



Message From The Co-Chairperson

The past year has seen an increased interest in vital statistics information. This new visibility has revealed some areas of concern with the data but also provides new opportunities for raising the profile of vital statistics and emphasizes the relevance and importance of the information.

Some of the increased attention has come from researchers who use the data. In one case, errors in the data were identified. These errors had an impact on the interpretation of the results concerning low birth weight, an important public health concern. Other researchers noted the continuation of different definitions used for stillbirths, in several jurisdictions. These concerns resulted in the Vital Statistics Council receiving a letter from the federal, provincial and territorial Deputy Ministers of Health, Advisory Committee on Population Health (ACPH). Subsequently, the co-chairs of Council met with the ACPH. While the impetus for the meeting was problems with the data, the outcome of the meeting was an appreciation of the overall quality of the vital statistics data and the identification of this committee as a potential ally for the Vital Statistics Council in the future. It was rewarding to hear the representative of one province on the committee state the intention of becoming more familiar with the vital statistics registry in their jurisdiction because of the importance of the basic data for health monitoring.

Another focus of the increased attention is the demand for more detailed and new information. First, there is increasing need for local or regional data that can be used to look at trends in the data. The geographic detail that is being requested is for changing or newly defined jurisdictions. There are demands for data for regional areas or health districts or communities. The areas are defined sometimes by postal code or census districts or municipal boundaries. Unfortunately, the geographic variables we have used are not always robust enough to provide the data in a consistent way over time. However, it is clear that as programs are increasingly administered at a local level, the demand for the data will continue to be for smaller areas and we will have to be responsive to these requirements.

New variables are also of interest. From socio-demographic to risk factors variables, many researchers and government program analysts would like additional data elements that permit more extensive analysis of the basic data elements that are collected as part of vital statistics. It is a continual debate between not wanting to add burden to an already difficult collection process while wanting to react to legitimate information needs. All these demands also have resource implications. The vital statistics system provides a structure upon which to build and it is certainly preferable to new parallel collection systems being developed.

In summary, the attention that the data has received has not been entirely positive. It focussed on isolated errors in a complex data system that is remarkable for its integrity and overall data quality. However, some of the impact is positive. The attention emphasizes the critical importance of the information we collect for monitoring the health of the Canadian population. It has also provided the incentive to improve our dialogue with those who use the data.

The Vital Statistics Council has initiated the writing of a Strategic Business Plan during the past year. This will be a very timely document to assist us in actively addressing the problems and challenges that have been presented to us. ♦

Gary Catlin, Statistics Canada, Co-Chairperson, Vital Statistics Council for Canada

In this issue:

Message from the Co-chairperson	1
Message from the President of the National Association for Public Health Statistics Information Systems (NAPHSIS)	2
Acknowledgement	3
Monthly and Daily Patterns of Death	4
The Use of Vital Statistics Data by a Social Policy Ministry	5
On a Typical Day in New Brunswick in 1997	6
Book Review - United Nations Publishes Manual on Vital Statistics	7
Council Member Listing	8

Message from the President of the National Association for Public Health Statistics and Information Systems (NAPHSIS)

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As I complete my last four months as President of the National Association for Public Health Statistics and Information Systems (NAPHSIS), the American equivalent of the Vital Statistics Council for Canada (VSCC), I have been reflecting on some of the more enjoyable and interesting aspects of the last two years. One clearly has been the opportunity to twice attend the annual meeting of the VSCC, in Ottawa in 1996 and in Victoria in 1997. As a Canadian (I still retain my Canadian citizenship), I was more than professionally interested in how the vital statistics system operates in Canada as opposed to the United States and was surprised to find that there are a number of significant differences in the way the systems are structured and operate in the two countries.

While both countries have allocated civil registration of vital events to the provincial or state jurisdiction, I am surprised that the vital records activities in Canada are often not located in the health department (or ministry), while in the United States they are all in the public health area. As I tried to analyze this structural difference between the United States and Canadian systems, it becomes apparent that one of the reasons is that Canada has not linked the registration of vital events and the compilation of vital statistics together as tightly as has been done in the United States. It would appear that in Canada, vital records registration is often regarded as strictly an administrative function (i.e., the civil registration system), while in the United States, vital registration is seen as part of at least four distinct systems: civil registration, records management, public health data, and surveillance.

In 1987, when I became State Registrar in Kansas, Dr. Pat Schloesser, internationally known pediatrician and director of Maternal and Child Health, took me aside and told me how important the role of vital statistics is in public health. She stated that during the 1950s and 1960s, when she was working for the World Health Organization (WHO) establishing public health systems in emerging third world countries, the first activity of the WHO teams was to set up a vital statistics

system. They believed that if you do not know the health status today, you would not know if your efforts have moved you anywhere. The vital statistics generated from the registration process was, in their opinion, the cornerstone of a public health service.

