

Public Health & Social Medicine. Definitions & History

Public Health. Lecture 1
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Learning outcomes

- **Upon completion of this lecture you should be able to give :**
 - **Concepts and definition of an individual's health, public health,**
 - **Concepts and definition of science of Social Medicine, its components and goals**
 - **Concepts and definition of science of Public Health**
 - **Some facts from history of Public Health**
 - **The role of Rudolf Karl Ludwig Virchow**
 - **Persons in history of Social Medicine**



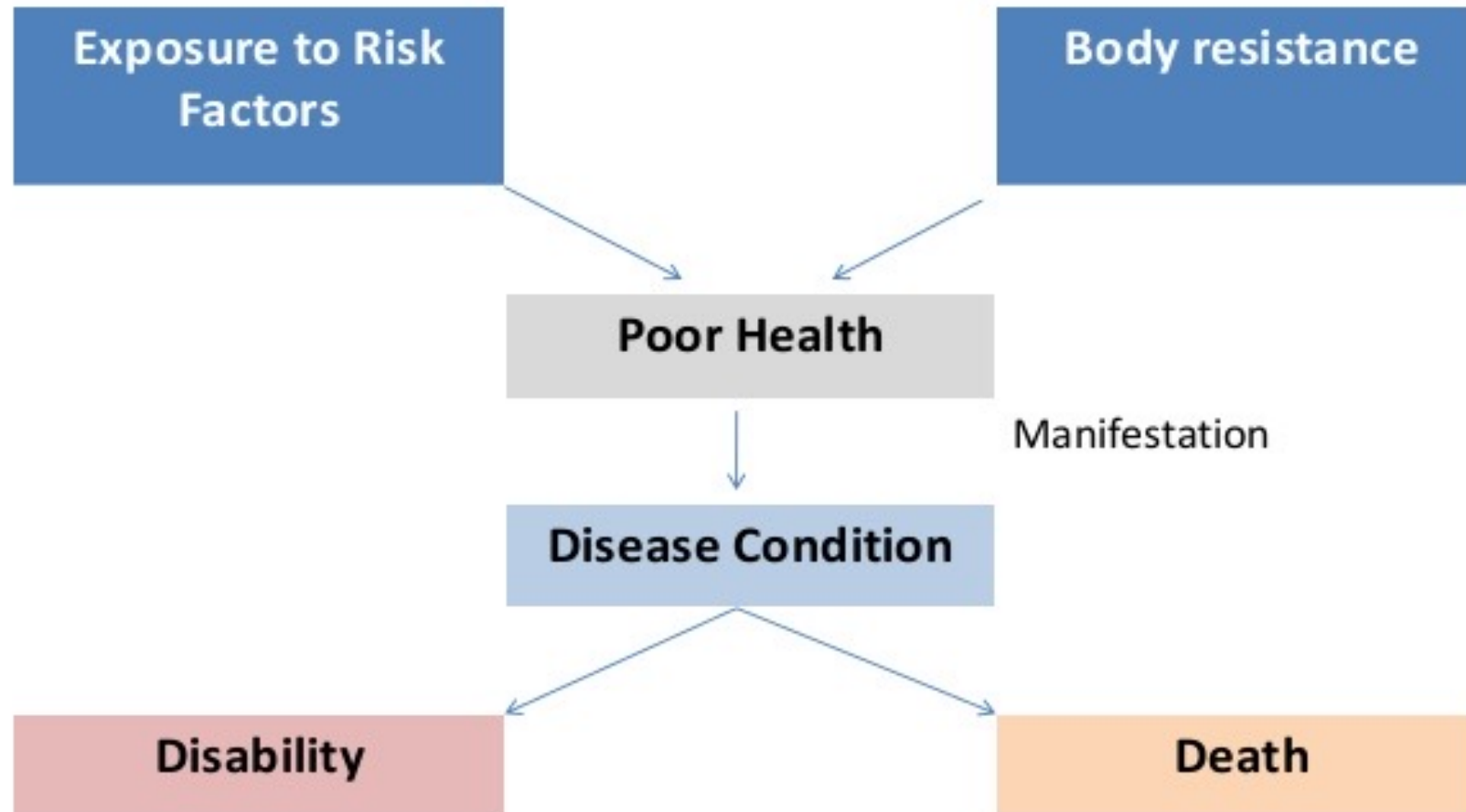
What is Health?

The World Health Organization defines Health of an individual as the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (1948)

The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition



A Model of Health



How to measure Health of an Individual?

