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ROUTINE COLLECTION OF HEALTH STATISTICAL DATA

by

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I. ON HEALTH STATUS OF THE COMMUNITY

(A) Notifiable infectious diseases

The main purposes of a system of notification of infectious diseases are:

1. to permit immediate action by the health authorities; and,

2. to provide a permanent record.

Speed is of the utmost importance for the immediate action. Accuracy of the data is the foremost consideration for the permanent record and such delay as may be necessary to ensure accuracy must be accepted. The permanent record can be used to study the incidence of disease and its distribution in the population, so that health problems can be defined, and plans made and developed to deal with them and to evaluate the success of preventive programmes. The data can also be used for research purposes with a view to contributing to knowledge of the causation and means of spread of diseases.

Notification is made by medical, and in some countries or parts of a country by non-medical, persons. In the latter case the diagnosis is often open to question. In certain countries facilities for confirmation of diagnosis are not available or not made use of, which is another factor affecting the accuracy of diagnosis. Notification of many infectious diseases

is followed in some countries by isolation of the case, terminal disinfection of the premises and other measures. The population of these countries, especially the relatives or parents of the patients, do not like or resent all or some of these actions. Doctors who notify cases are not liked and, consequently, will not be called by inhabitants to examine and treat patients. This factor will affect the completeness of notification. The degree of incompleteness of notification differs from district to district, from disease to disease and from period to period. As this subject is vast and requires a separate study it is considered advisable not to go deep into it.

Urgent problems of infectious diseases are still important in countries of the Eastern Mediterranean Region; notifications are, therefore, used primarily for the immediate action. This calls for urgent notification even on suspicion of disease so that control measures can be put into operation. Deficiencies in the original or provisional data are remedied by checking the accuracy of the original notifications. Proper administrative arrangements are essential for this purpose. The revised figures are used to establish the permanent record.

The provision of a standard form for notification may be regarded as an incentive to good notification, as it is the simplest way of ensuring that all notifications contain the desired information. The minimum information required is: name of patient, age, sex, residence, diagnosis, place and date of notification, name and address of person notifying. Further information requested may vary but the temptation must be resisted to make the notification form so elaborate as to become a disincentive to notification. These forms must be prepared by health authorities and sent to those who are supposed to notify in sufficient quantity.

The notification is sent to the local health officer where it is examined with a view to avoiding inaccuracies in the final data.

A weekly local report of infectious diseases is produced in many areas. If this is circulated to all doctors, and contains on changes in the local incidence of diseases, preventive measures that have been taken or are suggested, etc., it can have the effect of making the notifying doctor feel that he is a member of the public health team. The information is then transfered to a central agency where it is compiled and processed and sent for publication.

It is necessary for arrangements to be made to maintain the confidential nature of notification and it is important for the notifying doctors to be made aware of this fact.

(B) Hospital morbidity

In some countries hospitals are the only readily available source of morbidity statistics. In evaluating hospital morbidity statistics, it should be borne in mind that they refer to a selected population. However, the Twelfth Report of the WHO Expert Committee on Health Statistics stated that such statistics may afford a useful account of the occurrence of severe morbidity when hospital services are readily available and sick persons are both willing to undergo and able to afford hospital treatment.

It was recommended in the Eighth Report of the WHO Expert Committee on Health Statistics "that hospital statistics be regarded in all countries as an integral and basic part of the national statistical programme and be developed from both the administrative and the public health points of view to supplement those statistics obtained from mortality and other morbidity sources". In discussing hospital morbidity statistics, the same report recommended:

1. That countries compile hospital morbidity statistics, giving, as a minimum, a count of patients discharged and of their hospitalization days since admission,

by diagnosis and sex;

2. That such statistics be produced at least annually;

3. That the data be collected through an individual statistical report completed at the discharge of the patient;

4. That the International Classification of Diseases be used for the classification of diagnoses;

5. That in long-stay institutions these statistics be supplemented, wherever possible, by statistics based upon admissions and patients resident in the hospital as of a given day (for example, the first day of the year).

The Twelfth Report of the WHO Expert Committee on Health Statistics endorsed the above recommendations and made the following comments:

1. The statistical unit will usually be the discharge of a patient from hospital.

2. Hospitals will be more apt to co-operate in reporting the data if the statistical abstracts, or tabulations from them, are useful to the hospitals as well as to the central statistical agency (e.g., the abstract might be designed so that it could serve as an index entry or even, for long-term use, as the case record itself).

3. Many systems for the reporting of hospital statistics have the defect of not distinguishing between multiple hospital stays of a single patient and stays of several different patients. If statistical abstracts are adequately identified, they can be combined into series that are related to patients rather than hospital stays and can be analysed accordingly. The difficulty may be partially overcome if it is possible to distinguish between first and subsequent stays.

