Typhoid fever is a communicable disease, found only in man and occurs due to systemic infection mainly by *Salmonella typhi* organisms. It is an acute generalised infection of the reticulo-endothelial system, intestinal lymphoid tissue, and the gall bladder.

**Historical background**

Until the first quarter of the 19th century, typhoid fever was not recognised as a separate clinical entity and was often confused with other prolonged febrile syndromes such as typhus fever of rickettsial origin. *Typhos* in Greek means smoke and typhus fever got its name from smoke that was believed to cause it. *Typhoid* means typhus-like and thus the name given to this disease.

It was only in late 19th century that the disease was finally established as a distinct clinical entity. The term enteric fever was introduced in 1869 and now includes both typhoid fevers and paratyphoid fevers.

**Epidemiological features**

It is a disease of poor environmental sanitation and hence occurs in parts of the world where water supply is unsafe and sanitation is substandard. It still remains an important public health problem in many developing countries of the world although it is difficult to estimate its real global impact due to problems related to clinical and laboratory diagnosis. The socio-economic impact of the disease is significant because most of the times, several months are necessary for a patient to recover completely and resume normal work again.

**Magnitude of the problem**

It is a disease mainly of the developing countries. Developed countries have brought down the incidence of typhoid fever to very low levels. For example, in UK, the incidence of this disease is reported to be just one case per 1,00,000 population. However, the disease is still rampant in Asia, Africa, and Latin America. In 1994, for example, 26,55,000 cases (incidence : 500 cases/million) were reported from Africa with 1,30,000 deaths whereas Asia reported 13,310,000 cases with 4,40,000 deaths and Latin America with an incidence of 150 cases/million population reported 5,95,000 cases and 10,000 deaths. Thus, the mean incidence of typhoid fever in developing countries is estimated between 150 cases/million population/year in Latin America to 1000 cases/million population/year in some Asian countries.

It is a major public health problem in India. The disease is endemic in almost all parts of the country with periodic outbreaks of water borne or food borne diseases. In India in 1992, about 3,52,980 cases with 735 deaths were reported. The number was 3,57,452 cases and 888 deaths in 1993 whereas in 1994, about 2,78,451 cases and 304 deaths due to typhoid fever were reported. Case fatality rate due to typhoid has been varying between 1.1% to 2.5 % in last few years.

**The salient epidemiological features**

Age group: Typhoid fever may occur at any age but it is considered to be a disease mainly of children and young adults. In endemic areas, the highest attack rate occurs in children aged 8-13 years. In a recent study from slums of Delhi, it was found that contrary to popular belief, the disease affects even children aged 1-5 years. Older people appear to be relatively immune, presumably because of frequently reinforced
acquired immunity through numerous sub-clinical exposures to typhoid bacilli.

Gender and race: Racial susceptibility and gender differences in incidence of typhoid fever are not supported by any data. However, because of greater mobility, perhaps, typhoid fever cases are more commonly seen in males than in females. On the contrary, females have a special predilection to become chronic carriers.

Occupation: Certain categories of persons handling the infective material and live cultures of _S. typhi_ are at increased risk of acquiring infection. Cooks, who are carriers, obviously pose a great threat of causing outbreaks. However, cooks are not at any increased risk to become carriers.

Socio-economic factors: It is a disease of poverty as it is often associated with inadequate sanitation facilities and unsafe water supplies.

Nutritional status: There is no concrete evidence to indicate that malnutrition increases or decreases susceptibility to typhoid fever but malnutrition may enhance the susceptibility to typhoid fever by altering the intestinal flora or other host defences.

Incubation period: Usually 10-14 days but it may be as short as 3 days or as long as 21 days depending upon the dose of the inoculum.

Mode of transmission: The disease is transmitted by faeco - oral route or urine - oral routes — either directly through hands soiled with faeces or urine of cases or carriers or indirectly by ingestion of contaminated water, milk, food, or through flies. Contaminated ice, ice-creams, and milk products are a rich source of infection.

Environmental factors: Though the cases are observed throughout the year, the peak incidence of typhoid fever is reported during July - September. This period coincides with the rainy season and a substantial increase in fly population. Typhoid bacilli are commonly found in water, ice, food, milk, and soil. These organisms don’t multiply in water. Many of them perish within 48 hours but some may survive for about 7 days. Survival can be up to a month in ice and ice-creams and up to 70 days in the soil irrigated with sewage. Typhoid bacilli grow in milk without altering its taste or appearance. Vegetables grown in sewage farms or washed in contaminated water are a health hazard. These factors are compounded by social factors such as pollution of drinking water supplies, open air defecation, and urination, low standards of food and personal hygiene, and health ignorance.

Reservoir of infection: Man is the only known reservoir of infection - cases or carriers. A case is infectious as long as the bacilli appear in stool or urine. Carriers may be temporary or chronic. Temporary (convalescent or incubatory) carriers usually excrete bacilli upto 6-8 weeks. By the end of one year, 3-4 per cent of cases continue to excrete typhoid bacilli. Persons who excrete the bacilli for more than a year after a clinical attack are called chronic carriers. A chronic carrier state can be expected to develop in about 3 percent of cases. Faecal carriers are more frequent than urinary carriers. A chronic carrier may excrete bacilli for several years either continuously or intermittently.

It is a disease which is amenable to control through modern public health measures.