**Subjective measures,
Physical measures,
Biochemical parameters, etc**





Public Health



Public Health as health of people



Public Health as a science



Public Health as a practice



Public Health as a System



Public Health as health of people

Public Health means health of a group of people, not an individual



How to measure Public Health?

- Life expectancy
- Fertility and Mortality (Birth and Death) rates
 - Morbidity & Disability rates
 - Socioeconomic indicators
 - Environmental indicators



Public Health as a science

a science or discipline, which studies and implements measures for control of communicable diseases, primarily by sanitation and vaccination (old view)

a multi-disciplinary field, which includes the use of basic and applied science, education, the social sciences, economics, management and communication skills to promote the welfare of the individual and the community (more modern view)



C-E. A. Winslow



- "a seminal figure in public health, not only in his own country, the United States, but in the wider Western world."

Encyclopedia of Public Health

- Classic definition of public health as a science



Public Health by C-E. A. Winslow, 1920

the science and art of (1) **preventing disease**, (2) **prolonging life**, and (3) **organized community efforts** for (a) sanitation of the environment, (b) the control of communicable infections, (c) the education of the individual in personal hygiene, (d) the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and (e) the development of social machinery to ensure everyone a standard of living adequate for the maintenance of health, so organizing these benefits as to enable every citizen to enjoy his birthright of health and longevity



Public Health Studies

- **Ecology**
- **Environmental Health:**
 - Nutrition
 - Occupational Health
- **Social Medicine**
- **Medical Sociology**
- **Epidemiology**
- **Biostatistics**
- **Community Medicine**
- **Preventive Medicine**
- **Health Promotion**
 - Health Education
- **Health Economics**
- **Health Management**
- **Demography**



Approaches to Public Health: Ancient Times

- For many centuries, explanations for disease were based not on science, but on religion, superstition, and myth
- Around 400 BCE the idea of four bodily humours was established by Hippocrates
- Greek medicine was based on these four humours – the imbalance of humours was the direct cause of all disease

Approaches to Public Health: Ancient Times

- **Ancient India:**
 - building codes of cities, Herbal medicine, major texts of medicine and surgery, personal hygiene, sanitation, water supply engineering in Manu Laws.
 - Atreya Punarvasu is a renowned scholar of Ayurveda, the author of *Bhela Samhita* (6 BCE)
- **Ancient Egypt:**
 - Epidemics of parasites, surgical skills, personal hygiene
- **Ancient Greece: Hippocrates**
- **Ancient Rome:**
 - town planning, water supply and sewage systems, etc.



Medieval Period (5-15 Centuries AD):

- In Europe Christian and Pagan cultures - disease as punishment for sin, treating by prayer, penitence and exorcising
- In East – first medical schools by Abu Ali Ibn Sina, Rhazes in 7 cnt, in Salerno (Italy, 10 cnt)
- Medical schools and hospitals in Cairo, Baghdad, Damask – 12-16 cnt.
- Leprosy and Bubonic plague



Approaches to Public Health: 19th Century

- The 19th century marked a great advance in public health
- The “sanitary-environmental approach” – focused on ensuring people lived and worked in healthy conditions
- The “biomedical approach” – late 19th century: enter bacteriology
- Early 20th century: move toward personal care

Approaches to Public Health: 20th and 21st Centuries

- “Social-behavioural approach”, which focuses on lifestyles and behavioural change drawing on psychological theories to reduce disease risk factors
- Health promotion emerges more strongly
- Efforts to change behaviour have rarely had sustainable health gains in the absence of more structural changes to the conditions shaping people’s health in their everyday lives

Recent History of Public Health: International Milestones

- Alma-Ata Declaration on Primary Health Care (1978)
- Ottawa Charter for Health Promotion (1986)
- International Conference on Health Promotion, Adelaide (1988)
- WHO Health for All in the Twenty-first Century adopted (1998)
- UN adopted eight Millennium Development Goals (MDGs)
- Adelaide Statement on Health in All Policies (2010)
- Rio Political Declaration on Social Determinants of Health (2011)
- UN General Assembly Resolution on the Prevention and Control of Non-Communicable Diseases (2011)
- UN adopted seventeen Sustainable Development Goals (SDGs)
- Second Adelaide Statement on Health in All Policies (2017 and updated in 2019)



Social Medicine

Social Medicine deals with a social fabric of population's health, knowledge and methods of obtaining knowledge appropriate to view health of population in a social context

The term “Social Medicine” is introduced by Dr. Jules Guérin in 1848 (*Gazette Medicale de Paris*). Guérin argued that the goal could be effectively achieved if knowledge and information regarding the relationships among medical issues, social factors and public affairs were systematically integrated into the framework of social medicine



