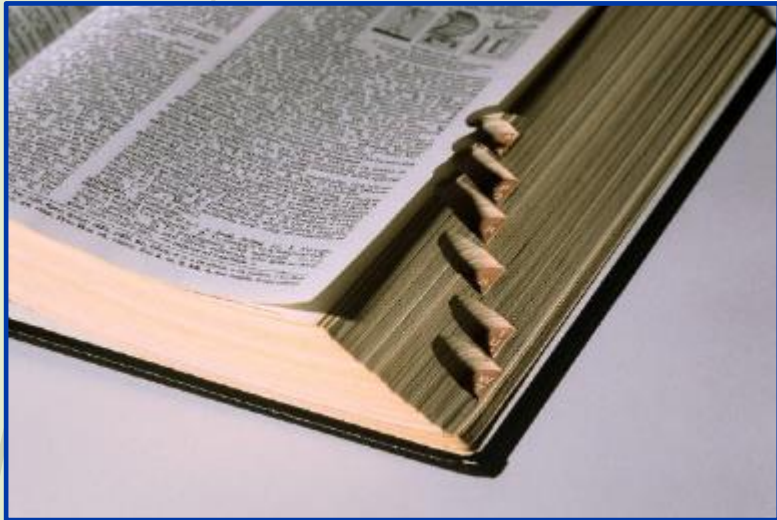
# Introduction to Public Health

- 1. Public Health Definition and Key Terms*
- 2. A Brief History of Public Health**
- 3. A Public Health Approach*
- 4. Core Functions and Essential Services of Public Health**
- 5. Stakeholder Roles in Public Health*
- 6. Determining and Influencing the Public's Health**





## Public Health Definition and Key Terms



## *Ten Achievements of Public Health of the 20<sup>th</sup> Century*

- **Control of infectious disease**
- **Vaccination**
- **Motor vehicle safety**
- **Safer workplaces**
- **Decline in deaths from coronary heart disease, strokes**
- **Safer and healthier foods**
- **Healthier mothers and babies**
- **Family planning**
- **Fluoridation of drinking water**
- **Recognition of tobacco as a health hazard**

**Source: MMWR, 1999**

# Public Health Defined

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“The science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals.” **Prof. CEA Winslow**

“Health services are; It can meet health needs when it is presented as a whole, with an organization that includes mobile services financed from the public resources, population based, teamwork and community participation and includes mobile services.» **Prof. Dr. H. Nusret FİŞEK**

*Winslow CEA. The untilled field of public health. Mod Med 1920;2:183–91.*



# The Mission of Public Health

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INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES

“Fulfilling society’s interest in assuring conditions in which people can be healthy.”

***Institute of Medicine***



World Health  
Organization

“**Public health** aims to provide maximum benefit for the largest number of people.”

***World Health Organization***



# Public Health Key Terms

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**Clinical care** : Prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by medical and allied health professions; also known as *health care*.

**Determinant** : Factor that contributes to the generation of a trait.

**Epidemic or outbreak** : Occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related event clearly in excess of normal expectancy.

Both terms are used interchangeably; however, ***Epidemic*** usually refers to a larger geographic distribution of illness or health-related events.

**Health outcome** : Result of a medical condition that directly affects the length or quality of a person's life.

Stedman TL, ed. Stedman's medical dictionary. 28<sup>th</sup> ed. Baltimore, MD: Lippincott, Williams, and Wilkins; 2006.

Farlex, Inc. The free dictionary. Huntingdon Valley, PA: Farlex, Inc.; 2014. Available at: <http://www.thefreedictionary.com/>



## Knowledge Check

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Fill in the blank with the correct answer.

A. groups of people      B. individuals

Public health aims to provide groups of people with the right to be healthy and live in conditions that support health.







# Knowledge Check

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Fill in the blank with the correct answer.

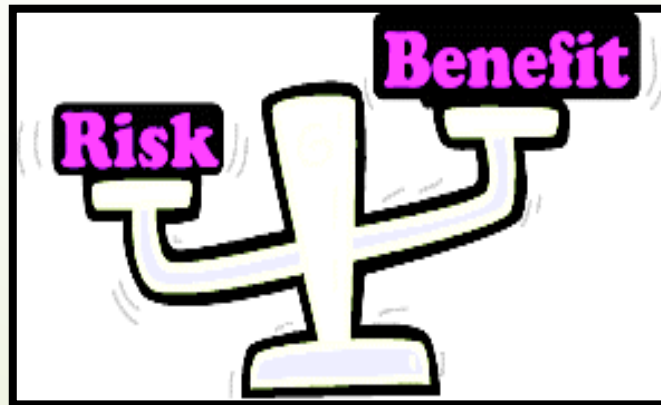
A. pandemic

B. intervention

C. epidemic or outbreak

D. prevention

A(n) epidemic or outbreak is a disease occurrence among a population that is in excess of what is expected for a given time and place.



## Topic 2

# The History of Public Health



History tells us that an informed, activated population is vital to protecting the public's health.

[nam.edu/Perspectives](https://nam.edu/Perspectives)

# COMPARISON of PUBLIC HEALTH & CLINICAL MEDICAL SCIENCES

Feature - dimension	Clinical Medical Sciences	Public Health Science
<b>Hizmet</b>	To individuals, for patients	To society (Healthy people as well as patients)
<b>Objective</b>	In general diagnosis & treatment of individual diseases	To identify the health problems of the society, to prevent and eliminate them, to raise the health level of the society
<b>Basic sciences</b>	Anatomy ( <i>Structure of the body</i> ) Physiology ( <i>Functioning of the body</i> )	Sociology ( <i>Structure of the society</i> ) Sosyal Antropoloji ( <i>Functioning of society</i> )
<b>Diagnostic methods</b>	Medical history ( <i>Anamnezis</i> ) Physical examination Lab. Investigations	Epidemiological methods
<b>Treatment methods</b>	Medical Surgical	Good Health Management Health Education ( <i>to individuals &amp; community</i> )
<b>Site of service</b>	Institutional ( <i>Hospital etc.</i> )	Everywhere we live
<b>Related sciences</b>	Medical sciences close to the specialty area	All medical sciences & social sciences



# Sanitation and Environmental Health

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500 BCE



Greeks and Romans practice community sanitation measures

1840s



The Public Health Act of 1848 was established in the United Kingdom

1970



The Environmental Protection Agency-EPA was founded

# Pandemics *(Global epidemics)*

## Influenza



500 million infected worldwide between 1918-22 & death toll ~50 millions

## Polio



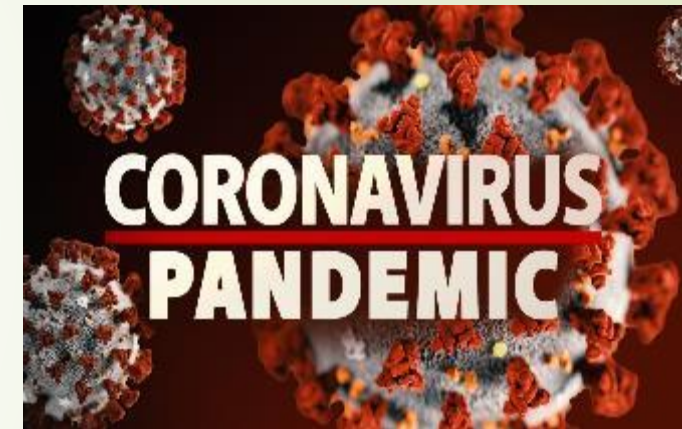
Vaccine introduced in 1955; eradication initiative launched in 1988

## HIV



34 million living with HIV worldwide; 20% decline in new infections since 2001

## COVID-19



Coronavirus Cases:  
**769,806,130**  
**Deaths: 6,955,497**  
*16th Aug. 2023*

# Preparedness for Disaster Response

## Biologic Warfare



**Plague** used as a weapon of war during the Siege of Kaffa

## September 2001



Public health *surveillance* conducted after the 9/11 attacks (2011, USA)

## Hurricane Katrina



Emergency services, public health surveillance, and disease treatment provided



# Prevention Through Policy

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## Book of Leviticus



The World's  
1st written  
health code

## Tobacco Laws



Laws banning smoking  
in public places

## Obesity



Food labeling and  
promotion of  
physical activity



# Knowledge Check

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Which of the following events in public health history have been pandemics? *(Select all that apply)*

A. Siege of Kaffa



B. Influenza



C. Polio

D. Hurricane Katrina



# A Public Health Approach

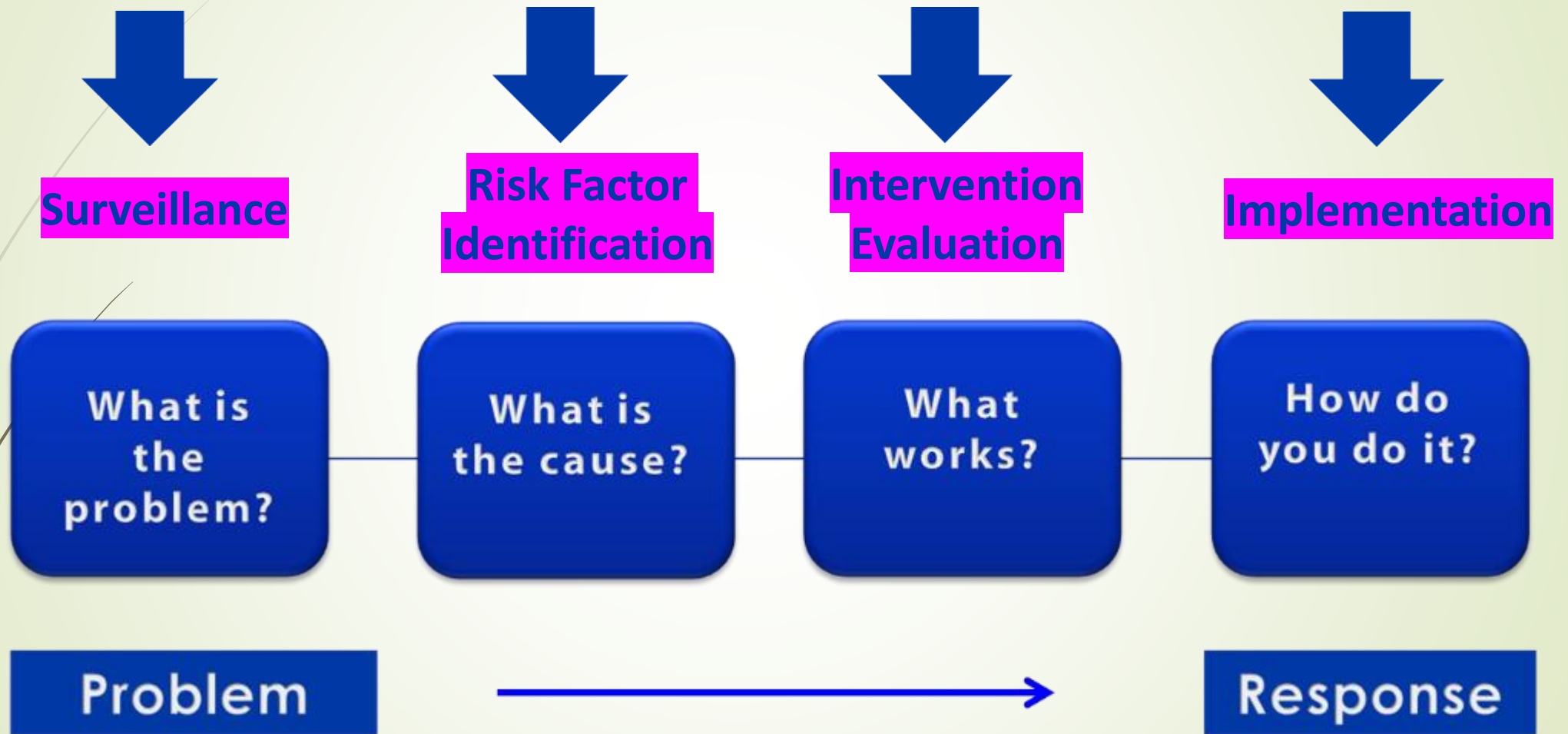
## A New Integrative Public Health Approach





