Summary

- Death is a principle 'vital event' for which the vital statistics are collected and compiled by the vital statistics registration system. The other principal vital events for which vital statistics are collected and compiled are live births, fetal deaths, marriages and divorces. Secondly, adoptions, legitimations, annulments and legal separations may be included

- The vital statistics system includes the legal registration, statistical recording and reporting of the occurrence of vital events and the collection compilation and analysis, presentation and distribution of vital statistics. The vital statistics employs the registration method of collecting the data on vital events which typically involves the reporting to government officials of events as they occur and the recording of the occurrence and the characteristics of these events

- Broadly speaking death statistics are needed for the purpose of demographic studies and for public health administration. The most important use of death statistics include,
  - Analysis of the present demographic status of the population as well as its potential growth
  - Filling the administrative and research needs of the public health agencies in connection with the development
  - Operation and evaluation of the public health programs
  - Determination of administrative policy and action in connection with the programs of the government agencies other than those concerned with the public health and filling the need for information on population changes in relation to numerous professional and commercial activities

  Death statistics are needed to make the analysis of the past population changes which are required for making projections of population and other demographic characteristics

- The forces of mortality at age x is defined as the ratio of instantaneous rate of decrease in l of x to the values of lx. It is denoted by mu of x and is given by the expression: mu of x is equal to one by l of x into d l of x by l of x is equal to minus d by d of x into (log of l of x).It gives 'nominal annual rate of mortality', that is the probability of a person of age x exactly dying within the year if the risk of dying is same at every moment of the year as it is during the moment following the attainment of age x

- In measuring the longevity two concepts should be distinguished –
  - Life span
  - Life expectancy

- **Life Span:**

  The first concept tries to establish numerically the extreme limit of age in life. That is the maximum age that human beings as a species could reach under optimum conditions. There is no known exact figure under this concept. For purposes of defining the concept more precisely and of excluding rare cases, we might define life span as the age beyond which less than about 0.1 percent of the original cohort lives.

We know that very few persons live over a hundred of years; but, owing to lack of precision in records, it is not known exactly whether life span has been increasing, has remained constant or has declined with time. Life span appears to be about 100 and may not have changed in historical times

- **Life Expectancy:**

  The situation is different with respect to life expectancy, the expected number of years to be lived, on the average. Sufficiently accurate records have been available for some time for many countries from which estimates have been prepared. These estimates have generally come from a current life table, although in some instances they have prepared on the basis of the death statistics alone or of census data alone. According to this concept, longevity has shown a considerable improvement in modern times in most countries. On the other hand, for many centuries, there was apparently no upward trend in life expectancy and there has been little or no improvement still among some primitive groups

- The expectation of life at birth is the life table function most frequently used as an index of the level of mortality. It also represents a summarization of the whole series of mortality rates for all ages combined, as weighted by the life table stationary population. In fact the reciprocal of the expectation of life (e_0^0) 1 by e_0^0 is equivalent to the crude death rate (m^l) of the life table population as can be seen from the following derivation. M^l is equal to the total number of deaths by the total population is equal to l_0 by T_0 is equal to 1 by T_0 by l_0 is equal to 1 by e_0^0