Components and Goals of Social Medicine

- **Social well-being**
- **Preventive medicine**
- **Characteristics of medical care**
- **Health of population**
- **Increase resources for the promotion of social well-being**
- **Encourage preventive medicine**
- **Ensure universal and equitable access to and appropriate use of an effective and efficient medical care system**
- **Strengthen governmental health authorities**



SM for medical students

Medical workers should:

- 1) See a patient as a social creature,**
- 2) Understand that social aspects of their lives effect their health, their exposure to illness and illness-producing behaviors, and their capacity to mobilize resources to improve well-being**



SM for medical students

A doctor (public health specialists) should take actions to improve housing, nutrition, educational opportunities, and employment opportunities; eliminate poverty, the inequities and inadequacies of the medical care delivery system...and in society at large



Persons in the history of Social Medicine



Rudolf Ludwig Karl
Virchow
(1821-1902)
the “Father” of Social
Medicine



Virchow's career

- A pathology lecturer at Berlin medical school
- Pioneer in establishing cell doctrine in pathology and effects of disease in the body
- Introduced the terms *thrombus* and *embolus*, *leukocytosis* and *leukemia*, *amyloid* and *heme pigments*, *Echinococcus liver tumor*
- Discovered the pathophysiology of trichinosis, called for compulsory meat inspection in Germany



Virchow's Accomplishments

- **Designed and supervised Berlin sewage system**
- **Mandatory meat inspection**
- **Ventilation and heating of public buildings**
- **School health services**
- **Improvement of working conditions of health personnel, esp nurses**
- **Analyzed social structure of society and how it related to the spread of disease**



“Revolutionary ideas”

- **Public provision of medical care for the indigent, including free choice of physician**
- **Prohibition of child labor**
- **Protection for pregnant women**
- **Reduction of work hours in dangerous occupations**
- **Control of toxic substances at work**
- **Adequate ventilation at work sites**



Typhus epidemic in Upper Silesia

- **Epidemic of relapsing fever among coal miners and their families in Prussian province of Upper Silesia in Feb/March 1848**
- **Virchow spent 3 weeks in early 1848 investigating the Polish families and their conditions in Silesia**
- **Virchow's findings and report earned him notoriety as a progressive leader in Germany, gave birth to the social medicine movement, and altered the trajectory of his career**



Report on the Typhus Epidemic in Upper Silesia, 1848

- **Geographical, anthropologic, and social account of Silesia**
- **Description of housing, education, diet, drinking, medical beliefs**
- **Analysis of the role of the Catholic church, and perpetuation of caste-like social stratification**
- **Detailed clinical account of typhus, nine case descriptions, five autopsy reports**
- **Assesses validity and accuracy of available health statistics of typhus**
- **Analyzes morbidity and mortality of typhus by age, sex, occupation, social class**



Conclusions of Report on the Typhus Epidemic in Upper Silesia, 1848

- **Virchow reported that the underlying causes of the epidemic were more social than medical**
- **Economic and political conditions in Upper Silesia played a significant role**
- **The conditions in which the workers were forced to live, particularly bad housing with malnutrition, that made them vulnerable to disease**



Quotes

“There cannot be any doubt that such a typhus epidemic was only possible under these conditions and that ultimately they were the result of the poverty and under-development of Upper Silesia. I am convinced that if you changed these conditions, the epidemic would not recur. In theory, the answer to the question as to how to prevent outbreaks in Upper Silesia is quite simple: education, together with its daughters, freedom and welfare.”



With one and a half million you cannot begin with palliatives, if you want to achieve anything you have to be radical.”

“The task of any reasonable and democratic government will always be to educate the people and liberate them, not only materially but spiritually.”

“The absolute separation of school and church is more necessary in Upper Silesia than anywhere.”

“That is why I insist that free and unlimited democracy is the single most important principle. If we get free and well-educated people then we shall undoubtedly have healthy ones as well.”