# A Public Health Approach

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# Public Health Core Sciences

Public health

**surveillance** is

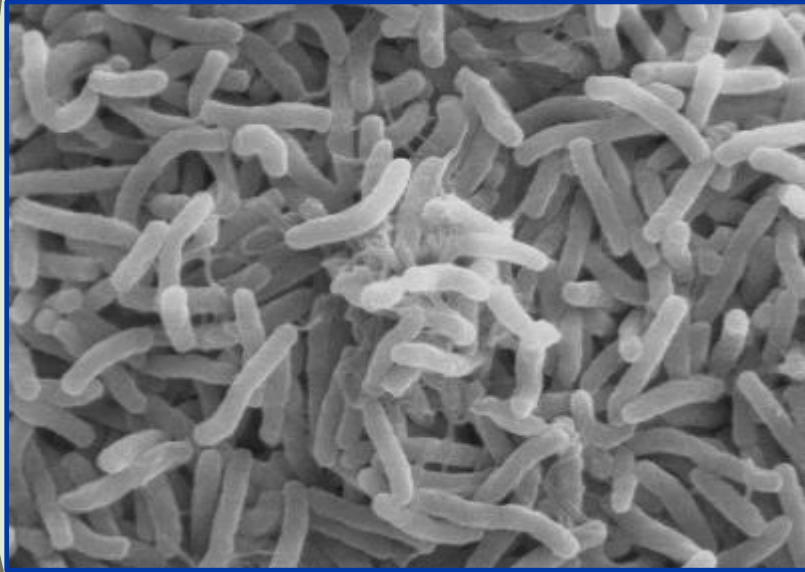
*“the ongoing, systematic collection, analysis, and interpretation of health-related data essential to planning, implementation, and evaluation of public health practice.”*

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# Cholera — A Public Health Approach

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*Photo: TJ Kirn, MJ Lafferty,  
CMP Sandoe, and R Taylor,  
Dartmouth Medical School*

Cholera, a ***fatal*** intestinal disease, was rampant during the early 1800s in London, causing **death** to tens of thousands of people in the area. Cholera was commonly thought to be caused by bad air from rotting organic matter.





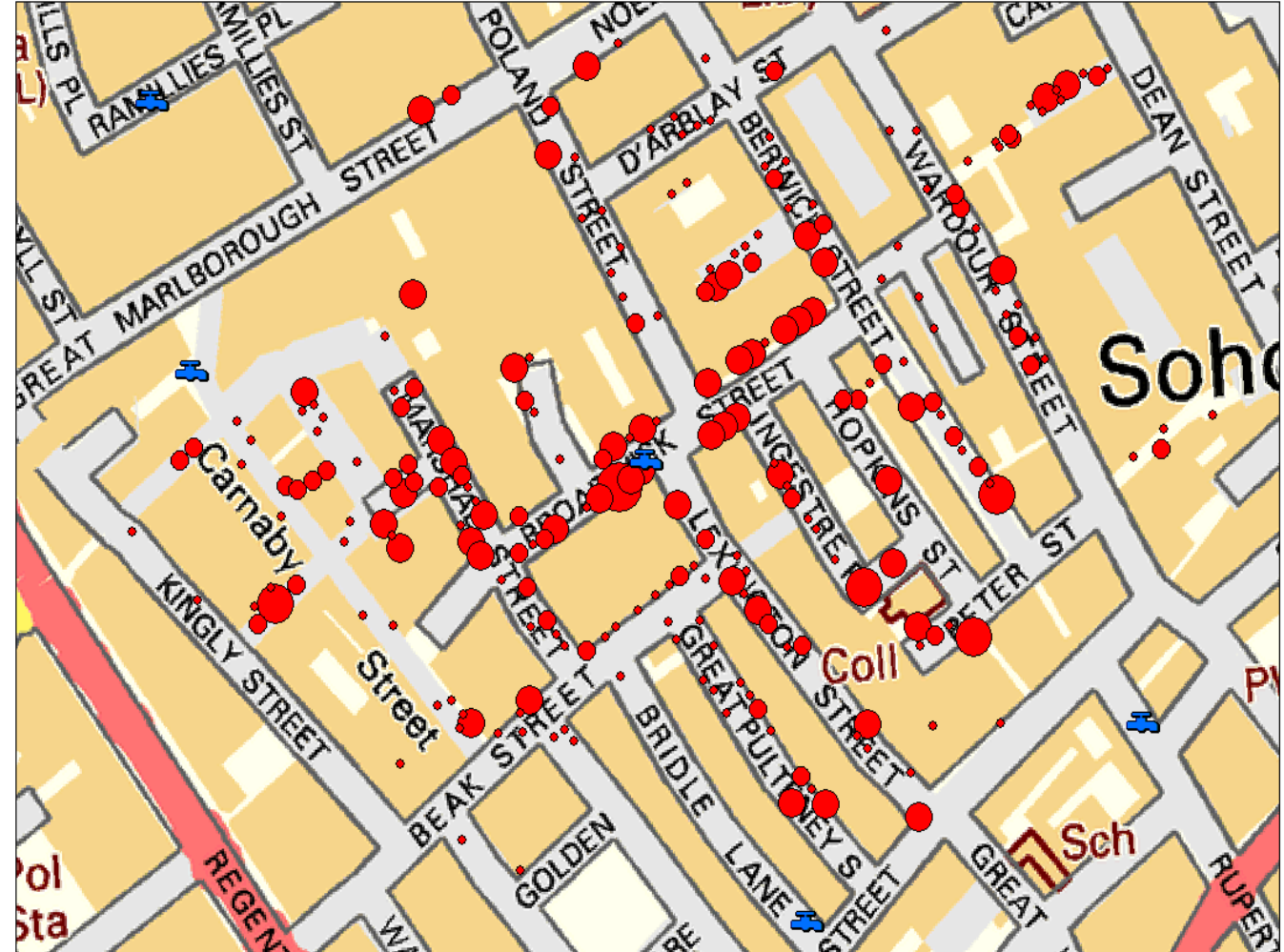
# John Snow, Physician



Photo: The London School of Hygiene & Tropical Medicine - LSHTM

Dr. John Snow is best known for his work tracing the source of the cholera outbreak and is considered the father of modern **Epidemiology.**

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# Epidemiology — What is the Problem?

