

AN OVERVIEW OF CANADIAN HEALTH STATISTICS:  
PAST, PRESENT AND FUTURE<sup>1</sup>

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The author briefly reviews the factors determining the production of health statistics in Canada, with particular attention to the different sources of data and to the long-standing co-operation among the many agencies involved in the gathering of health-related information.

Mr. Chairman, I want to express my real pleasure at being a member of this panel because of the opportunity that it affords me to congratulate Dorothy Rice and her colleagues in the National Center for Health Statistics on the occasion of the completion of 25 years of Health Surveys. We in Statistics Canada have long been admirers of NCHS and my congratulations to Dorothy are on behalf of my colleagues in Statistics Canada, particularly those in our Health Division.

Consistent, I hope, with the charge of our Chairman, I have chosen to paint with a very broad brush what seem to me to be trends and determinants of our health which might find echos in other countries and therefore be of interest to this audience.

Two data streams comprise the historic and current sources of Canada Health Statistics. The first is health institutions - predominantly hospitals, both general and mental. From them we derive statistics about a wide range of their characteristics, as well as statistics about their patents and their illnesses. Canadian hospital statistics are amongst the most detailed and comprehensive in the world.

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The second stream comprises the records generated by registration of births, marriages and deaths from which we derive the critical statistics on causes of death.

A wide variety of statistics is produced from such rich data bases and some important statistics are derived from other sources, for example, those on cancer incidence, from cancer registers, and notifiable diseases. For those who are interested I have a few copies of a Directory of Health Division Information and also I would be glad to send a copy to anyone who wrote to me at Statistics Canada.

The important themes relating to these statistics that I want to touch on this morning are the following:

- First, they measure illness only when individuals seek health care from institutions.
- Secondly, they illustrate the strengths and weaknesses of statistics derived from surveys and from administrative records.
- Thirdly, they represent the availability of information which could only result from a very high degree of co-operation, sustained over a long period of time, between the central agency, federal and provincial departments of health, the institution and hospital associations, and vital statistics registers.

I will return to these three characteristics of the health statistics system: what is measured and what is not, the implications of data sources and the degree of co-operation between the players in the system.

Why have we produced what we have, rather than different products by different means? Looking back over sixty years of health statistics, I found this an interesting question. Assessing how priorities were determined is a judgemental process - just as is deciding on today's priorities. So it is my judgement that in part we responded to changing needs for statistics articulated by users and Royal Commissions, and in part we anticipated changing user needs ourselves and used existing data

sources which related to such needs, and because they represented opportunities. They were there to be utilized, like the vein of quartz that a prospector seeks and finds, or stumbles across. In part, we were driven by, and we exploited, the rapidly changing technology. In part the environment of co-operation in which we worked determined what we did. And finally in many parts the resources available to us in terms of dollars, human skills, and data handling capabilities, permitted some things and not others.

These few critical factors:

- articulated and perceived needs,
- data sources available,
- changing technology to process and to analyse data,
- co-operation between players in the system,
- budgets available,

have been the determinants of what we have done. But it will be apparent to you that they are also the determinants of what we are and will be doing.

These forces shift and come together in a changing kaleidoscope so that during one span of time one combination is dominant, to be replaced by another combination.

In Canada all have operated in such ways to bring about significant changes in our health statistics and it seems apparent that there will result even more rapid change. Changing needs should, of course, drive the system and they are in fact doing so, albeit in some respect in an erratic manner. You will recall my stating that the Canadian measurements of morbidity are largely limited to hospitalized illnesses. This has been widely recognized as a quite unacceptable state of affairs and a few years ago this dissatisfaction led to a federal decision to institute a continuing health status survey of the Canadian population. A survey was carefully planned and tested from both conceptual and methodological points of view. However, only 10 months' data were collected before government-wide budget reductions forced cancellation of the survey. The first results from the

data collected have just been published and the data base has shown signs of being a rich research source with significant decision-making implications. Of course, it suffers from the severe limitations of relating to only one point in time. It is too early to state how long it may be before a decision to reinstitute some form of the Canada Health Survey is made. However, I am optimistic that the capacity of such measurements of health status - to throw light on the effects of our lifestyles on our good health and illness, and lead to individual and collective decisions which will affect them - will not be ignored for long.

