British psychiatrist is not likely to be familiar with. Licensing requirements, being governed by provincial law, are generally not negotiable, salaries, removal expenses, holidays, etc, often are. The British psychiatrist should be aware that he is offering his services in a more open, free enterprise, situation than is the case in his home country and accordingly should examine in detail what is being offered to him, as well as what alternative opportunities may be available in other parts of the country.

In concluding, it is my experience that the great majority of British psychiatrists in Canada are well content with their new country and lead professionally rewarding lives. The practice of psychiatry in Canada appears to be more heavily influenced by British rather than American influences and indeed many senior positions are held by British qualified psychiatrists. Factors to be considered by a British psychiatrist before emigrating are multiple and should certainly include the implications of the type of license to practice that is to be granted and the feasibility of eventually taking Canadian qualifications. It is often possible to negotiate a trip to Canada to view a position and, in my opinion, this is by far the best and safest way for a potential immigrant psychiatrist to fully explore all the intricacies of a potential post.

The views and opinions expressed in this article are those of the author and should not be considered in any way representative of any official body or organization.

What Are Rates?

Some notes about the application of and the difference between rates in describing health service data

E. L. KONTY and S. J. JONES, Nottingham University Department of Psychiatry, Queens Medical Centre, Nottingham

In recent years there has been a move away from the purely literary to the numerically descriptive medical publications. This is largely attributable to a change in emphasis and direction in the medical sciences as practitioners become more 'mathematically aware'. Sample populations are often described in terms of numbers, ratios, percentages or rates. All of these descriptors have merit in supporting the expression of methods and results in clinical trials, research and epidemiology. The application of rates can be most useful, particularly as results are not always considered in terms of simple numerical counts, but are often related to an underlying population.

Most clinicians today have developed numerate skills and have a reasonable appreciation of the meaning and value of rates-related statistics. But there still exists difficulty in understanding the reasons for applying particular types of rates in given circumstances. Why, for example, if one has knowledge of the age distribution in a patient sample, are total population rates still used? Are there sometimes advantages in not using age-specific rates?

The following paragraphs explain the difference between total and specific rates and illustrate their uses and limitations by means of examples taken from locally available admission information.

Numbers and percentages

The presentation of data in simple numerical form often gives a good indication of service utilization and is useful in expressing simple workload statistics. The calculation of percentages gives some measure of dispersion and often has more impact than simply quoting numbers. For example (Table I), the number and percentages of admissions for Nottingham in 1981 were as follows:

TABLE I
Admissions for 1981: numbers and percentages

Age	Number	% of all admissions
15–64	1114	70
65 & +	470	30
15 & +	1584	100

These figures indicate that 30 per cent of admissions were for those patients aged 65 and over. Such a statement clearly has more impact than saying '470 patients out of a total of 1,584 were aged 65 or more on admission'.

To describe local service or workload activities, it is often sufficient to quote actual numbers rather than rates. A simple count of people or events, however, has parochial value and as no account is taken of the background population, it has several limitations. For example: the fact that Nottingham had 1,584 admissions and Southampton had 1,414, during the same period of time, indicates that Nottingham's admission workload is slightly higher. However, the underlying total populations are quite different: Nottingham's area had 380,000 people, while Southampton's area included 165,000 people. Such knowledge immediately raises the question as to which sections of the two populations are most notably affecting these admission figures.

The next example illustrates the use of rates, and shows how rates by total population differ from age and sex specific rates.

Total population rates

These are often referred to as crude rates. Most simply,

https://doi.org/10.1192/S0140078900001747 Published online by Cambridge University Press

these are numbers expressed in relation to the total background population. In the example quoted (Table II), crude rates have been calculated by dividing the number of admissions by the total catchment population and expressed as a rate per 100,000. They are not based on the age or sex structure of the population under study.

TABLE II

Population structure and psychiatric admissions in Nottingham (1981)

Nottingham's population:			
Persons aged under 15			80,000
Persons aged 15–64			245,000
Persons aged 65 & +			55,000
Total population			380,000
Admissions—rates:			
Age	Number of admissions	'Crude rates' per 100,000 population	'Age specific rates' per 100,000 population
15–64	1114	293	455
65 & +	470	124	855
15 & +	1584	417	528

Crude rates summarize population characteristics in a single figure and have the advantage of allowing the reader to add such rates in the same way that the actual numbers upon which they are based can be added.

Further, when the age structure of a given population is either unknown or unimportant, crude rates may be sufficiently descriptive. For instance, when examining patient prevalence in a general psychiatric service covering the whole age range, they will usually provide an adequate picture of the uptake of services.

Specific rates

Specific rates take account of demographic details such as sex and age (for the purpose of this paper, we will discuss age specific rates only). As mentioned above, such rates consider information in relation to the underlying population for any given study. They permit the user to compare areas of different size and population structure. Although age specific rates are more tedious to compute, they yield more information and are particularly useful when examining specific age groups, for instance in the planning of services for adolescent or elderly populations.

The example quoted previously shows the numerical differences between using crude and specific rates, and highlights the importance of understanding which particular type of rate is being applied. Although numerically the elderly (aged 65 and over) have fewer admissions, it is apparent that they have a greater likelihood of being admitted than those aged under 65. In fact an elderly person is almost twice as likely to have an in-patient admission. This cannot be deduced from crude rate statistics.

As a further example of the difference between the two forms of rates discussed, let us assume that the population structure of Nottingham is different, as shown below:

Persons aged under 15:	80,000
Persons aged 15–64:	200,000
Persons aged 65 & +:	100,000
Total population:	380,000

As the total population in the above has not changed, the crude rates remain unaltered. However, as age specific rates take account of the underlying population structure, they become:

Age	No of admissions	Age specific rates	
15–64	1114	557	(455)
65 & +	470	470	(855)
15 &+	1584	528	(528)

(Specific rates from previous example in parentheses.)

In summary, if a population's structure is known, then one can apply either crude or age specific rates. If, on the other hand, the size of the population is known but not its constitution, then the application of age specific rates is not possible—in such cases only crude rates can be employed, and only limited conclusions can be drawn from the information.

An understanding of the appropriate use of rates is relevant not only to clinical and epidemiological investigation, but also to planning and monitoring of health services. Efficient planning depends on the availability of detailed information about the services being offered as well as the population being served. It is hoped that the above notes go some way toward encouraging the effective use and interpretation of numerical data.

ACKNOWLEDGEMENTS

The Nottingham Psychiatric Case Register is supported in part by a grant from the Department of Health and Social Security. We are grateful to Mr K. D. Bledin and Professor J. E. Cooper for their advice and assistance.

B. B. Zeitlyn Psychotherapy Training Fund

A fund has been set up for those living in Cambridge and East Anglia who wish to train as psychotherapists. Monies are available as an interest-free loan to be repaid within three years of completion of training.

Applications must be received by 22 April 1985 and loans to successful applicants will be offered from 1 October 1985. Those interested should write for further information to: Honorary Secretary, Gaye Jurewicz, 16 Milner Road, Comberton, Cambridge CB3 7DE.