## Clustering of Cholera Cases, London — 1854

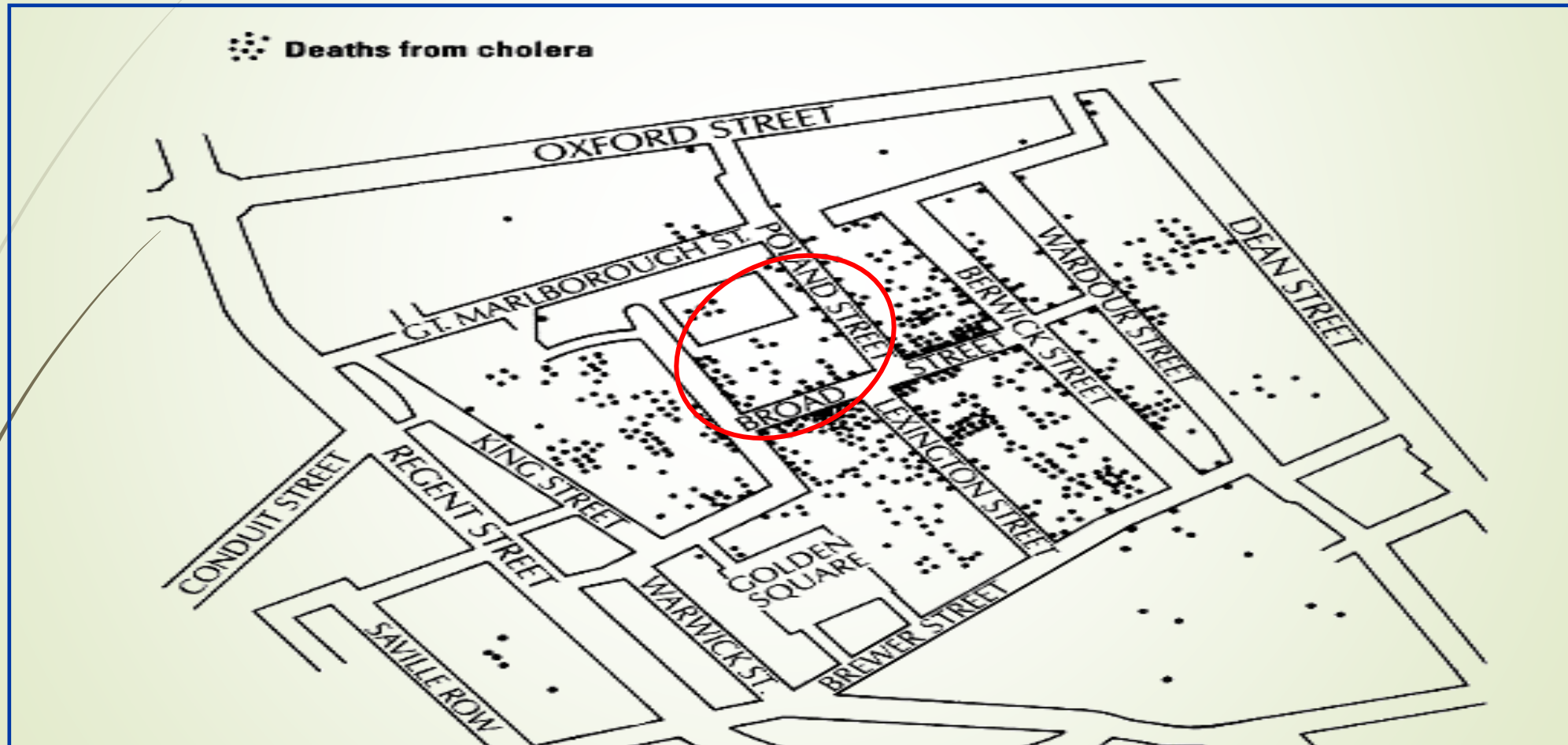


Image: The Geographical Journal

# Risk Factor Identification — What Is the Cause?

23

## Cluster of Cholera Cases and Water Pump Site Locations

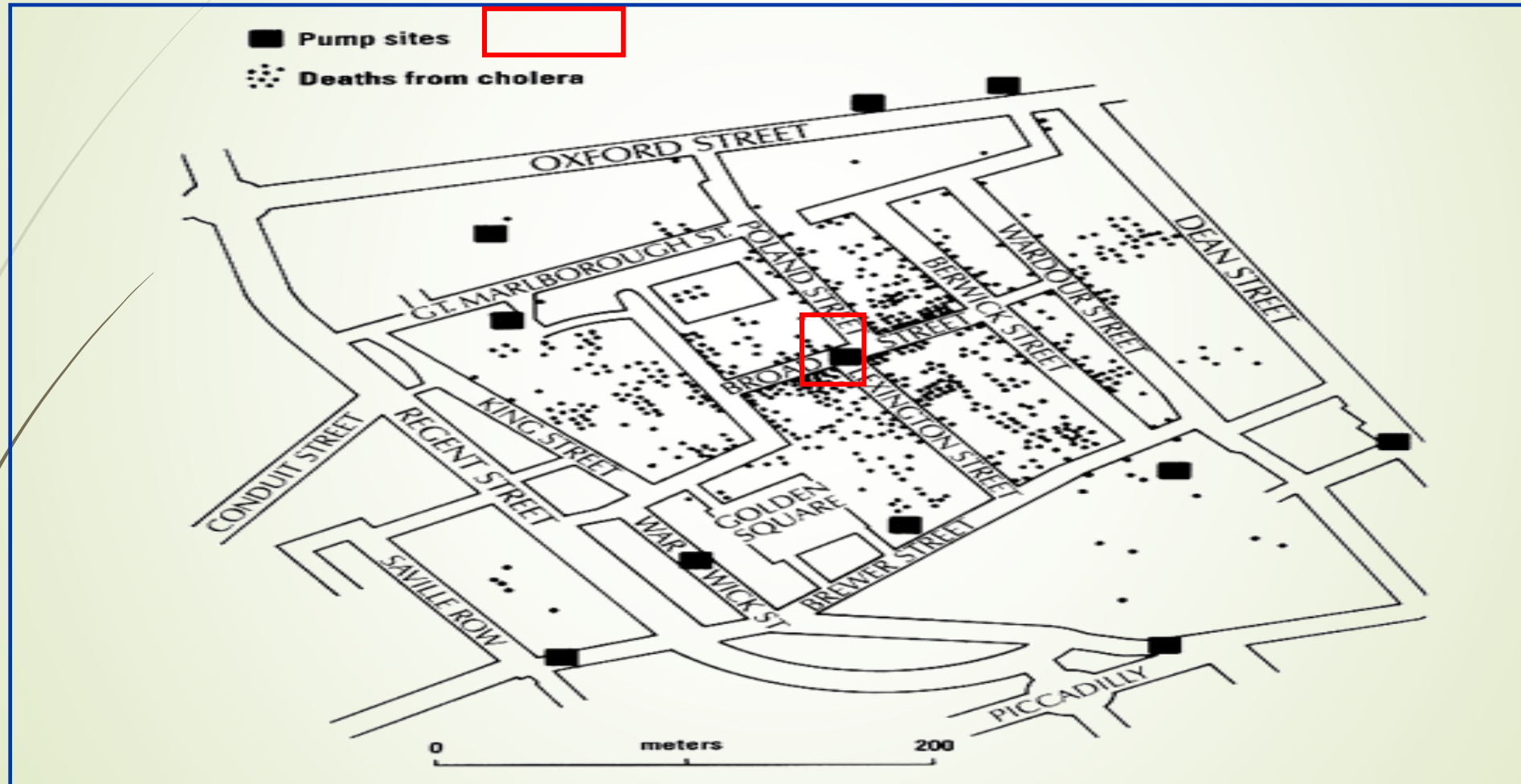


Image: The Geographical Journal

# Intervention Evaluation — What Works?

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Through continuous research,

**Dr. J. Snow** understood what interventions were required to

- *stop exposure to the contaminated water supply on a larger scale, and*
- *stop exposure to the entire supply of contaminated water in the area*





# Implementation — How Do You Do It?

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Photo: Justin  
Cormack

- ❑ Dr. John Snow's research convinced the British government that the source of cholera was ***water contaminated with sewage!***



# Knowledge Check

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**Fill in the blanks with the correct answers.**

Each public health core science helps us to protect and promote the public's health by providing public health practitioners with the answers they need.





# Knowledge Check

Match each component of the public health approach with the questions they answer.

A. Risk Factor Identification

B. Surveillance

C. Implementation

D. Intervention Evaluation

B. Surveillance

1. What is the problem?

A. Risk Factor Identification

2. What is the cause?

D. Intervention Evaluation

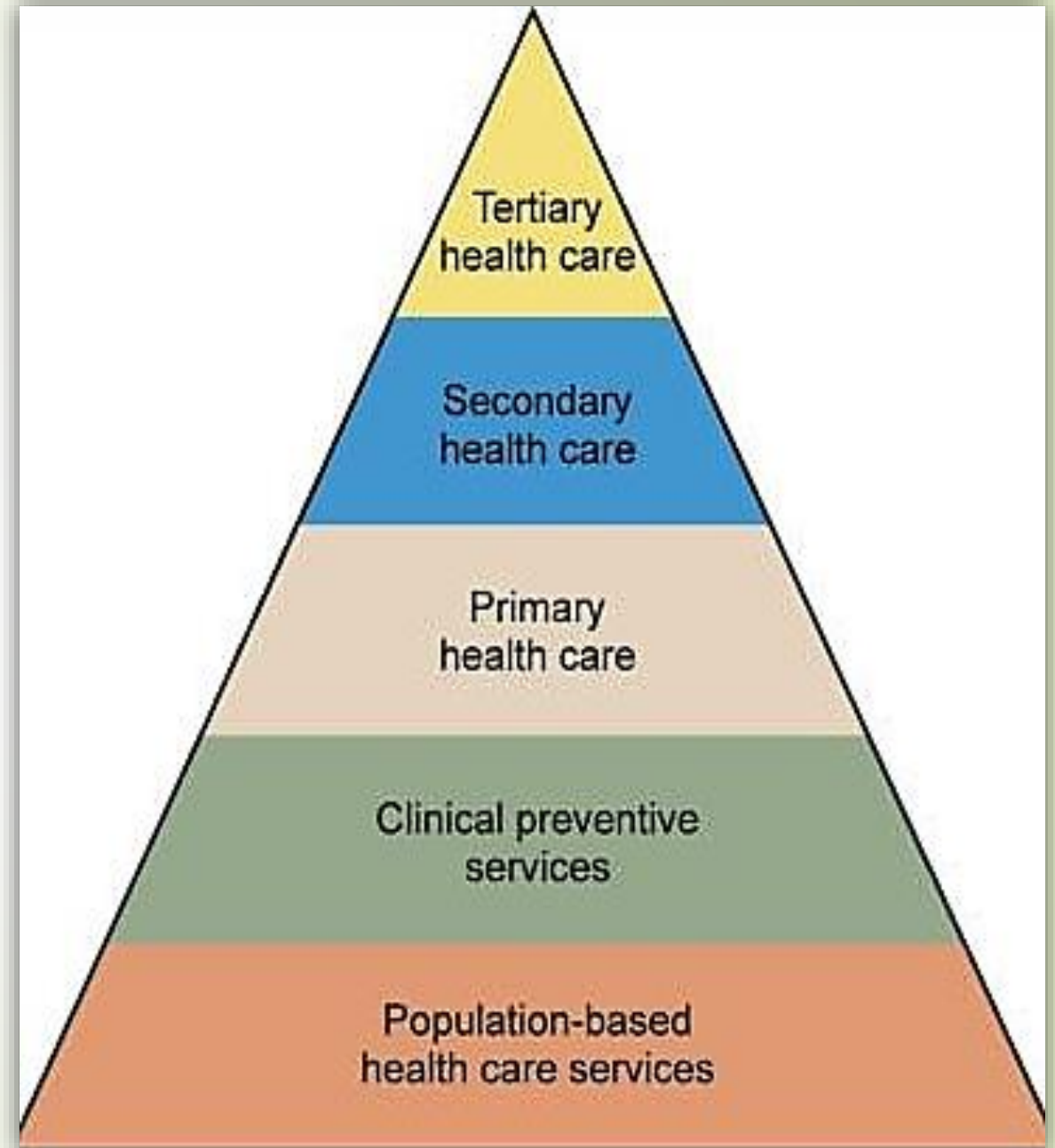
3. What works?

