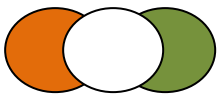
Post Graduate Certificate Course in Health System and Management - 2013



Module 1: Chapter 3

Evolution of Public Health

Indian Association of Preventive and Social Medicine

Gujarat Chapter

Evolution of Public Health

Learning Objectives:

At the end of chapter, the students should be able to learn:

1) Public health in different era in globe
2) Public health in different era in India
3) Some important mile stone of public health in India

EVOLUTION OF PUBLIC HEALTH IN WORLD

Evolution of public health in World has passed through various stages. These can be segmented into various eras.

EMPIRICAL ERA (Until 1850)

During this period, the medicine and health science belonged to empirical era. The focus was on ***symptoms***. The art of medicine revolved around the diagnosis and treatment of symptoms by all kinds of available home medicaments considered appropriate at that time which had no bases of science are scientific evidence. People put the blame on witches or evil spirits and treated the sickness or symptoms with magic cures, cupping and application of leaches to draw bad blood out of the body and administered a variety of purgatives. People held several kinds of wrong beliefs like evil eyes, past sins, curse of god, and being possessed by an evil spirits (ghost intrusion into body) in cases of all mental illness.

During the ancient Egyptian period developments such as toilets and bathing were introduced, but this was on a private level. While Egyptian religious beliefs encouraged washing the body, thereby improving the health of the population. Patients were visiting the temples of the god of healing, but the temples were not part of a public health system. There was some development of public health by the Minoans, a Mediterranean civilization about 3000-1050 BC. The Minoans built baths and constructed channels to supply clean water and remove waste. However, these facilities were lost when the Minoan civilization collapsed and their palaces and towns were destroyed by natural disasters and invading Greek forces.

The Greeks encouraged healthy living and pursued regimens of exercise and hygiene such as those prescribed by Hippocrates in his Regimen (4th century BC). Hippocrates is often called a father of Medicine. He studied and classified the diseases based on observation and reasoning. He challenged the tradition of magic in medicine and initiated a radically new approach to medicine i.e. application of clinical methods in medicine.

First half of nineteenth century, was the period of the industrial revolution and cholera epidemics. The industrial revolution brought about the need for increased manpower and massive use of laboring classes. The life expectancy rate based on social class was: gentry, 35 years; tradesmen, 22 years; and laborers, 15 years. Approximately one-half of the children of the working classes died before age of five. William Farr, convinced that mortality increased with density of population. From 1839 William Farr collected statistics from parish registers on births and deaths. He was able to show the impact of poor living conditions on life expectancy and the differences between different areas.

Sanitary Theory: The theory of miasma, which said that disease is due to causes contained in bad air including the cosmic radiations, found much support during the 18th and 19th century. It made sense to the English Sanitary reformers of the mid-nineteenth century. Miasma explained why cholera and other diseases were epidemic in places where the water was un-drained and very foul-smelling. The theory led to improvements in the sanitation systems, which led to decreased episodes of cholera, which helped to support the theory. This caused public health reforms and encouraged cleanliness, even though some doctors still did not wash their hands between patients. They believed that the miasma were only airborne and would not be stuck on the doctors' hands.

The cholera Epidemic of 1832 highlighted the problem of disease. In 1837 Chadwick appointed doctors to investigate the London districts with high typhus mortality. The report highlighted the squalor of the inhabitants and the insanitary conditions. Chadwick compiled a survey of "Sanitary condition of laboring classes of great Briton" in 1842 in which he recommended the "Sanitary Idea" with creation of a public health authority to provide drainage, potable water, sanitation, regulation of buildings etc. The first British Public health Act was passed in 1848 and emphasized state's responsibility for the health of its people. The city of London also had its own private Sewers Act 1848.

BACTERIOLOGICAL ERA (1850-1900)

During this era, medicine became a science. Micro-organisms of various diseases were discovered or isolated and grown on cultures. The focus shifted from ***symptoms*** **to disease**. Much more emphasis was laid on diagnosis and treatment of disease. This era was also called as basic science era.

John Snow, an English epidemiologist studied the epidemiology of cholera in London from 1848 to 1854 and established the role of polluted drinking water in the spread of cholera. In 1856, William Budd reported outbreak of typhoid fever in rural north of England due to polluted drinking water. These two discoveries were remarkable because at that time

causative agents of Cholera and Typhoid were not identified. Then came the demand for clean water from people.

Free vaccinations were made available through the Poor Law Medical Services in 1840. In 1853 vaccination was made compulsory for all children with the first year of life. In 1864 the first contagious Disease Acts was passed which provided for compulsory examination of women believed to be "Common prostitutes" who were to be locked up for up to one year without right to habeas corpus if they were diagnosed to have sexually transmitted disease. In 1875 the Public Health Act was codified including all existing sanitary legislation.