The longer I have worked in the public health arena, the more I believe what Dr. Schloesser told me. Therefore, not only was I surprised to find that the vital registration system is not in the health department (or ministry) in all the provinces/territories, but that many of the provinces/territories do not have vital statistics tied to the registration area. In the United States most, but not all, vital records and vital statistics are in the same unit, but if not, they are usually intricately tied together as part of a Center for Health Statistics.

As I looked at this issue, I tried to analyze the rationale for separating vital records and statistics and the advantages and disadvantages of having either or both outside health. I am at a loss in terms of finding the advantages and obviously feel that if vital registration supports vital statistics and vital statistics is the basic building block for health, then logically, if the vital system is outside of public health, it probably is not as functional as it could be, and its products may not be as beneficial to society.

Another issue that is common to both the American and Canadian Vital Systems is timeliness. This refers to registration, issuance of certified copies, and access to surveillance and research data. In the United States, we tackled the largest area first, the birth registration system, and working with the private sector, designed and developed the electronic birth registration system, commonly referred to as the Electronic Birth Certificate system (EBC). EBC was a product that caught the imagination of all sectors related to the birth registration process: vital records and statistics, the hospitals and birthing centers, the public health program areas (Maternal and Child Health, Epidemiology, Disease Prevention, and Health Laboratories), the National Center for Health Statistics (the United States equivalent to the Health Statistics Division of Statistics Canada), and other allied areas such as Social Security, Child Support Enforcement, and Medicaid. The impact of this one program has possibly been the most significant change to the Vital Statistics System in 20 years. Timeliness has improved dramatically with some hospitals actually downloading birth data daily, the error rates on birth

certificates have dropped from about 30% to less than 4%, and the need to data enter birth information at the state level is eliminated as the EBC data is downloaded directly from the hospital. EBC has also allowed us to utilize the birth system for activities such as a parental request for a social security number for their child and populating the state immunization registries, both activities being very time sensitive. In Kansas, more than 96% of all births are registered through EBC and completed birth data are received on more than 90% of all births within 10 days of occurrence.

While EBC is a reality in every state in the United States, it could also be in all provinces/territories in Canada. However, there would need to be some standardization of both form and process and a commitment to procedures that would require changes in some jurisdictions to ensure that the certificate be completed before the child leaves the hospital. The success of the EBC is dependent upon the hospital collecting and transmitting all of the birth registration information. I know some provinces are looking at the EBC concept and I would encourage its adoption.

The next big hurdle for both countries in the area of improving our vital statistics system will be the implementation of an electronic death registration (EDR) system. With major pilots currently being carried out in New York City and State, New Hampshire, and Minnesota, we anticipate that we will be looking at a fully operational statewide EDR program by sometime in 1999.

The EDR concept will be, as far as I can ascertain, operable with minimal alterations in all provinces and states and actually could be in effect nationally in Canada before the United States. I say this because based on my observations, the Canadian provinces are generally more willing to look at a process from a national perspective, agree on standards, and then move forward while their American counterparts will find a way to try to distinguish one state from another (Even the EBC systems have all had to be “Kansasized” or “Texasized” or “New Yorkized” and always “Californiaized”).

The vital registration and statistics systems in the two countries have more similarities than differences, and I have been pleased to see the increased exchange of ideas, information, and products in recent years. The interstate exchange of

records agreements is becoming broader and more functional as all of the states and provinces participate. Software, such as the Infocorp Point of Sale system designed and developed in Manitoba, is now in a number of vital statistics offices in the United States. Optical disk-based storage and retrieval systems are being implemented on both sides of the border with the exchange of technical knowledge saving both countries from reinventing the wheel.

The products of the civil registration of vital events are central to the compilation and analysis of public health data and the implementation and management of public health programs for our customers: the public, program managers, researchers, and the policy makers. My hope is that the policy makers continue to see the importance of a multifaceted vital statistics system and ensure that the necessary linkages to its natural partners are simple, direct, and secure. ♦

ACKNOWLEDGEMENT

This is the last edition of Vital News prepared by Kevin Burr, who has served as Editor for the past year. Kevin has left the practice of vital statistics in British Columbia for another challenge, and we wish to acknowledge his contribution in the establishment and maintenance of the newsletter.

Although the position of Editor was a voluntary one, Kevin's enthusiasm and dedication ensured that Vital News met satisfactory standards of content and writing, and we will miss him. We wish Kevin well as he pursues another direction in his career.

Monthly and Daily Patterns of Death

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The timing of most deaths is generally viewed as a random event. However, mortality data, covering all deaths in Canada over a 20-year period, reveal patterns associated with the seasons of the year and even the days of the week.