C. Implementation

4. How do you do it?



# Core Functions and Essential Services of Public Health









# Three Core Functions of Public Health

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## Assessment

→ Systematically collect, analyze, and make available information on healthy communities

## Policy

Development

→ *Promote the use of a scientific knowledge base in policy and decision making*

## Assurance

→ Ensure provision of services to those in need

**Institute of Medicine.** The future of public health. Washington, DC: National Academies Press; 1988.



# 10 Essential Public Health Services

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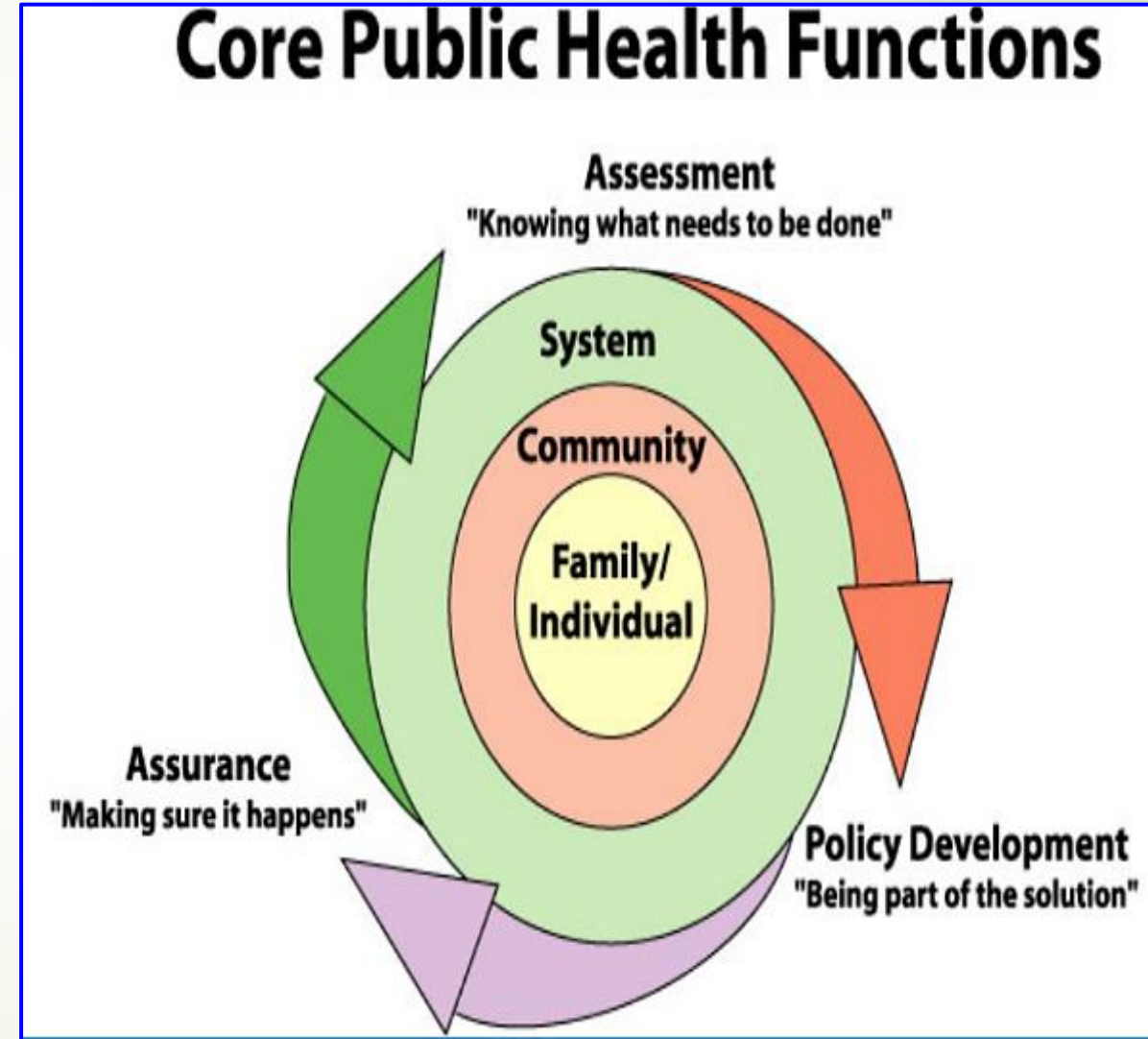


1. Monitor Health
2. *Diagnose and Investigate*
3. Inform, Educate, Empower
4. *Mobilize Community Partnership*
5. Develop Policies
6. *Enforce Laws*
7. Link to / Provide Care
8. *Assure a Competent Workforce*
9. Evaluate
10. *Research*

# Core Functions at Government Levels

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	Assessment	Policy Development	Assurance
Federal	National tobacco public health surveillance	Smoking ban on commercial flights	Federal grants for antismoking research
State	Monitor state tobacco use	Increase tobacco tax	Funding for campaign through Proposition 99
Local	Report on local tobacco use	County laws prohibiting smoking in bars	Resources to help smokers quit in multiple languages





# Knowledge Check

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Which of the following is **NOT** a core function of public health?

- A. Assurance
- B. Assessment
- ✓ C. Authority
- D. Policy development







# Knowledge Check

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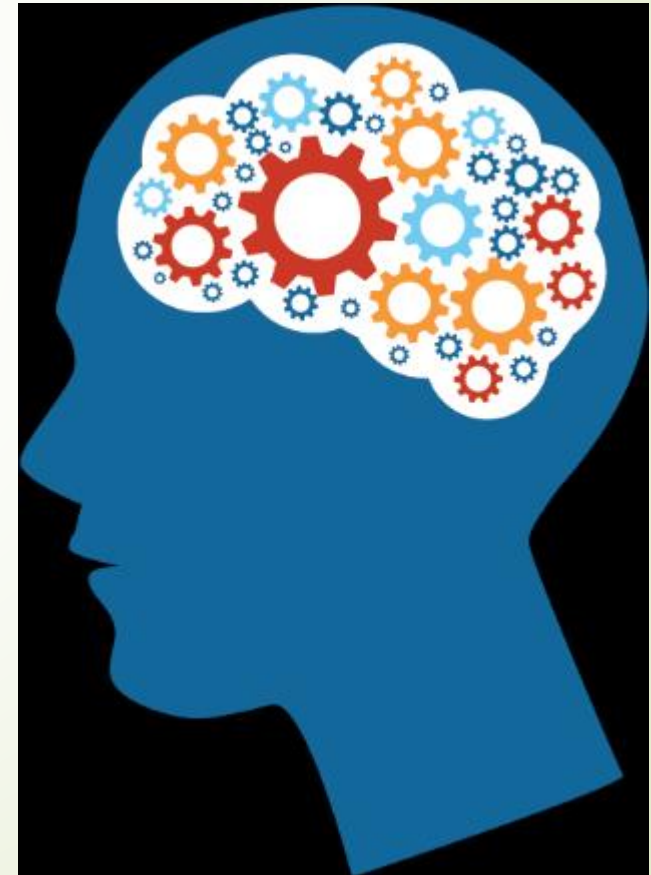
The essential health services of monitoring health and diagnosing and investigating disease relate to which core public health function?