A shift in public health took place when individuals began to be categorized into "**Risk populations**". These were on the basis of analysis of disease by Edmund Parkes. Soon thereafter came the germ theory which was based on the concept that specific microbes caused specific diseases. Developments in Bacteriology in 1880's were embraced by the preventive profession. A model was developed in which one agent was related to one disease (Robert Koch).

A dramatic increase in industrialization in the late 19th century, coupled with urbanization, had profound effects on urban water supplies. There was pollution from human wastes from homes and the workplace disposed in the waterways. Effluents containing organic and inorganic toxic and non-toxic material were dumped into the same waterways. During this time medical theories were limited to bacteriological paradigms. In 1898 when US sent troops into Cuba they lost 968 men in battle and 5438 due to infectious diseases. When yellow fever threatened troops in Cuba in 1900 an army commission under Walter Reed confirmed that the disease was transmitted by mosquito and eliminated the disease from Havana.

PREVENTIVE MEDICINE AND CLINICAL SCIENCE ERA (1900-1950)

Hospital, dispensaries and health centers were developed and focus shifted from diagnosis and treatment of disease to diagnosis and treatment of patient. This was an era of preventive medicine, treating/curing the sick in hospitals/health centers by using the advanced knowledge of clinical sciences, laboratory tests and other advances. The whole approach was patient-centered. Subsequently, it was realized that an individual needs to be treated as a whole in totality, including family. The concept of family physicians developed. But we know for sure that the individual approach or for that matter early diagnosis and prompt treatment has benefited "individuals" but it has not led to eradication of a disease or control of a disease. Only community medicine will eradicate the disease or control a disease ultimately and it is much more beneficial. The answer eliminating a disease or

controlling a disease does not lie in opening more hospitals and more clinics. Community-based actions and approaches are required to control and eliminate both communicable and non-communicable disease (lifestyle disease).

The US Army in Philippines had to battle with malaria, dengue, dysentery and beriberi to continue to remain in the region. The French attempt to build a canal across Panama was abandoned due to disease. The American attempt succeeded due to an intensive campaign against mosquitoes and hence.

During World War II the Public Health service established the control of Malaria in war areas. After the war the organization was converted into the Centers for Disease Control and Prevention. In 1907 preventive medicine practitioners and town planners got together to bring about housing reforms. Simultaneously, legislations were passed for free school meals, medical inspection of school children and antenatal care. These concerns were clubbed by society into "Endowment of motherhood" movement which included targeting of malnutrition and breaking habits of inefficient and unhygienic motherhood. A great emphasis was placed on health education.

Newsholm in 1910 introduced the concept of "Causal attack" upon disease after redefining the environment from a "Social Standpoint". In Germany, Pettenkofer first calculated the financial returns on public health investments to prove the value of sanitary improvement in reducing death from typhoid. Bacteriological analysis was used to determine the presence of coliform bacteria in municipal water supplies. Since coliform bacteria are present in great numbers in humans and animals but are not typical water organisms, their presence served as an indicator of fecal pollution and possible pathogenic organisms.

COMMUNITY HEALTH/PUBLIC HEALTH ERA (1950-1977)

During this era, profound change was observed. It was realized that medicine as a "social science" could not solve a health problem by treating and caring of sick individuals in the hospitals or dispensaries. The focus in the second health of the 20th century shifted to community and community diagnosis and treatment. The whole community should be the focus of health. Ensure health to total community and meet the health needs of health "community".

Accordingly, the approach to medicine shifted from treatment to care, coverage, reduction of incidence of disease burden and disability and "development of community" to achieve positive health.

Classical infectious disease rates have declined while increased rates of so-called modern diseases (heart disease, cancer and immune deficiency diseases) are now being observed

in epidemic proportions throughout the world. Classical public health organizations and systems are now in a state of flux because these structures were erected for classical communicable disease control. New problem-solving systems are needed in areas such as health care financing, medical care for the aged, environmental health protection and health care planning and administration.

"HEALTH FOR ALL ERA"- 1977 ONWARDS

During the year 1977, WHO adopted the strategy of "health for All by 2000." The emphasis was clearly focused on community to achieve a level of health which would permit all individuals to lead a socially useful and economically productive life through primary health care approach.

