



Message From The Co-Chairperson

The vital statistics program, which involves the registration and collection of data on births, deaths, marriages and stillbirths, is co-operative activity that involves the provinces, territories and Statistics Canada. A review of data quality procedures in the vital statistics program has presented an opportunity for the Vital Statistics Council for Canada to examine the variety of practices, processes and procedures that have developed over the years in the collection of basic information on births and deaths. This review was prompted by concerns about data quality raised by the Deputy Ministers of Health's Advisory Committee on Population Health (ACPH). A survey was completed by the provincial and territorial organizations involved in the registration of births and deaths, as well as Statistics Canada.

Overall, the survey confirmed that the system is well served by the quality procedures that are in place. There are two aspects to the provincial/territorial vital statistics system. First, it is a registration system that, by law, records every birth, death, marriage and stillbirth in each jurisdiction. Second, it is an invaluable source of basic health information. This dual function is reflected in the organizations within the provinces or territories where registries are located. Some are within a ministry of government that reflects an orientation to registration while others reside in a health ministry based on the use of the data collected. While the actual organizational structure may not seem to be important, a substantial contribution to data quality is the feedback loop between analysis of the data and the collection process which may be made more difficult by the organizational structures.

A significant accomplishment reflected in the survey results is the adoption of a standard data dictionary by all jurisdictions for both births and deaths. This has provided a target that all jurisdictions are moving towards. It does not however, mean that all definitional problems have been resolved. Two provinces retain a definition of stillbirths that is slightly different from the remaining jurisdictions. For some analysis, with respect to perinatal issues, this poses problems for interpretation and comparisons between provinces.

The survey results indicate that there is a certain amount of variety with respect to data quality processes and procedures. Some of this is due to the

difference in the size of the jurisdictions. However, the attention to detail and concern for quality is evident in the approach in each jurisdiction. For both births and deaths, each provincial office attempts to validate information, confirm inconsistencies and investigate omissions. Statistics Canada provides feedback based on the data received at various stages in the process from the individual provinces.

The data quality concerns that prompted the review were isolated. However, the fact that serious data quality problems emerged is perhaps an indication that regular review of procedures and processes and ongoing documentation of the system is required. ♦

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

Improving Accessibility Through Outreach Services

*Alexandra Schmidt
Office of the Registrar General, Ontario*

Ontario's Public Service (OPS), like most other government organizations, has seen many changes over the last few years and the approaching millennium brings with it new challenges. This has resulted in a rethinking of how the OPS provides services to its clients and stakeholders. *Service Quality* has become the cornerstone of the OPS. The focus on quality services brings with it challenges and opportunities to develop and implement creative and innovative approaches for providing improved services to all Ontarians.

The Ontario Ministry of Consumer and Commercial Relations has identified customer service improvements as one of its key strategies in its business plans. One of the ministry's core businesses is registering and maintaining all vital events and providing proof of these records through the Office of the Registrar General.

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Recently, this Office has taken on a number of customer service improvement initiatives that recognize the unique and varied needs of its customers and stakeholders.

One example of these initiatives is the Aboriginal Registration Outreach Project. The key objective of this project is to improve accessibility of services to communities in remote areas of northern Ontario. Over the years, the Office of the Registrar General has recognized that first nations people in remote communities of Ontario face unique barriers such as remote location, language and lack of documentation, that together limit access to the Office's services. As a result, many residents of these communities do not have birth, marriage or death certificates required for services such as old age pension, widows' pension, health cards and status cards, to name a few. The birth certificate is the fundamental document needed to establish legal identification.

To improve accessibility of its services, the Office of the Registrar General revised its internal policies and broadened its requirements for registration purposes. In January 1998, the Office of the Registrar General entered into a partnership with the Ministry of Health and Indian and Northern Affairs Canada to improve the level of registration for vital events and health cards amongst the residents of remote communities in the north. The project entails travelling to a total of thirty-three (33) communities, accessible only by air, to extend registration services to all residents. An Aboriginal Project team has been established and a few staff have been provided with orientation to the project and have been trained in the use of a portable database to register vital events on site.