A. Assurance

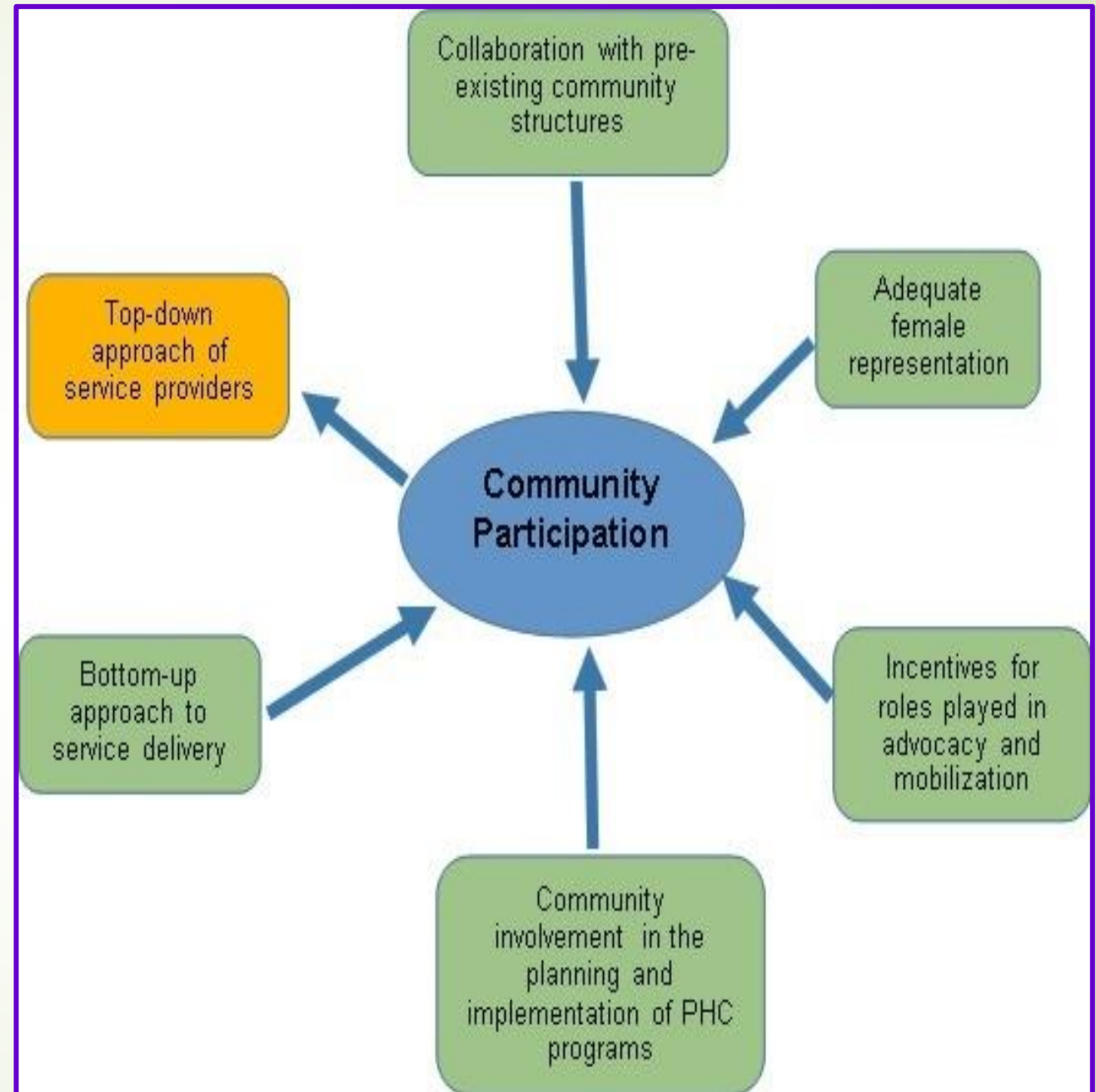


B. Assessment

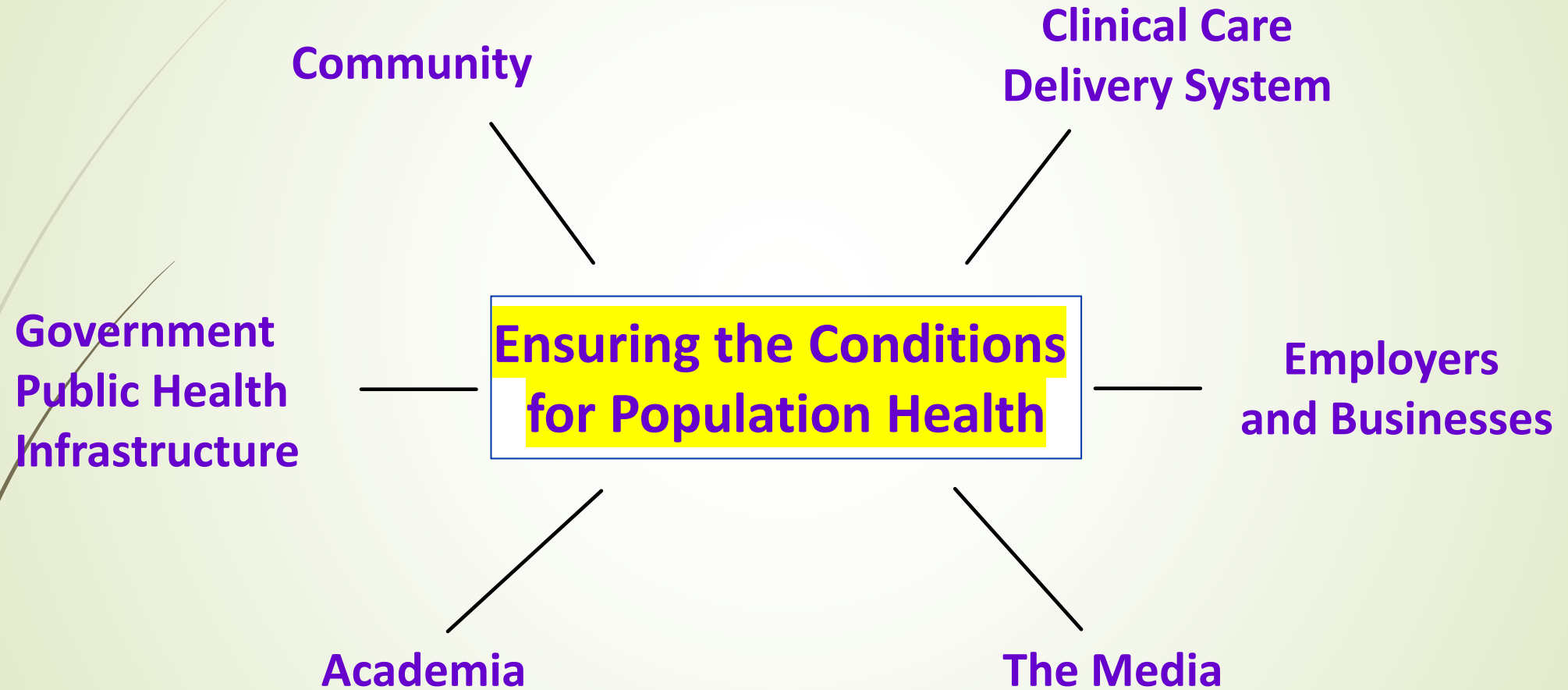
C. Policy Development



# Stakeholder / Participant Roles in Public Health



# Partners in the Public Health System



*Institute of Medicine.*

*The future of the public's health in the 21<sup>st</sup> century. Washington, DC: The National Academies Press; 2002.*



# Non-governmental Organization (NGOs) Examples

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Organization Type	Example
Professional membership organizations	American Public Health Association-APHA
Associations related to a specific health concern	American Cancer Society
<i>Organizations of citizens focused on health concerns</i>	<i>Americans for Non-smokers Rights</i>
Foundations that support health projects and influence public policy development	Example : <i>Bill and Melinda Gates Foundation</i>

***Institute of Medicine.***

*Who will keep the public healthy? Workshop summary. Washington, DC: The National Academies Press; 2003.*

# Health Care as a Partner in Public Health

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<b>Public Health</b>	<b>Health Care</b>
Population focus	Individual patient focus
<i>Public health ethic</i>	<i>Personal service ethic</i>
Prevention or public health emphasis	Diagnosis and treatment emphasis
<i>Joint laboratory and field involvement</i>	<i>Joint laboratory and patient involvement</i>
Clinical sciences peripheral to professional training	Clinical sciences essential to professional training
<i>Public sector basis</i>	<i>Private sector basis</i>



# Public Health Code of Ethics Twelve Principles

1. Addresses causes of disease to prevent.
2. Respects the rights of individuals in the community.
3. Utilizes community input in program development.
4. Advocates “empowerment” of the disenfranchised.
5. Seeks the information needed before acting.
6. Provides the community with information to decide.
7. Acts in a timely manner on the information.
8. A variety of approaches anticipate and respect diversity.
9. Enhance the physical & social environment.
10. Confidentiality - Exceptions must be justified.
11. Professional competence.
12. Work collaboratively to build the public's trust.



# Other Partners in Public Health

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Media



- Vehicle for public discourse
- Health education and promotion
- Health communication
- Social media as catalyst

Employers  
and Businesses



- *Employer-sponsored health insurance programs*
- *Wellness initiatives and benefits*
- *Healthy workplaces and communities*

Government  
Agencies



- City planning
- Education
- Health in all policies

Academia



- *Education*
- *Training*
- *Research*
- *Public Service*



*Invasion of Iraq,  
by the USA, 2003*



# Knowledge Check

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**Match each stakeholder to its role in public health.**

A. Academia

B. Employers and businesses

C. Government

D. Media

D. Media

1. Vehicle for public discourse

C. Government

2. Health in all policies

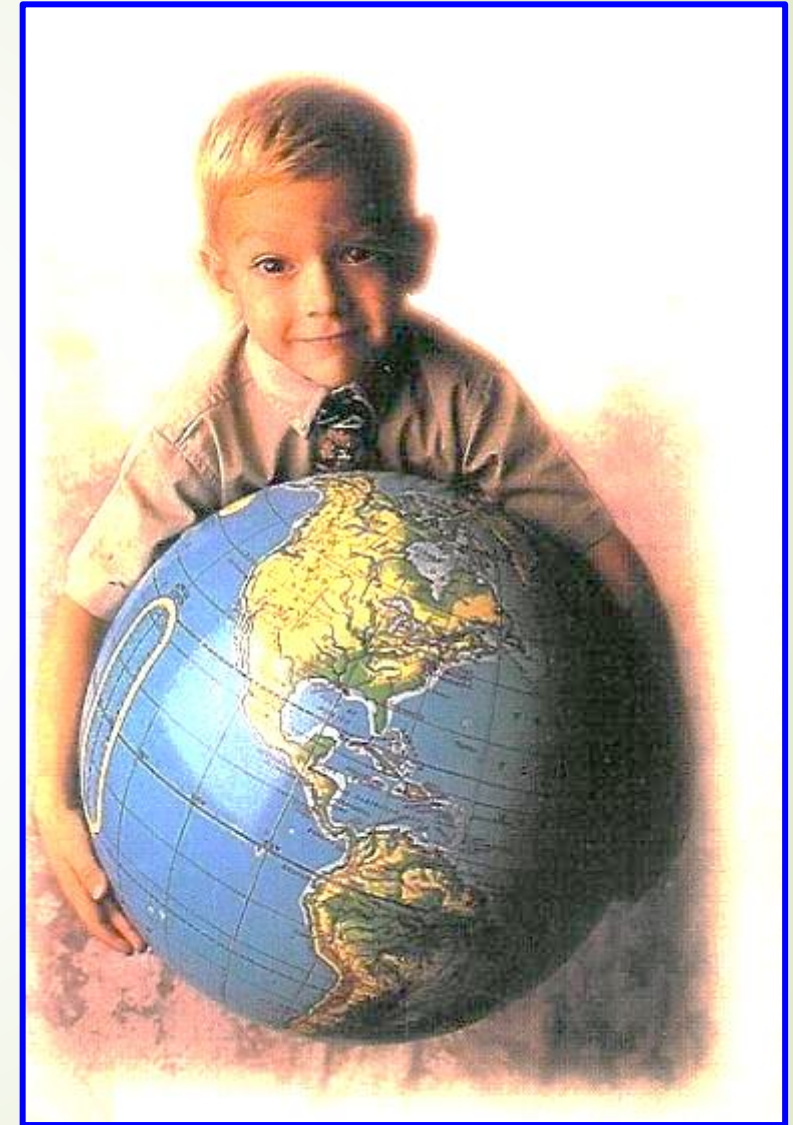
A. Academia

3. Education and training

B. Employers and businesses

4. Wellness initiatives and benefits

# Determining and Influencing the Public's Health





# Health Determinants

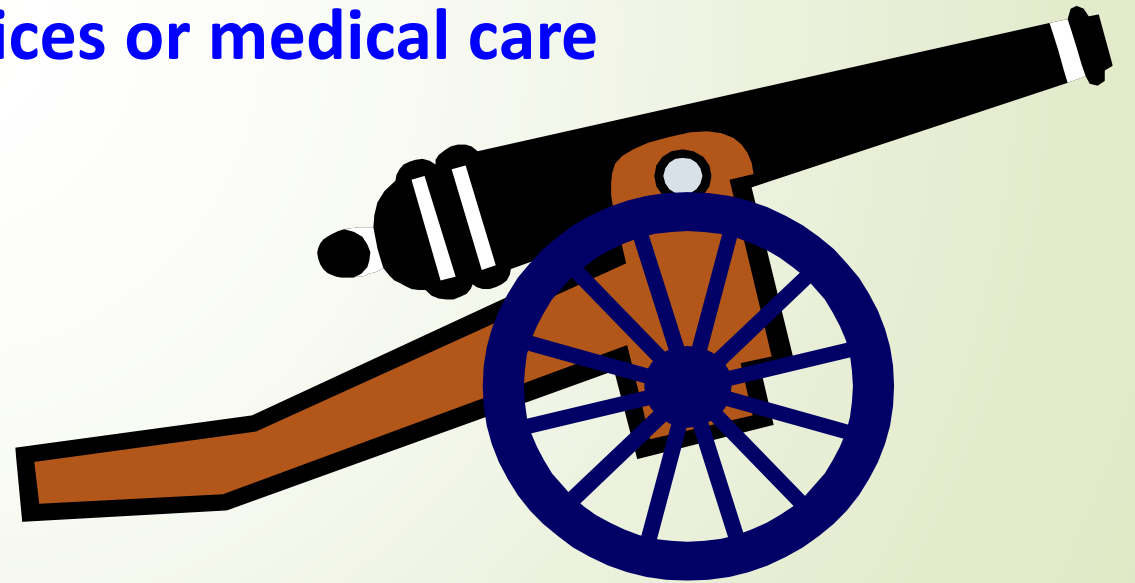
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- *Genes and biology*
- **Health behaviors**
- *Social or societal characteristics, eg. **POVERTY***
- **Health services or medical care**

