1. **Introduction:**

*Health* is the general condition of a person in all aspects. It is also a level of functional and/or metabolic efficiency of an organism, often implicitly human. At the time of the creation of the World Health Organisation (WHO), in 1948, *health* was defined as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity".

Only a handful of publications have focused specifically on the definition of health and its evolution in the first 6 decades. Some of them highlight its lack of operational value and the problem created by use of the word "complete." Others declare the definition, which has not been modified since 1948, "simply a bad one."

Overall health is achieved through a combination of physical, mental, and social well-being, which, together is commonly referred to as the Health Triangle called as Determinants of health. According to WHO, the main determinants of health include the social and economic environment, the physical environment and the person's individual characteristics and behaviours. The physical environment is perhaps the most important factor that should be considered when classifying the health status of an individual.

*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." It is concerned with threats to the overall health of a community based on population health analysis. The population in question can be as small as a handful of people (for instance, in the case of endemic) or as large as all the inhabitants of several continents (for instance, in the case of a pandemic). Public health has many sub-fields, but is typically divided into the categories of epidemiology, biostatistics and health services. Environmental, social and behavioural health and occupational health are also important fields in public health.

The focus of public health intervention is to prevent rather than treat a disease through surveillance of cases and the promotion of healthy behaviours. In addition to these activities, in many cases treating a disease can be vital to preventing it in others, such as during an outbreak of an infectious disease. Vaccination schedule for Polio is an example of one of the public health measures.

Unlike clinical professionals, public health is more focused on entire populations rather than on individuals. Its aim is preventing from happening or re-occurring health problems by
implementing educational programs, developing policies, administering services, and conducting research.

**Disease** is a state of discomfort in which the normal functioning of the body is disturbed. A disease is said to be **communicable** if it spreads from one person to another and **non-communicable** if it does not spread from one person to another. A communicable disease may spread through air, water, food and contacts. It is also called as Infectious disease. The examples of communicable diseases are influenza, polio, typhoid, tuberculosis, measles, mumps, AIDS etc. and that of non-communicable diseases are blood pressure, diabetes, asthama, goitre etc.

We shall be analysing the data on tuberculosis collected from RNTCP, Mumbai.

**Tuberculosis:**

Tuberculosis (TB) is an infectious disease caused by a Bacterium, Mycobacterium tuberculosis. It is spread through the air by a person suffering from TB. A single patient can infect 10 or more people in a year.

India has a long and distinguished tradition of research in TB. Studies from the Tuberculosis Research Centre in Chennai and the National Tuberculosis Institute in Bangalore provided key knowledge to improve treatment of TB patients all around the world.

Modern anti-TB treatment can cure virtually all patients. It is, however, very important that treatment be taken for the prescribed duration, which in every case is a minimum of 6 months. Because treatment is of such a long duration and patients feel better after just 1-2 months, and because many TB patients face other problems such as poverty and unemployment, treatment is often interrupted. Therefore, just providing anti-TB medication is not sufficient to ensure that patients are cured. Today, for the first time since the discovery of the first anti-TB medicines in 1944, there is hope of stopping TB. This breakthrough is a strategy known as DOTS, an acronym for **Directly Observed Treatment, Short-course**.

The Director-General of the World Health Organization has declared that, "The DOTS strategy represents the most important public health breakthrough of the decade, in terms of lives which will be saved." Directly Observed Treatment, Short-course (DOTS).
**Directly Observed Treatment Short course (DOTS) strategy:**

DOTS is a systematic strategy to control TB disease. This has the following 5 components:

- Political and administrative commitment
- Good quality diagnosis, primarily by sputum smears microscopy
- Uninterrupted supply of quality drugs
- Directly observed treatment (DOT)
- Systematic monitoring and accountability

**MDR TB:**

When TB patients do not take their medicine as prescribed, the TB bacteria may become resistant to a certain drug. This means that the drug can no longer kill the bacteria. Drug resistance is more common in people who:

- have spent time with someone with drug-resistant TB disease
- do not take their medicine regularly
- do not take all of their prescribed medicine
- develop TB disease again, after having taken TB medicine in the past
- come from areas where drug-resistant TB is common (Russia, former USSR, Southeast Asia, Latin America, Haiti, Dominican Republic, and the Philippines)

Sometimes the bacteria become resistant to more than one drug. This is called multidrug-resistant TB or MDR TB. People with MDR TB disease must be treated with special drugs. These drugs are not as good as the usual drugs for TB and they may cause more side effects.
Need to Control TB:

- **Incidence:** 1.9 million new TB cases annually
  - Incidence more in north and in urban areas
- **Prevalence:** 3.8 million bacteriological positive (2000)
- **Deaths:** about 325,000 deaths due to TB each year
- **2.6 million people living with HIV; ~ 1.2 million co-infected with HIV and TB**
  - ~5% of TB patients estimated to be HIV positive
- **MDR-TB** in new TB cases is ~3% and in previously treated cases is ~12%
- TB affects predominantly economically productive age group leading to huge socio-economic impact
*REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME (RNTCP)*

National Tuberculosis Control Programme (NTCP) is implemented in the State since 1962. The programme is monitored by the Deputy Director of Health Services (T.B., B.C.G.) located at Mumbai. The District Tuberculosis Centre (DTC) is the basic unit of the control programme. There are 29 D.T.C.s and 1995 Peripheral Health Institutions (PHI) in the State. These Centres perform the following activities:

- Case finding.
- Early and regular treatment.
- Case holding.
- Management.
- Recording and Reporting.

The above activities are carried out by integration with general Health Services in Rural and Urban areas. There is facility of Indoor admission for complicated cases, for which 20 bedded wards are available at every DTC. In addition, there are 7 T.B. Hospitals / Sanatoria. There is one Tuberculosis Control and Training Centre at Nagpur, for training the peripheral staff.

The RNTCP is implemented in the State as per the guidelines of Govt. of India since 1998-99.

**RNTCP – Goal and Objectives**

- Goal
– The goal of TB control Programme is to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India.

● Objectives:

– To cure 85% newly detected sputum positive cases through Directly Observes Treatment Short course chemotherapy (DOTS)

To detect at least 70% of estimated s