CNNA (Community Need Assessment Approach) was launched after an International Conference on Population and Development held at Cairo in 1994. In September 2000, representatives from 189 countries met at the Millennium Summit in New York to adopt the United Nations Millennium Declaration. The leaders made specific commitments in following areas: i). Peace, security and disarmament, ii). Development and poverty eradication, iii). Protecting common environment, human rights democracy and good governance iv). Protecting vulnerable, v). meeting the special needs of Africa and strengthening the United Nations

During last 30 years, the World become more clear in Developed and Developing nations. Developed nations were able to control their environment and able to established health care system as per the need of people effectively, but Life style and behavior related health problems are their main concerns. On the other hand developing nations are still struggling for environmental, social, political, economical issues in their nations and not reach to large proportion of their population to serve primary and basic health care. That lead to poor public health indicators even in 21st century.

Thus, it can be summed up that during various eras profound changes were taking place and focus was shifting from 'Symptoms' to 'bacteria or disease' to 'individual' to 'community'. As of now, the 'Community' is the focus or concern of all health sciences or medicine the community concern or focus means that whole population (urban, rural tribal, desert areas and slum dwellers) need to be ensured "health" and their "health needs" must be responded through community diagnosis assessment.

EVOLUTION OF PUBLIC HEALTH IN INDIA

India has one of the most ancient civilizations in recorded history. Around 3000 B.C., Excavation in the Indus Valley at Mohenjadaro and Harrappa showed well planned cities with drainage, houses and public baths built of baked bricks suggesting the practices of environmental sanitation, by ancient people. This shows hygiene and sanitation is an important in ancient public health.

Ancient Indian thoughts, philosophy developed on concepts of spirituality. Ayurveda is the ancient science of life. Charaka has described the objective of medicine as two fold; preservation of good health and combating disease. Ayurveda emphasized the need for healthy lifestyle, including cleanliness and purity, good diet, proper behaviour and mental and physical discipline. Purity and cleanliness were to be observed in everything : jalasuddi (pure water), aharasuddi (clean food), dehasuddi (clean body), manasuddi (pure mind) and desasuddi (clean environment).
Ayurveda calls upon the physician to treat the patient as a whole: Charaka Samhita prescribes an elaborate code of conduct.

During 600 B.C. - 600 A.D. was dominated by the religious teaching of Buddhism and Jainism. Medical education was introduced in the ancient universities of Taxila and Nalanda.

British rules established numbers of small dispensaries and large hospitals and medical institute during their ruling in India. Public health educational and research institutions, such as the Calcutta School of Tropical Medicine and Hygiene and the All-India Institute of Hygiene and Public Health, also in Calcutta, were established in British India in the first half of 20th century in order to carry out public health training and research in the region.

After independence, Govt. of India launched many national health programmes and strengthens public health system through various Five year plans. Today, Urban areas have two clear cut demarcated population i.e. slum and non-slum. People of slum are economically poor with poor health status and care services. Rural India also has its own limitation of awareness and accessibility of various kind of health services.

Some Important Milestone of Public Health in India

Year	Milestone
1825	Quarantine Act promulgated
1881	1st Indian Factories Act was passed. 1st Census was taken
1897	The Epidemic Disease Act was promulgated
1930	All India Institute of Hygiene and Public Health, Calcutta was established
1939	First Rural Health Training Center was established at Singur , near Calcutta
1946	The Bhore Committee submitted its report
1948	India joined WHO as member country. ESIS Act 1948 was passed
1950	The beginning of 1st Five Year Plan
1953	National Malaria Control Programme was implemented. Nationwide Family Planning Programme was launched.
1954	National Leprosy Control Programme was started
1958	NMCP was converted to National Malaria Eradication Programme
1962	School Health Programme was started
1963	National Institute of Communicable disease was inaugurated
1975	India became Smallpox free. ICDS scheme was launched
1977	Eradication of Smallpox from India was declared. WHO adopted the goal "Health for All"
1983	National Health Policy was approved. Guinea –worm eradication programme was launched
1987	New 20 point programme was launched. National Diabetes Control Programme and National AIDS Control Programme was launched.
1992	CSSM (Child Survival and Same Motherhood Programme was launched.
1993	RNTCP was. National Nutrition Policy 1993 formulated.
1994	Plague returned after 28 years of silence.
1996	Pulse Polio Immunization campaign started
1997	RCH Programme launched
2000	National Population Policy announced. India was declared as Guinea-worm free country.
2002	National Health Policy 2002 announced
2003	NVBDCP launched
2004	Integrated Disease Surveillance Project launched
2005	RCH-II launched. Janani Surakha Yojana launched. NRHM launched
2006	IMNCI launched in 16 states
2007	Indian Public health standards for PHC and sub-centre formulated.
2008	Non-communicable disease Programme as pilot project launched.

2009	Pandemic Influenza A (H1N1) 2009 outbreak reported
2010	1st phase of Measles Catch-Up Campaign began in India.
2011	Last case of Poliomyelitis reported from West Bengal
2012	Janani Shishu Surakha Karyakram launched. NSSK (Navjat Shishu Surakha Karyakram) launched.