4. For many purposes, the use of samples may be more rapid and less expensive. There are advantages in a sampling procedure that is based on persons rather than events (e.g., the use of the date of birth or a personnel identifying number as

the sampling frame) so that it is possible to distinguish data on multiple hospital stays.

Out-patient departments can furnish useful data on population morbidity. In presenting out-patient statistics, many countries distinguish between first and subsequent attendances. Where such a distinction can be made, it is useful. However, it is important that "first attendance" be defined. It is also important, in relation to the "first attendance" of a given patient at a given hospital, that distinction be made between:

(a) first attendance for a particular episode of illness,

(b) first attendance at that hospital,

(c) first ever out-patient attendance of that patient.

(C) General morbidity

A single source furnishes only partial data on total morbidity. General morbidity which determines the total extent of sickness in a community is furnished by a wide range of sources or by general morbidity surveys.*

(D) Mortality statistics

Methods of obtaining mortality statistics systematically:

1. The registration method, which may be defined as the continuous and permanent compulsory recording of the occurrence and of the characteristics of the event, primarily for their value as legal document, and secondarily for their usefulness as a source of statistics. Continuous, permanent recording of events can best be ensured by means of legislation which makes registration compulsory.

2. Census enumeration: The number of births and deaths together with their characteristics had, from an early time, been collected by some countries on the population census schedule. It was thought in Canada that once every ten years this enumeration of birth and death would provide an overall check on the registration, but results were so poor that in 1911 the method was discontinued.

* For further details, see WHO Expert Committee on Health Statistics, Seventh Report (TRS No. 218), Twelfth Report (TRS No. 389) and PHP No. 27.

In the United States of America, despite the good intent, statistics of mortality obtained through the census were always defective as shown by the absurdly low ratios of deaths to population which resulted from this method. The census method for collecting vital statistics can, at best, produce returns for the census year and no other. Census years are usually ten years apart. For the intercensal years, current vital statistics are not produced by the census method and, thus, that method fails in the first and minimum requisite for vital statistics, i.e., the production of data on a current basis.

3. The Survey: The census method, which takes advantage of the census organization, usually requires reports on the experience of one calendar year preceding the date of the enumeration. Since faults of memory are an important factor in the success or failure of this type of procedure, there is reason to believe that results might be improved if shorter periods of experience were investigated. However, because of seasonal variations, vital statistics are required for time periods, which together can produce an unbroken series of data for an annual period. To produce annual data by the survey method using shorter retrospective time periods would, therefore, require a number of contiguous surveys distributed throughout the year. In meeting these requirements, the basic advantage provided by the census, that is, the advantage of an existing nation-wide organization manned by trained personnel, would of course disappear, and the ultimate cost of replacing the registration method by continuous surveying would be prohibitive.

Periodic surveys have been employed, however, to secure ad hoc information on births and deaths in areas where the registration method has not yet been established or where it is very defective. In such situation, surveys have the distinct advantage of making available some vital statistics not otherwise obtainable and of securing at the same time the corresponding population data.

(E) On health related environment

Environmental health statistics, as a subject, is one of the items dealt with briefly by the WHO Expert Committee on Health Statistics. The Committee stated in its Thirteenth Report that "Environmental health includes such items as water purification, sewage treatment, the study of atmospheric pollution, the control of the cleanliness and adulteration of food, and the examination of hygienic standards in buildings. The statistics concerning theses subjects form an important part of the statistics of health services."

Data may be recorded on the number and size of establishments involved in environmental control, on the personnel available, on the number of visits of inspection paid (e.g., to manufacturing establishments to study occupational hazards), the number and type of tests carried out by public health laboratories, and so on. Possible indices of the amount of work being conducted in the field of environmental control include the expenditure on such facilities per head of population, the proportion of the population to whom a particular facility is available, and the ratio of sanitary engineers to population.

The data collected by doctors or sanitary engineers are often in the form of registers of work done. The desired information is rarely kept by national health agencies, and is often difficult to locate when it is required to determine the health of various communities.

The Committee, in the same Report, recommended that wherever possible statistics on facilities provided should be accompanied by surveys of the utilization of those facilities, as communities provided with such facilities have been found on further investigation either not to use them at all or to use them for the wrong purpose.

II. ON HEALTH SERVICES AND THEIR UTILIZATION

and

III. ON HEALTH RESOURCES· PHYSICAL, MANPOWER AND FINANCE

These two subjects are dealt with by the WHO Expert Committee on Health Statistics, Thirteenth Report, 1969 (TRS No. 429).

IV. OTHER METHODS OF COLLECTION OF DATA

For discussions on this subject, see:

WHO Expert Committee on Health Statistics:

Seventh Report, 1961 (TRS No. 218)

Tenth Report, 1966 (TRS No. 336)

Twelfth Report, 1968 (TRS No. 389)

Disease Registers and Their Use (WHO/HS/NAT.COM/71.280).