Let me turn from the area of health-related household surveys where the Canadian track record of responding to changing needs is poor, to one where we have both anticipated and responded effectively to new demands. I refer to epidemiological studies designed to enlighten the kinds of health risks resulting from exposure to various demographic, social, occupational and environmental influences. Thanks to the foresight and persistence of members of our Vital Statistics Staff working with a few other key persons both within and outside Statistics Canada, we have a computer-searchable Mortality Data Base file which includes all deaths in Canada, coded by cause of death, extending back over three decades. We also have a generalized record linkage facility which is being used to link specific exposed population groups to the mortality file. Linkages are also possible to an as yet incomplete but significant ten-year cancer incidence file.

A paper which includes a largely Canadian bibliography on this area will be given by Martha Smith, Head of Occupational and Environmental Health Research Unit, in Scotland before the end of this month. It will be available on request. (Both Martha and John Silins, Chief of our Vital Statistics and Disease Registries Section are in the audience.)

As to other data available to shape the future of Canadian Health Statistics I will only take time to mention the existence of data bases which are very large, potentially very rich, and largely unused for national statistical purposes.

They comprise the administrative records of our national medicare system which record annually in excess of 30 million incidents of primary medical care extended by physicians. We have demonstrated some of the statistical potential of these files and we are now shaping new proposals to develop their use during the next several years. Budgets are expected to be the limiting factor.

New needs should drive the system - new technology does. The influence of computers on health statistics is all-pervasive and is operating to change the availability and uses of health statistics in profound ways.

I want to comment on the use of data - in the form of statistical information, which computers have made possible - by managers, medical personnel and administrators in hospitals, local hospital districts, states, provinces, universities and associations. At federal levels, computers have changed the ways in which data are processed and statistics are used. But in many locations throughout the health community, computers have meant that data are now used for purposes of understanding, for research and for decisions, whereas in the precomputer era they were used little or not at all.

Allowing for some exaggeration - but probably not very much - it was not that long ago when national statistical agencies had almost a monopoly on large-scale data handling capability. What a contrast between then and now when large, fast, sophisticated and easily used information processing capacity is economically available to both large and small organizations. The implications are far-reaching and I suspect not yet fully perceived, but they include at least:

- The existence of many rather than few producers of statistics (many of these will perceive themselves as operators of MIS but statistics is - and will be - the game if not the name.)
- These same organizations will also be much more intensive users of statistics - particularly statistics about their own organizations or jurisdictions.

- As a result there will be greater knowledge of one's own environment.
- There will be greater independence on the part of such organizations and their need - maybe much less perceived need - to rely on others for statistics.
- This ability to utilize the information contained in the administrative records of one's own organization or jurisdiction will almost certainly reduce the tolerance for completing statistical questionnaires, with a resulting increase in the necessity to rely on administrative records. This could result in less information being available about the total environment because of the problems of data comparability between organizations and jurisdictions.

I find it difficult to forecast the impact that these changes will have on co-operation between the many players essential to development and maintenance of a comprehensive and inevitably complex system of health statistics. All I can say is that in Canada - notwithstanding substantial pressures which test and strain the system - co-operation has not diminished. In fact, the reverse is the case and on this score also I am an optimist. I think that one determinant of such co-operation is for national statistical agencies to recognize that their role must change in response to the kind of changes I have described. It is apparent to me that priorities must shift from statistical production to statistical co-ordination.

One final word about what I consider to be an overriding priority, namely, doing statistical analysis of our data bases to determine the messages that are in them, to determine their meaning and significance, and to relate them to the issues and problems confronting us.

For too long, we, at least we in Statistics Canada, have published numbers - myriads of numbers - and failed to translate them into significant indicators. We have left it to others to find the gold in the ore we have mined. I think that we and the health community have paid a high price for our failures (there have been successes) to find the gold, and even shape it into jewellery with which users would enlighten our world, not unlike the way necklaces lend radiance to those who wear them.