In 1995, the average number of daily deaths was highest in winter months (December and January through April), while the months of May through November saw below-average figures. These fluctuations are similar for every year of data from the Canadian Vital Statistics Data Base between 1974 and 1994.

Seasonal patterns are also observed for cause-specific deaths. As expected, most deaths from pneumonia, influenza, and other diseases occur in winter, when the incidence of these diseases is highest.

What may be surprising, however, is that deaths from cardiovascular disease follow a seasonal pattern very similar to that of pneumonia and influenza, even though there is no corresponding season for coming down with heart disease. The increase observed over the winter months in the average deaths per day attributable to cardiovascular disease actually illustrates the lethality of diseases such as pneumonia and influenza among people whose health is already weakened. A death whose immediate cause was complications due to influenza, for example, will be attributed to heart disease if heart disease was certified as the underlying cause of death. Similar reasons explain other unexpectedly seasonal causes of death such as diabetes mellitus, chronic liver disease, and diseases of the urinary system.

The seasonal fluctuations in motor-vehicle-accident deaths follow a pattern opposite to that of pneumonia and influenza, with lows between January and April and highs usually occurring in July or August. Also notable is that the seasonal aspect of motor-vehicle deaths is eroding; that is, the difference between highs and lows in the daily averages by month is diminishing. Between 1974 and 1994 the peaks fell from roughly 40% to 27% above average while the troughs changed from about 43% to 25% below average. Furthermore, the daily average by month has itself steadily declined in this time period, due in part to seat belt legislation,

stigmatization of drinking and driving, enforcement, and improved highway and motor vehicle design.

Suicides show little seasonal variation, generally rising in the spring and, to a lesser extent, in the fall. Contrary to popular belief, the average number of suicides per day is lowest during the December holiday season, at between 10% and 14% below average.

It also appears that deaths follow a fluctuating pattern within the week. Saturdays had the highest average daily deaths from 1974 to 1994, while Thursdays had the lowest. Motor vehicle deaths, in particular, peak on weekends, especially Saturdays, and are lowest on Mondays through Wednesdays.

These time patterns in deaths suggest that from a public health perspective, flu shots for high risk groups may reduce the number of deaths associated with influenza and pneumonia during the winter. This may also reduce deaths attributed to other causes that are triggered by influenza and pneumonia. ♦

· This summary was from "Monthly and Daily Patterns of Death," by Richard Trudeau, which appeared in Statistics Canada's journal *Health Reports*, 1997; 9 (1): 43-50. To order reprints or to subscribe to *Health Reports* (catalogue no. 82-003), call 1-800-267-6677 (toll free in Canada) or Fax (613) 951-1584.

The Use of Vital Statistics Data by a Social Policy Ministry

by Kelly T. Shaw and Leslie T. Foster
British Columbia Ministry for Children and Families

The Ministry for Children and Families provides client-centred services to children, families, persons with developmental or multiple disabilities, and youth and adults who have addictions. Information related to the design, delivery, and utilization of services is essential to ensure that the ministry's objectives and that clients' needs are met. The provision of accurate and reliable data in a timely fashion permits the ministry to operate in the most effective and efficient manner possible.

Vital Statistics data are used to support several initiatives, including the creation of a framework within which the ministry can measure progress in achieving its goals.¹ The framework consists of a set of outcome objectives, or desired results, with measurable indicators that provide a baseline profile of the health and well-being of children, families, and adults in the province of British Columbia (see Table 1 below). In total, 18 of the 73 indicators are based on Vital Statistics birth and death data. Baseline data are provided by Vital Statistics, and the benchmark² is provided from other data sources. The framework provides a reference point against which the outcomes for British Columbia can be compared. It also allows for comparisons among the ministry's 20 Regions, in terms of needs and performance. In addition, further analysis of identified outcomes, and their respective indicators, helps the ministry to understand and address disparities in health and well-being that exist on the basis of factors such as births and deaths. The framework is used to monitor performance by allowing the ministry to identify successes as well as emerging trends and issues affecting the health and

well-being of the identified populations. As such, it provides useful information for planning, decision-making, and resource allocation.

Information from Vital Statistics is also being used to develop a funding model which facilitates the equitable distribution of financial resources to the regions of the Ministry for Children and Families. Equitable funding means that the regions have equal opportunity to receive funding based on need rather than utilization of services. The funding model is designed to ensure that all regions have an equitable share of the financial resources so that they have a fair opportunity to respond to the needs of their regions.

Regional inequities exist for many reasons, such as variations in availability or accessibility of services. The funding model provides a way of determining regional disparities in the need for ministry services and of allocating the budget accordingly. Some of the key factors that are used to measure regional differences in need are population size, low birth weight live births, infant mortality, teen pregnancy, and deaths related to various causes (e.g., alcohol- and drug-related deaths). There are other provinces across Canada that have funding models which use similar sets of indicators to distribute funds to regions.