***“Genes load the gun.  
Lifestyle pulls the trigger”***

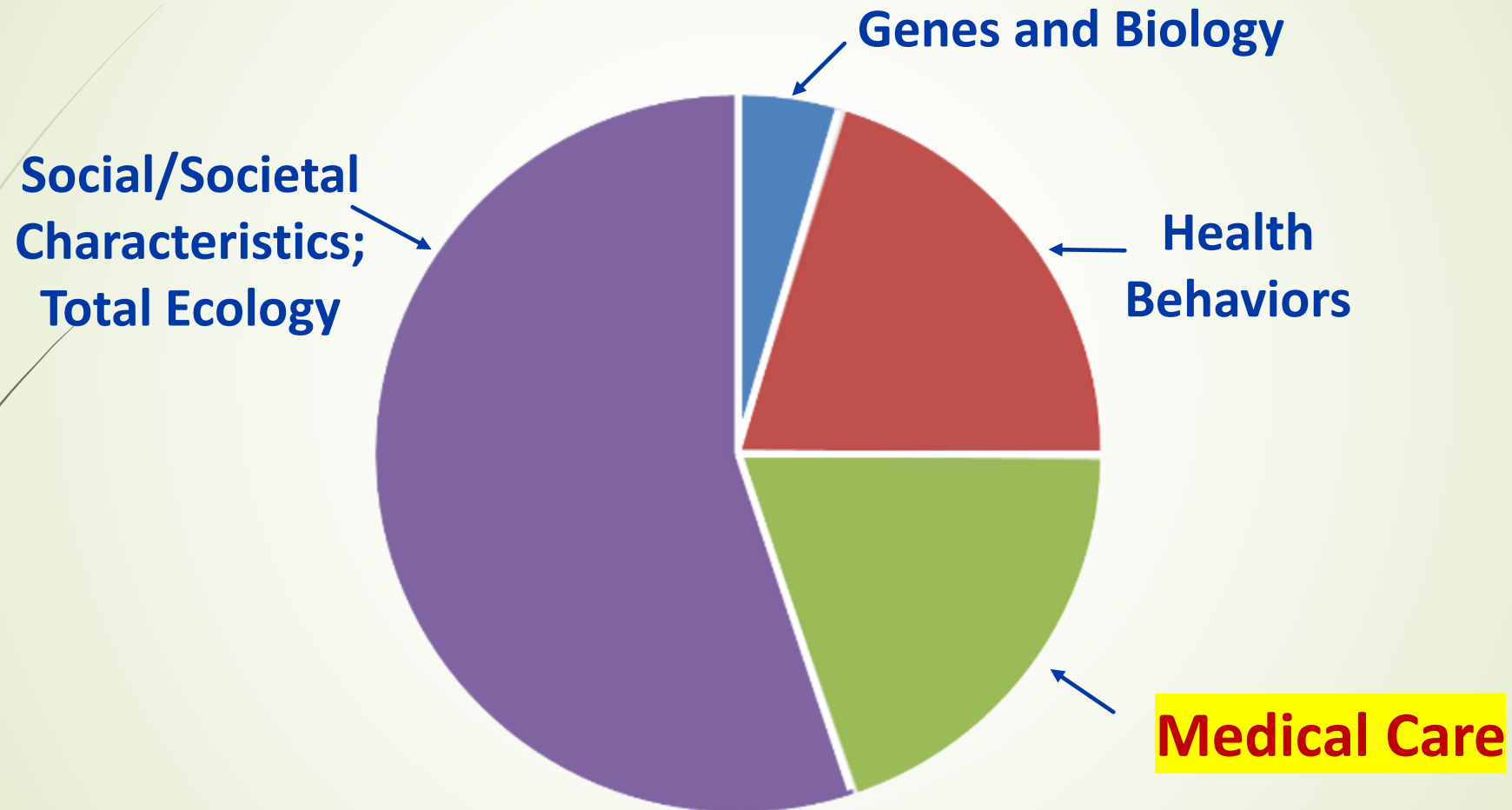
**Dr. Elliot Joslin**



*CDC-Centers for Disease Control and Prevention. Social determinants of health. <http://www.cdc.gov/socialdeterminants/FAQ.html>.*

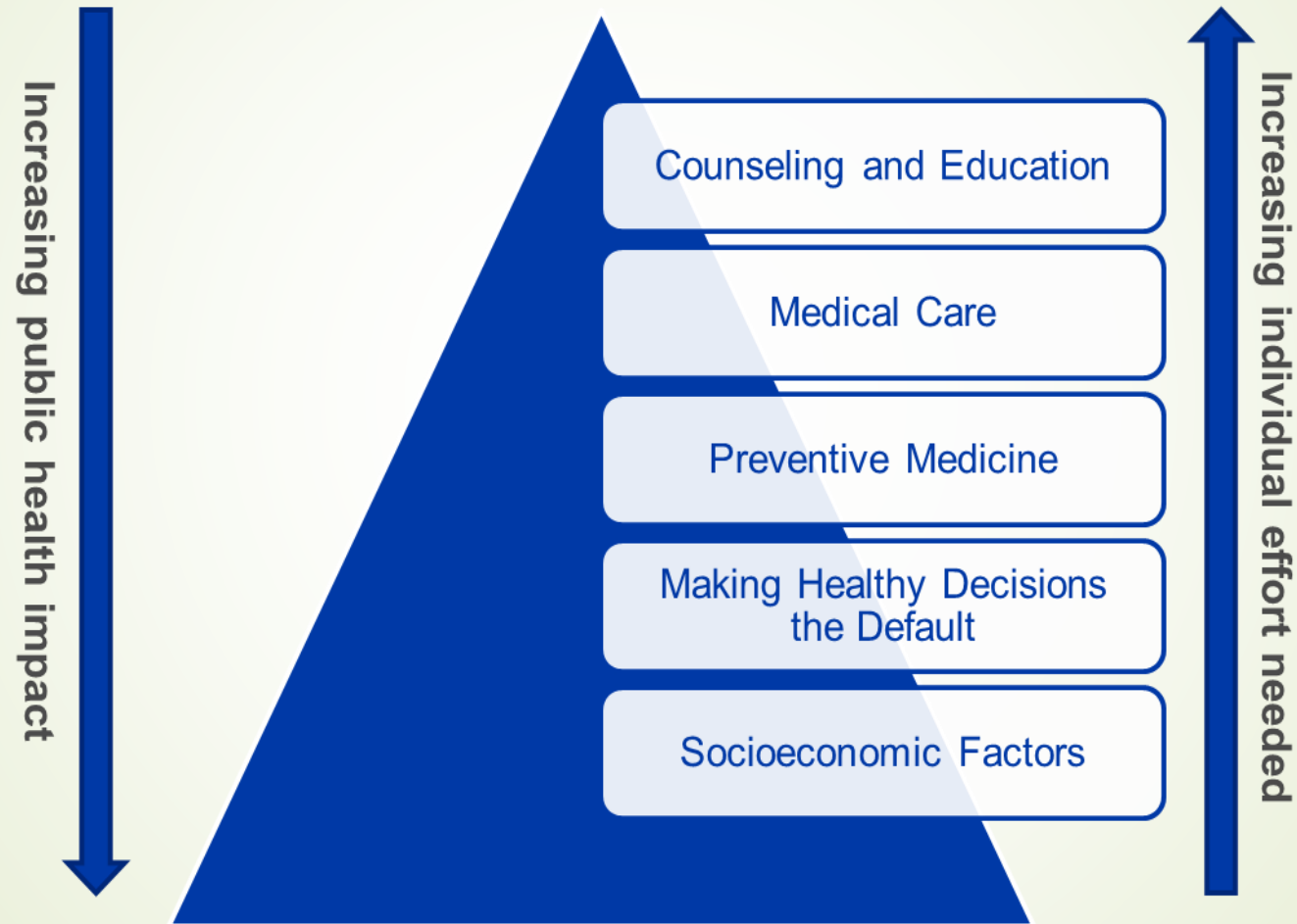
# What Determines the Health of a Population?

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*CDC-Centers for Disease Control and Prevention. Social determinants of health. <http://www.cdc.gov/socialdeterminants/FAQ.html>*

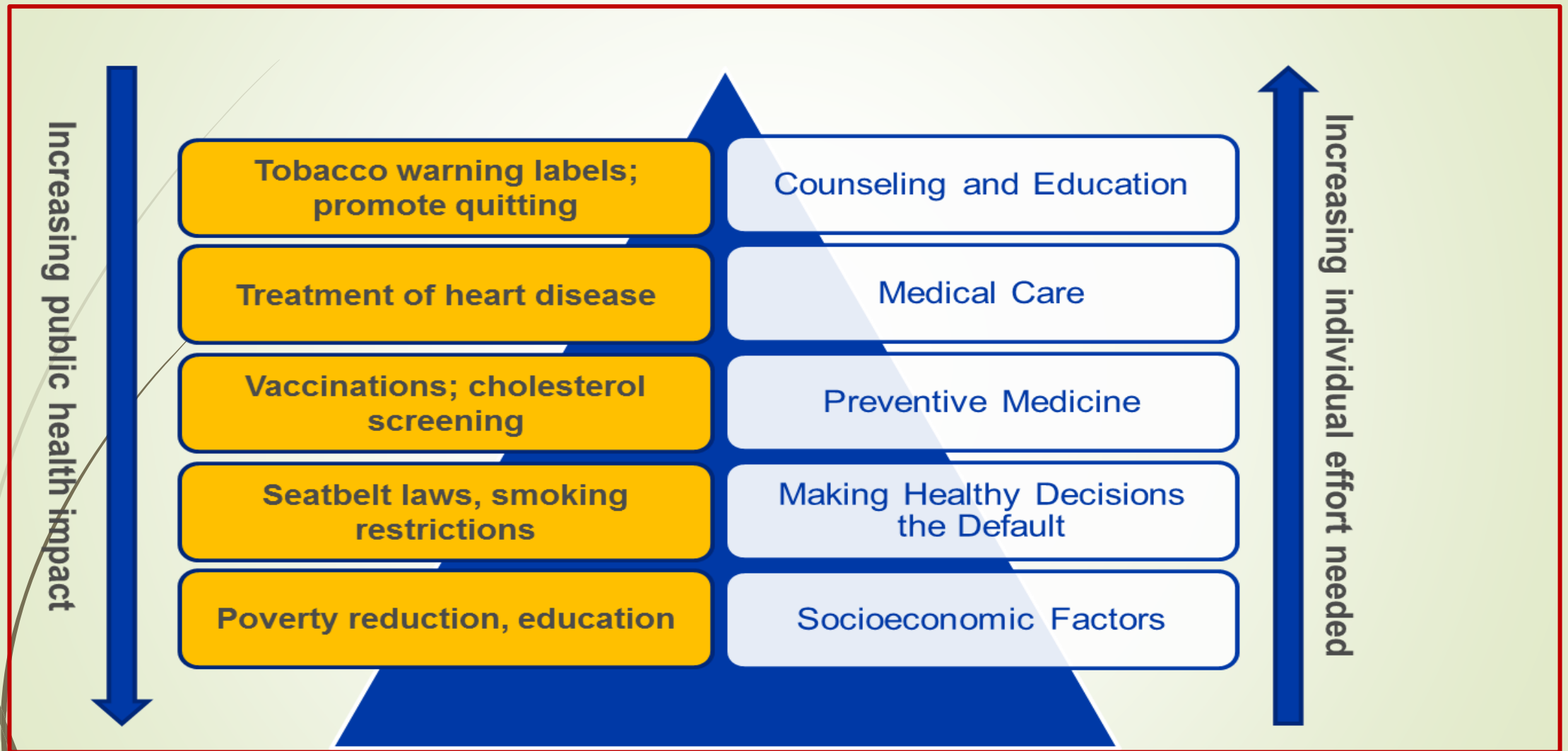
# Health Impact Pyramid



Frieden TR. Framework for public health action: the health impact pyramid. *Am J Public Health* 2010;100:590–5.



