

Health information and basic medical statistics

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Health information

- "A mechanism for collection, processing, analysis and transmission of information required for organising and operating health services, and also for research and training."

Health information

- Integral thought of the National health system
- Tool of management and the key input for the progress of any society.

Primary objective of health information

- Provide reliable, relevant, upto date, adequate, timely and reasonably complete information for health managers at all levels.
- sharing of technical and scientific information by all health personnel participating in the health services of a country

Data vs information vs intelligence

Data

Discrete observations of attributes or events that carry little meaning when considered alone

Information

Data that is transformed by reducing, summarising, adjusting them for variations such as age, sex, composition of population so that comparisons over time and place are possible.

Intelligence

transformation of information through integration and processing with experience and perceptions based on social and political values that produces intelligence

Requirements of health information systems

- Should be population-based
- Should avoid the unnecessary agglomeration of data
- Should be problem oriented
- Should employ functional and operational terms
- Should express information briefly and imaginatively
- Should make provision for the feedback of data

Components of a health information system

1. Demography and vital events
2. Environmental health statistics
3. health status : mortality, mobility, disability, and quality of life.
4. Health resources : facilities, beds, manpower.
5. Utilisation and non utilisation of health services attendance, admissions, waiting list.
6. Indices of outcome of medical care
7. Financial statistics related to the particular objective

Uses of health information

1. Measure the health status of the people and to quantify their healthcare needs.
2. For local National and international comparison of health status
3. For planning administration and effective management of health services and programs
4. for assessing whether health services are completing their objectives in terms of their effectiveness and efficiency
5. for assessing the attitudes and degree of satisfaction of the beneficiaries with the health system
6. For research into particular problems of health and disease

Sources of health information

1. Census
2. Registration of vital events
3. Sample registration system
4. Notification of diseases
5. Hospital records
6. Disease registers
7. Record linkage
8. Epidemiological surveillance

9. Other health service records

10. Environmental health data

11. Health manpower statistics

12. Population surveys

13. Other routine statistics related to health

14. Non quantifiable information

Census

the total process of collecting compiling and publishing demographic, economic and social data pertaining at a specified time or times, to all persons in a country or delimited territory.

Census

- Important source of health information
- First regular census in India was taken in 1881
- And others took place at 10 year intervals
- Legal basis of the census is provided by the census act of 1948
- supreme officer who directs guides and operates the census is the census commissioner for India

Registration of vital events

United Nations defines a vital events registration system as including “ legal registration, statistical recording and reporting of the occurrence of and the collection, compilation, presentation ,analysis and distribution of statistics pertaining to vital events ie. live births, deaths, fetal death, marriages, divorces, adoptions, legitimations, recognitions, annulments and legal separations.

The central births and deaths registration act 1969

- Came into force on 1st April 1970
- Time limit for registering the event of birth and death is within 21 days
- In case of default of fine can be imposed

Sample registration system

dual record system consisting of continuous enumeration of births and deaths by an enumerator and an independent survey every 6 months by an investigator supervisor

Notification of diseases

Purpose is to effect prevention and control of the disease.

Notification is also a valuable source of morbidity data ie the incidence and distribution of certain specified diseases which are notifiable.

At the international level the following diseases are notifiable to WHO in Geneva under the international health regulations viz. Cholera plague yellow fever

Currently the reporting responsibility fall on the health workers

Limitations of notification of diseases

1. Covers only a small part of the total sickness in the community
2. Suffers from a good deal of underreporting
3. Atypical and subclinical cases escape notification due to non recognition

In spite of the above limitations notification provides valuable information about fluctuations indices frequency, it also provides early warning about new occurrences or outbreaks of disease. The concept has been also extended to many non communicable diseases and conditions

Information from Hospital records

1. Geographic sources of patients
2. Age and sex distribution of different diseases and duration of hospital stay
3. Distribution of diagnosis
4. Association between different diseases
5. Period between disease and hospital admission
6. Distribution of patients according to different social and biological characteristics
7. Cost of hospital care

Indices such as bed occupancy rates ,duration of stay, cost effectiveness of treatment policies are useful in monitoring the use of hospital facilities.

Disease registers

Morbidity registers exist only for certain diseases and conditions such as stroke, myocardial infarction, cancer, blindness, congenital defects, and congenital rubella. tuberculosis and leprosy are also registered in many countries where there are common

Morbidity registers are valuable source of information as to the duration of illness case fatality and survival. These registers allow follow-up of patients and provide a continuous account of the frequency of disease in the community

Record linkage

It is the assembly and maintenance for each individual in a population of a file of the more important records relating to his health

Events commonly recorded our birth, marriage, death, hospital admission and discharge other useful data might also be included such as sickness absence from work, prophylactic procedures, use of social services etc.

Suitable method of studying associations between diseases, these associations may have etiological significance

Epidemiological surveillance

- In many countries where particular diseases are endemic special control or eradication programmes have been instituted
- as a part of these programs, surveillance systems are often set up to report on the occurrence of new cases and on efforts to control the diseases
- these programs have ended considerable morbidity and mortality data for the specific diseases

Other health service records

A lot of information is also found in the records of hospital outpatient departments, primary health centres and sub centres, polyclinics, private practitioners, mother and child health centres, school health records, diabetic and hypertensive clinics.

Environmental health data

Health statistics are now sought to provide data on various aspects of air, water and noise pollution, harmful food additives, industrial toxicants, inadequate waste disposal and other aspects of the combination of population explosion with increased production and consumption of material goods

can be useful in the identification and quantification of factors causative of disease

Health manpower statistics

Relates to the number of physicians, dentist, pharmacist, veterinarians, hospital nurses, medical technicians etc.

their records are maintained by the state medical or dental or nursing councils and the directorate of medical education.

Population surveys

The term health surveys is used for surveys relating to any aspect of health morbidity and mortality nutritional status.

if the main variable to be studied is disease suffered by the people the survey is referred to as morbidity survey.

Survey methods

- Health interview survey
- Health examination survey
- Health records survey
- Mailed questionnaire survey

- Health examination surveys provide more valid information than health interview surveys but the main disadvantage of health examination surveys is that it is expensive.
- the health interview survey is an invaluable method of measuring subjective phenomena such as perceived morbidity, disability and impairment, economic loss due to illness, expenditure incurred on medical care ,opinions ,believes and attitudes and some behavioral characteristics

Health records survey

Collection of data from health service records. Cheapest method of collecting data.

Disadvantages of health records survey

1. Not population-based
2. Reliability open to question
3. Lack of uniform procedures and standardization in the recording of data.