The provision of accurate and reliable data is essential to ensure that the Ministry for Children and Families achieves its goals, and meets the needs of children, youth, and families in the province of British Columbia. ♦

¹ Ministry for Children and Families (1997). *Measuring Our Success: A framework for Evaluating Population Outcomes*. Victoria, BC.

² For a further discussion on benchmarking, see Foster, L.T., Burr, K.F., and Mohamed, J. (1994). *Screening for Health-Area Benchmarks in British Columbia: The Use of Vital Statistics Data*. Division of Vital Statistics, Ministry of Health and Ministry Responsible for Seniors.

Table 1: Objective is to Optimize the Health of Babies at Birth

Indicator	Baseline	Benchmark	Data Source
(1) Infant Mortality Rate	BC - 5.9 deaths under one year per 1,000 live births, 1995 (276 infant deaths)	Japan, Sweden, Finland: 4 deaths under one year per 1,000 live births, 1995	Baseline: BC Vital Statistics Annual Report, 1995 Benchmark: State of World's Children, 1996, UNICEF
(2) Percentage of Low Birth Weight Babies	BC - 5.3% of births weighed < 2500 grams, 1995	Norway, Spain, Ireland, Finland, 4% of births weighed < 2500 grams, 1990 - 94	Baseline: BC Vital Statistics Annual report, 1995 Benchmark: State of World's Children, 1996, UNICEF

ON A TYPICAL DAY IN NEW BRUNSWICK IN 1997

22 Live births occurred in the province to New Brunswick residents:

- 11 males and 11 females were born
- 2 were born to teenage mothers
- 8 were born to parents who were not married to each other
- 1 low birth weight baby born
- 5 multiple births every 10 days
- 1 stillbirth every week

16 Deaths occurred in the province to New Brunswick residents:

- 8 males and 8 females died
- 6 deaths were due to diseases of the circulatory system including:
 - 5 deaths from heart diseases
 - 1 death from cerebrovascular diseases
- 5 deaths were due to cancer including:
 - 1 death from lung cancer
 - 1 death was due to disease of the respiratory system
 - 1 death resulted from accident or violence
- 5 deaths every 10 days were due to diabetes
- 4 deaths every 10 days due to Alzheimer's disease and senile dementias
- 5 deaths from AIDS/HIV infections for the entire year
- 1 infant death every 12 days

11 Marriages were solemnized in New Brunswick:

- 2 were civil ceremonies and 9 were performed by religious representatives
- 8 marriages were to couples where both parties were marrying for the first time
- 1 marriage every 22 days was to a couple where both parties were teenagers

UNITED NATIONS PUBLISHES MANUAL ON VITAL STATISTICS

In April of 1998, the Statistics Division of the Department for Economic and Social Affairs of the United Nations Secretariat in New York published a “Handbook on Civil Registration and Vital Statistics Systems: Developing Information, Education and Communication.” It is one of a series of five Handbooks of the United Nations International Programme for Accelerating the Improvement of Civil Registration and Vital Statistics Systems. This program encourages countries to undertake long-term, self-sustaining civil registration of vital statistics’ events.

The Handbook was written by Marianne Wiesel, former Registrar General of Vital Statistics for the Province of New Brunswick and Chair of the Vital Statistics Council for Canada in the 1980s. It provides a step-by-step guide for national vital statistics’ offices, which enables staff in these offices to undertake a series of activities, methods, and techniques that assist in developing a program of information, education, and communication as part of a wider plan to improve civil registration and vital statistics’ registration. The Handbook was designed to ensure that both the policy and decision-making officials at the governmental level and the population at large are fully informed about the purpose, requirements, and benefits of civil registration. It would be particularly useful in countries wishing to develop or improve a system of civil registration and vital statistics. The Health Statistics Division of Statistics Canada, the Health Promotion Directorate, Health and Welfare Canada, and Vital Statistics, Communications, and Health Promotion Branches of a number of provincial ministries responsible for vital statistics’ programs are acknowledged for having provided information and assistance to the project.

In another publication in the same series, the “Handbook on the Management, Operation and Maintenance of Civil Registration and Vital Statistics Systems,” a section on Civil Registration and Vital Statistics Systems in Selected Countries contains a description of the Canadian system of vital statistics prepared by the author, based on information collected by the Vital Statistics Council for Canada.

Other Handbooks¹ in the series are:

- Handbook on Civil Registration and Vital Statistics Systems: Management, Operation and Maintenance;
- Handbook on Civil Registration and Vital Statistics Systems: Preparation of a Legal Framework;
- Handbook on Civil Registration and Vital Statistics Systems: Computerization; and,
- Handbook on Civil Registration and Vital Statistics Systems: Policies and Protocols for the Release and Archiving of Individual Records.

¹ United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to:

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