Results achieved to date are encouraging. Up to this point, the Office has travelled to five (5) communities processing approximately 3,000 applications. The plan is underway to cover the twenty-eight (28) remaining communities with a population base of 16,000 to 20,000.

While the above noted initiative is targeted to improve the registration of all vital events, it is also important to reflect the accuracy of the geographic locations of the vital events. Currently, each municipality in Ontario has a designated Division Registrar and the location of vital events is defined by the municipality's geographic boundaries. Under this arrangement, vital events occurring on reserves are not accurately reflected. The Office of the Registrar General is in the process of entering into a

partnership with Six Nations of the Grand River First Nation to appoint a Division Registrar within its community who would then be responsible for ensuring the accuracy of the geographic location of the vital events.

These initiatives have both immediate and long term benefits. In the short term, the aboriginal population in remote communities is registered with the Office of the Registrar General, allowing the Office to gain valuable knowledge of the unique needs including naming and registration history in these communities. In the longer term, the Office establishes liaisons in the communities for the future and raises awareness of the value and importance of vital event registration.

In addition to meeting its service delivery goals of improving accessibility, timeliness, quality and flexibility, the Office of the Registrar General has taken a step forward to improving aboriginal representation in the National Vital Statistics system. ♦

***Footnote:** The second phase of the Aboriginal Registration Outreach Project began at the end of November. To date, the Aboriginal Project team has travelled on fifteen (15) trips to remote communities in Northwestern Ontario, with another twenty-three (23) trips planned for the new year. In this short time, approximately 2,500 applications have been received and are being processed. It is expected that another 5,000 applications will be received, resulting in a total of more than 10,000 applications for certificates of vital events being processed over the course of this project.*

Vital Statistics Data Critical to National Register of Electors

*Paul Landry, Assistant Director
Interjurisdictional Cooperation
Elections Canada*

The National Register of Electors, an automated database of Canadian electors, was established in December 1996 by amendments to the *Canada Elections Act*, marking the end of an intense period of research, consultation, and legislative preparation. The Register is used to produce the preliminary list of electors for federal electoral events, eliminating the need for door-to door enumeration.

Built in the spring of 1997, prior to the June 1997 federal election, the Register is now into the maintenance phase of its existence. Between general elections, the Register database must be kept accurate and up-to-date, so that at any time it can generate reliable preliminary lists for federal electoral events such as by-elections and referendums, as well as for electoral events within other jurisdictions. Several jurisdictions have signed

agreements with Elections Canada to use Registry data for these purposes.

About 20 percent of elector information changes every year. These changes involve moves, new 18-year-olds, new citizens, and deaths. In order to have these changes included in the database, the National Register of Electors is updated with information supplied by provincial, territorial and federal data sources between electoral events, and by electors themselves during the revision period of electoral events.

Agreements for the provision of data for updating purposes have been concluded with provinces and territories, including Vital Statistics Agencies, motor vehicle registries and the federal departments of Citizenship and Immigration Canada, and Revenue Canada. As well, there are also agreements with the Bureau du Directeur general des elections du Quebec and Elections British Columbia to use data from the permanent electors lists in those jurisdictions.

Updates from vital statistics registries across Canada were of particular significance to reaching a major milestone when on October 15, 1998, Elections Canada released to members of Parliament and political parties the first annual list of electors to incorporate automated updates from provincial, territorial and federal data sources. In accordance with section 71.013 of the Canada Elections Act, elector lists produced from the National Register of Electors will be provided in October of each year to members of Parliament and political parties for the purpose of communicating with constituents.

Thanks to the calibre of collaborative input from vital statistics officials across the country, over 140,000 deceased electors were removed from the Register. Removing these names from the National Register of Electors is especially critical in order to avoid placing MPs and political parties at risk of inadvertently sending materials to deceased constituents. In addition, it goes without saying that the integrity of lists can be compromised if deceased electors are not removed.