# Health Impact Pyramid



Frieden TR. Framework for public health action: the health impact pyramid. *Am J Public Health* 2010;100:590–5.



# Knowledge Check

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List the four determinants of health.

1. Genes and biology
2. Health behaviors
3. Social/societal characteristics
4. Health services or medical care





# Knowledge Check

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Fill in the blanks using the following choices.

A. down

B. up

1. As we move down the health impact pyramid, the public health impact grows greater.
2. As we move up the health impact pyramid, the amount of individual effort increases.

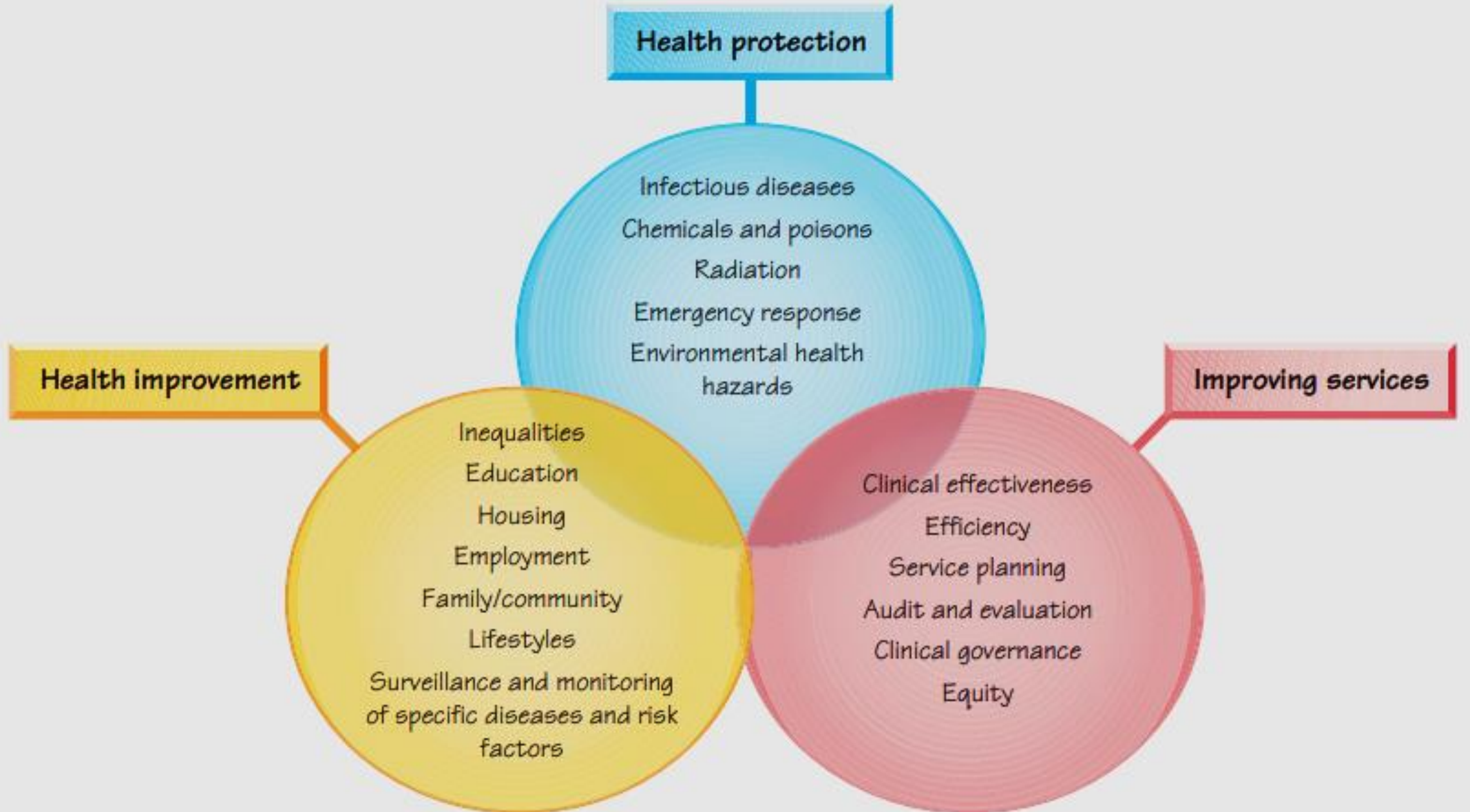


# Public Health Core Sciences



## Epidemiology

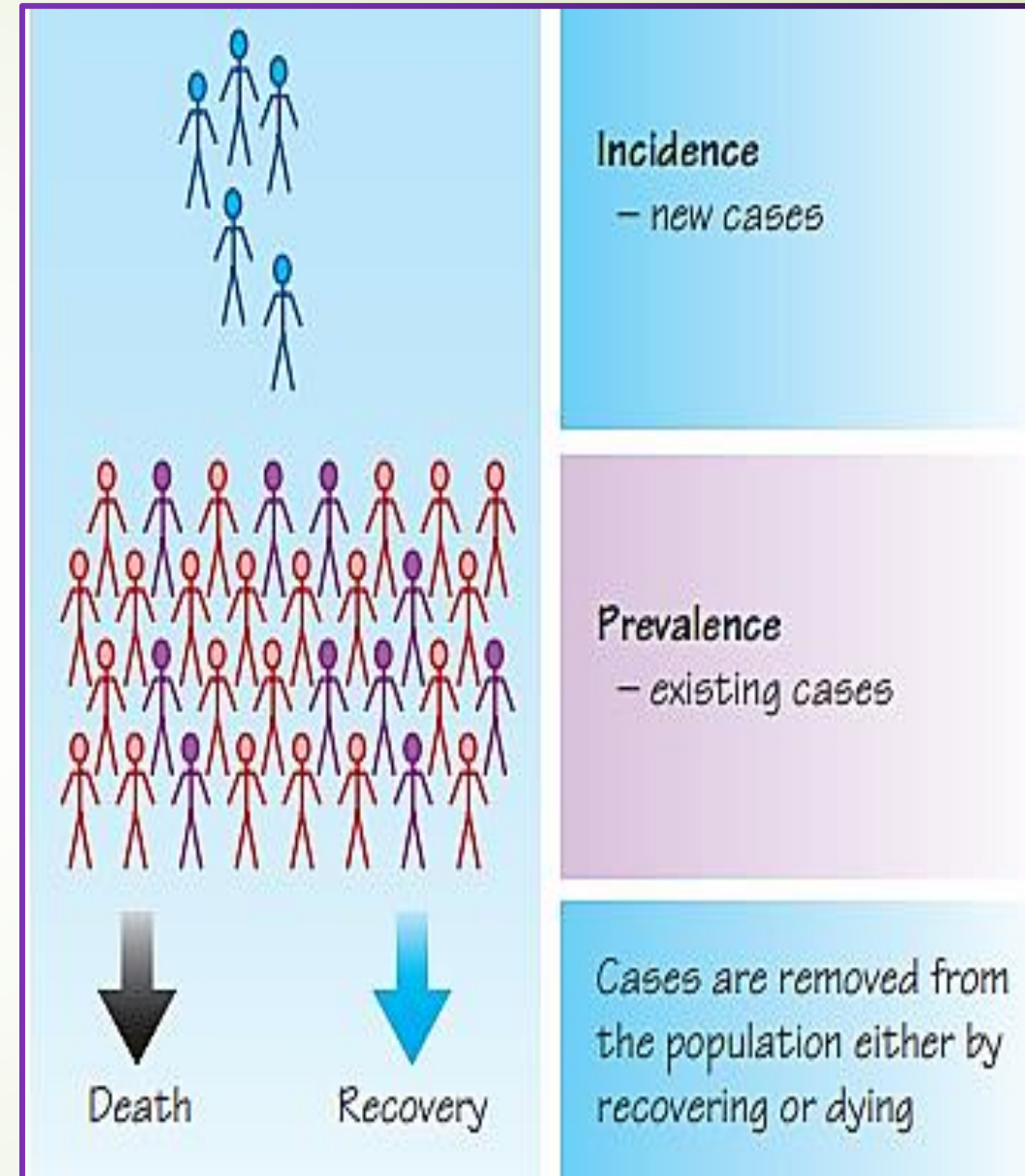
*is the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems.*



## Domains of public health

The scope of public health, as described above, is very wide-ranging, but is generally recognised as falling into three domains (Figure 1b). All three domains draw on the academic disciplines listed above and all collect or make use of information relevant to health, such as population data from the census, data on health service use (e.g. prescribed drugs, hospital admissions or consultations with health professionals), registrations of births and deaths and disease and risk factor prevalence levels (e.g. alcohol consumption or diabetes).

<https://risweb.standrews.ac.uk/portal/en/researchoutput/public-health-in-practice-the-three-domains-of-public-health%2872101d6c-6e71-4ab6-a652-8e783ec8a4f9%29.html> 28.9.23