Virchow and the birth of Social Medicine

He advocated that medicine be reformed on the basis of the next principles:

- 1. That the health of the people is a matter of direct social concern**
- 2. That social and economic conditions have an important effect on health and disease and that these relations must be subjected to scientific investigation**
- 3. That the measures take to promote health and to combat disease must be social as well as medical**

(The Medical Reform, 1848)

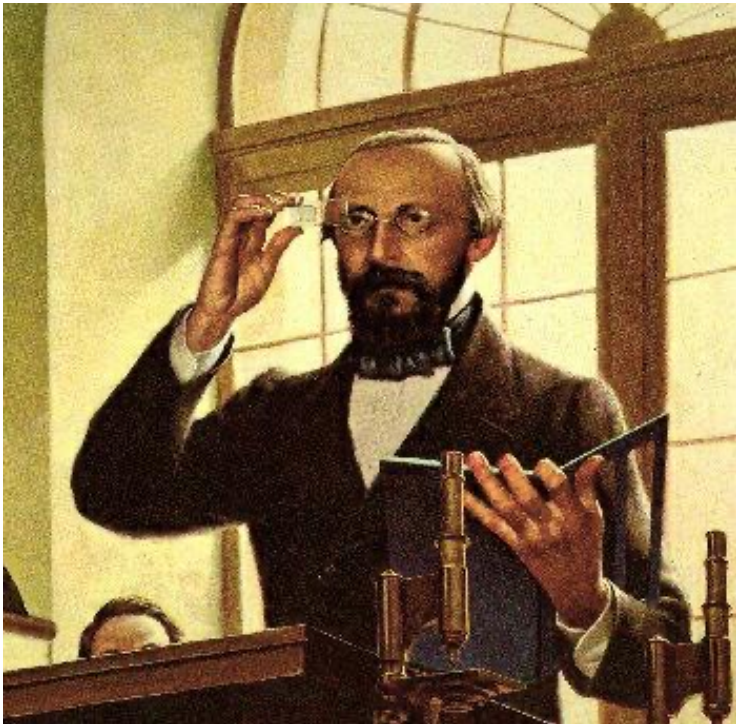


Virchow's contemporaries

- **Max von Pettenkoffer** – dogged resistance to the theories of Pasteur and Koch that bacterium was necessary and sufficient
- **Alfred Grotjahn** – rescued insistence on social factors other than hygiene from developing into solely a movement for sanitary reform, as it had in UK
- Social Medicine spread throughout continental Europe in late 1880s, social medicine incorporated into medical education and practice in Czechoslovakia, USSR, France, Belgium



R. Virchow, *Die Medicinische Reform*, 1848



**Medicine is a social science,
and politics nothing but
medicine on a grand scale.**



Friedrich Engels.

Issues covered in England

- **Environmental toxins, lead poisoning**
- **Infectious diseases such as TB, typhus**
- **Nutrition and food supply**
- **Alcoholism**
- **Maldistribution of medical personnel**
- **Mortality rates and social class**
- **Industrial accidents**
- **Occupational diseases of the musculoskeletal system, eye, lung**



Salvador Allende

- Learned of health problems of the poor by working as an autopsy assistant
- President of medical student association, led a school strike against the administration
- Founded the *Journal of Social Medicine*
- Wrote *The Structure of National Health* which would serve as blueprint for national health service in Chile
- Appointed Minister of Health in 1940
- Established the Chilean Medical Association
- Wrote legislation that created the Chilean National Health Service (SNS) in 1940s
- Reformed medical curriculum in Chile to include social science.



Salvador Allende

- **Similar to Engels' treatise on working class health problems**
- **“It is impossible to give health and knowledge to a people who are malnourished, who wear rags, and who work at a level of unmerciful exploitation.”**
- **Could not hope to cure the sick without working towards a more egalitarian economic system**



Salvador Allende

- **Nutrition and earning power**
- **Housing conditions**
- **Sanitation and excess mortality**
- **Population density and infectious disease**
- **Wage differentials b/w men/women**
- **Tuberculosis and class differentials**
- **Typhus and pauperization**
- **Dysentery, typhoid, diphtheria, pertussis**
- **Alcoholism and social misery**



Salvador Allende

- **Wage restructuring**
- **Improvement of milk supplies**
- **Land reform**
- **Rent control in private sector**
- **Reorganization of Ministry of Health**
- **Proposed nationalizing the drug industry and control of pharmaceutical production**
- **Helped develop national generic drug formulary**



Contemporary social medicine

- **Contemporary social medicine in the face of high tech medicine**
- **Antibiotics revolution, but MDR tbs, HIV**
- **Changed content and role of social determinants of health (Migration, Globalisation, etc)**
- **Persistence of class-related inequalities in disease prevalence**
- **Preparedness to pandemics (COVID-19)**



If disease is an expression of individual life under favorable conditions, then epidemics must be indicative of mass disturbances of mass life.

R. Virchow, *Report on the Typhus Epidemic in Upper Silesia, 1848*



Medical statistics will be our standard of measurement: we will weigh life for life and see where the dead lie thicker, among the workers or among the privileged.

R. Virchow, *Die Medicinische Reform*, 1848



Further readings:

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