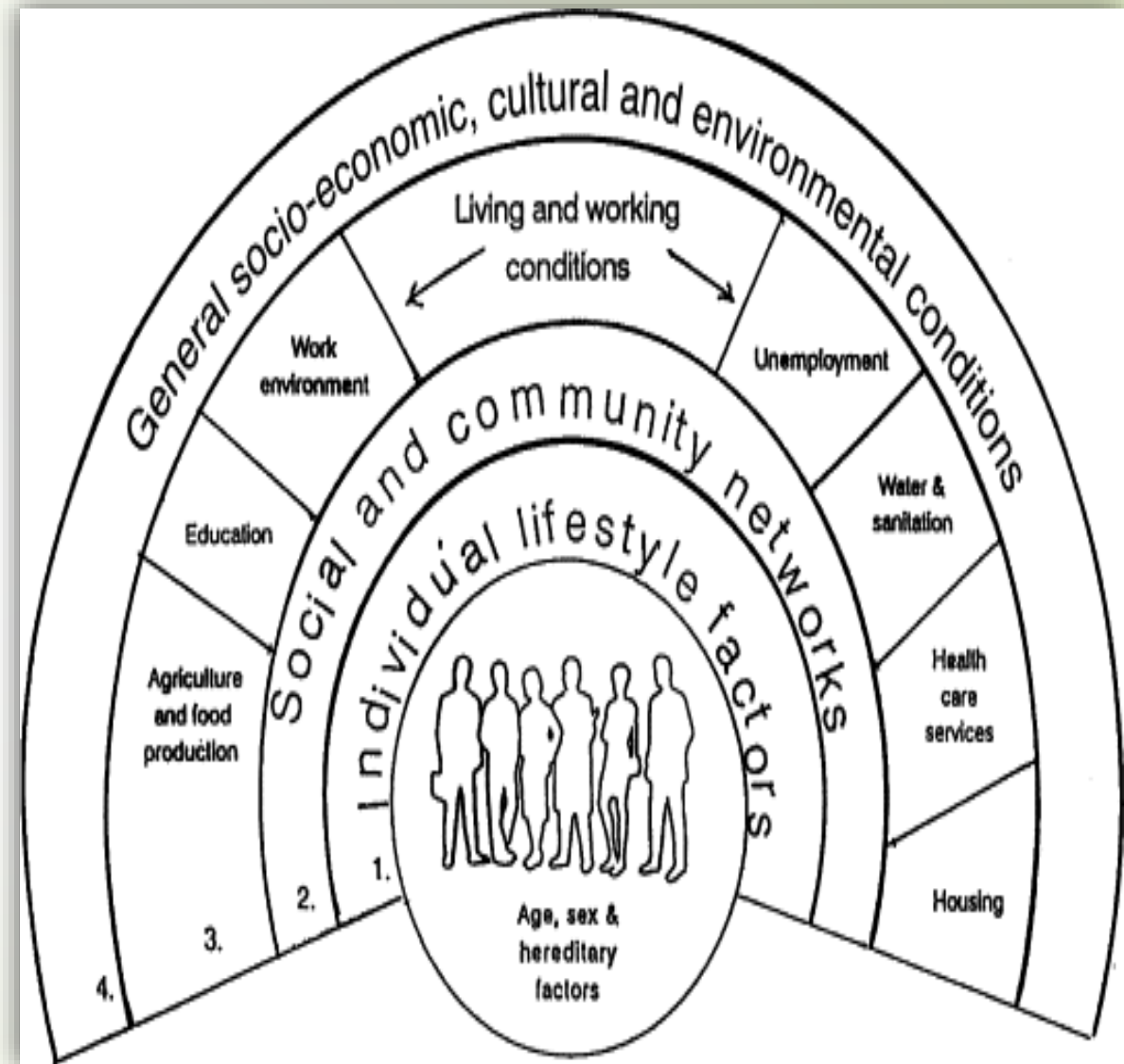




# Domains of Public Health

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- **Health protection** covers communicable diseases and environmental hazards, such as exposure to toxic chemicals and poisons. Exposure to hazardous substances at work is covered by the separate discipline of occupational medicine.
- **Health improvement** includes understanding the wider determinants of health, such as housing, education, poverty and lifestyle risk factors and seeks to improve health through health promotion and disease prevention.
- **Improving services** is concerned with how the quality of health services can be improved through evidence-based planning, the provision of effective and cost-effective treatment and ensuring that services are available to everyone who can benefit from them.



## Pyramid illustrating the spectrum of disease severity



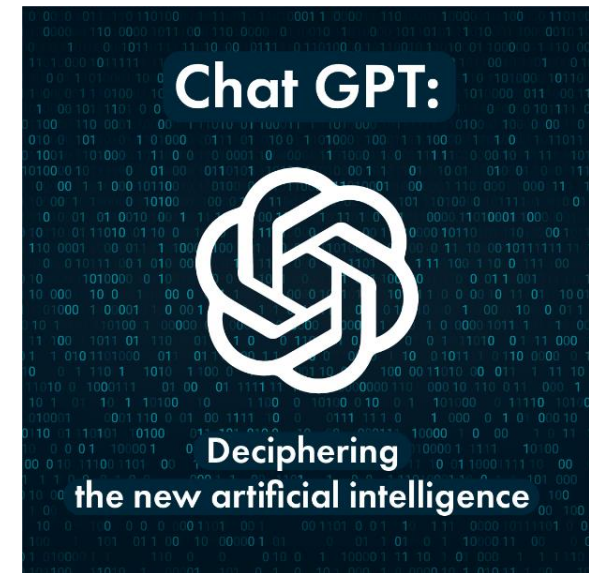
## I asked Chat GPT :

### *What about the near and mid-term future of Public Health as an essential medical discipline?*

Answer :

- Public Health** is a field that focuses on improving the health of communities and populations through education, promotion of healthy behaviors, and research for disease prevention & control.
  - According to a report by Deloitte Insights, future **Public Health efforts** will shift away from sole dependence on workers with clinical expertise toward a system that taps into many different skill sets to achieve its goals.
  - Disciplines such as data science, **AI**, and engineering will bridge with Public Health to solve problems more efficiently.
  - The **Academy of Medical Sciences** has also published a report on "**Health of the Public in 2040**" which outlines 6 key developments required for the future of public health. These include;
    - *rebalancing and enhancing the coordination of research,*
    - *harnessing new technologies and the digital revolution,*
    - *developing transdisciplinary research capacity,*
    - *aligning perspectives and approaches between clinical and public health practice.*

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# QUICK REMINDER -1

1. **Public health** is the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals.
2. ***Public health** aims to address the social and environmental determinants of health that affect the health and well-being of populations.*
3. **Public health** uses a population-based approach that considers the distribution and determinants of health and disease, and the interventions that can improve health outcomes at a population level<sup>2</sup>.
4. ***Public health** relies on epidemiology as a core discipline to measure the burden of disease, identify risk factors, evaluate interventions, and monitor trends.*
5. **Public health** applies a range of methods and tools to collect, analyze, and disseminate data and evidence to inform decision-making and action.

## QUICK REMINDER -2

6. **Public health** adopts a life-course perspective that recognizes the influence of early life experiences, transitions, and cumulative exposures on health and disease across the lifespan.

7. **Public health** *embraces a multisectoral and interdisciplinary approach that engages with various participants, such as health professionals, policy makers, researchers, communities, and civil society.*

8. **Public health** respects the rights, dignity, and autonomy of individuals and communities, and strives to protect them from harm, promote their well-being, and ensure equity and **social justice**.

9. **Public health** *adheres to ethical principles and values, such as beneficence, non-maleficence, justice, solidarity, accountability, transparency, and participation.*

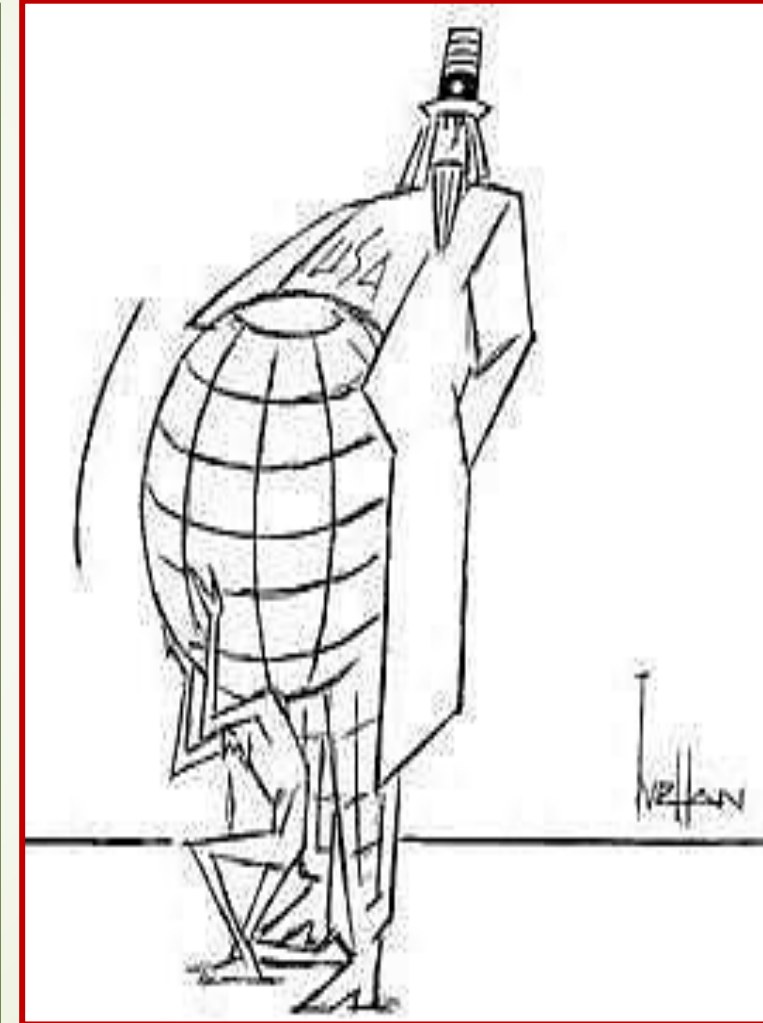
10. **Public health** fosters innovation and research to generate new insights and solutions to emerging and persistent health challenges.

# Course Summary

By this course, you have learned to... Check yourself..

- *Define «Public Health» as an essential medical discipline*
- describe the main purposes of Public Health
- *define key terms used in Public Health*
- identify prominent events in the history of Public Health
- *recognize the core Public Health functions and services*
- describe the role of different stakeholders in the field of Public Health
- *list some determinants of health*
- recognize how individual determinants of health affect population health

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*Thank you for your attention...*



# Final notes & References

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## AT A GLANCE....

This course provides an overview of the mission of Public Health, including key Public Health terms, historical developments in Public Health, the roles of different partners, **Public Health's core functions** and *essential services*, **determinants of health**, and the **Health Impact Pyramid**.

**Public Health problems** are diverse and include infectious diseases, chronic diseases, emergencies, injuries, environmental health threats, and more. **Learn** about Public Health's role in smoke-free laws, disease tracking, and natural **disaster response**. **Find out** how focusing on the health of groups of people has made our lives longer, **prevented early deaths**, and continues to make us healthier.

\*\*\*

**Oxford Textbook of Global Public Health, 7th ed., related chapters (Main reference)**

<https://www.cdc.gov/training/publichealth101/e-learning/public-health/>

<https://www.youtube.com/watch?v=-dmJSLNgjxo>

<https://www.youtube.com/watch?v=3VdWvcVPVdE>

<https://www.youtube.com/watch?v=d5DsDJooDrE>

<https://www.cdc.gov/training-publichealth101/php/training/introduction-to-public-health.html>

Winslow CEA. *The untilled field of public health*. *Mod Med* 1920;2:183–91.

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A hand-drawn sign on a white background. In the center is a raised fist, colored pinkish-red, with a black outline. The fist is surrounded by several red roses with black outlines and green leaves. The text 'WOMEN'S RIGHTS' is written in bold, black, hand-drawn capital letters on the left side of the sign. The text 'HUMAN RIGHTS' is written in bold, black, hand-drawn capital letters on the right side. The word 'ARE' is written in smaller, black, hand-drawn capital letters between the two main phrases. At the bottom left of the sign, the website address 'www.ahmetsaltik.net' is written in a smaller, blue font. The sign is held by a person whose legs and feet are visible in the background, standing on a set of concrete stairs.

**WOMEN'S  
RIGHTS**

**ARE**

**HUMAN  
RIGHTS**

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