Although the currency and quality level of the data is consistent with the projections developed during the research and feasibility study, Elections Canada is now evaluating the processes and sources used to update the Register to see where improvements may be possible. It is expected that the quality of the Register data will be consistent with levels predicted before the Register was established. For example, close to 80 percent of 1997 taxfilers consented to

have their name, address, and date of birth forwarded to Elections Canada for updating purposes. This exceeds the predicted consent rate of 70 percent. We hope to have continued opportunities to share data analysis results with vital statistics registrars and to engage in joint discussions with individual Vital Statistics Agencies and the Health Statistics Division of Statistics Canada to see how we might work together to identify where improvements may be made which would prove mutually beneficial.

Actual financial savings generated by the Register are also exceeding projections, with costs for the build phase, in particular, being almost half of what was estimated. The business case for the National Register of Electors projected that this initiative would result in \$30 million in savings at the federal level alone for each federal electoral event.

Since the June 1997 federal election, the National Register of Electors has provided data at cost, to more than 40 jurisdictions in nine provinces to produce preliminary electoral lists, thereby eliminating costly enumerations and providing savings beyond those projected in the federal business case; savings which accrue to all Canadian taxpayers.

On behalf of Elections Canada, we wish to express our gratitude to the Vital Statistics Council for Canada and to individual registrars across the country, for their co-operation and assistance in helping us meet the challenge of developing a cost-effective and efficient elector registration system.

For more information on Canada's National Register of Electors, please visit the Elections Canada website at: http://www.elections.ca/register/register_e.html. or you may reach us by calling 1 800 INFO-VOTE (1 800 463-6868). Persons who are deaf or hard of hearing may call TTY/TTD 1#800#361-8935. ♦

How automated small-area geographic coding is done from postal codes

Russell Wilkins, Statistics Canada

A previous article in *Vital News* pointed out many of the possible uses of small-area geographic coding from postal codes, emphasizing the need for full and accurate reporting of postal codes on all records. This article explains how the program works, and what kind of output is produced.

Geocodes/PCCF(1) consists of a SAS control

program and a series of reference files derived mainly from the Statistics Canada Postal Code Conversion File (PCCF). It automatically assigns a full range of geographic identifiers (down to enumeration area, latitude and longitude) based on postal codes. It is consistent and logical in the way it does this. Any incorrect coding due to errors in the underlying reference files can easily be corrected once identified. To do such coding by manual methods would require highly skilled coders with lots of time and access to the full mailing address. Even so, the results would tend to be less accurate (particularly in urban areas), and they could inadvertently introduce systematic bias (especially in rural areas).

By use of an auxiliary file based on census population and postal code data (the weighted conversion file, or WCF), records with postal codes which serve more than one enumeration area--including most rural postal codes and several classes of urban postal codes--are assigned geographic codes based on a household-weighted random allocation among the possible codes. For the 30% of the population with such postal codes (more in some provinces, less in others), this produces an unbiased allocation of events in relation to the resident population. The simpler alternative of forcing a one-to-one correspondence between postal codes and geography (using the single link indicator on the PCCF) necessarily results in considerable bias, resulting in a doubling of the error percentage at the census subdivision (CSD or SGC) level, for example.

As long as the postal codes on the incoming file are valid for the corresponding addresses, Geocodes/PCCF will usually generate very acceptable geographic coding (extremely precise in urban areas, but less so in rural areas), so manual coding is no longer required except in very rare circumstances. However, because of the nature of the PCCF, a few classes of valid postal codes cannot be assigned full geographic identifiers corresponding to a place of residence or business. In such cases, as well as for postal codes that do not match exactly to the PCCF, an error condition is generated and the first two or three characters of the postal code are then used to assign partial geographic identifiers to the extent possible. That takes care of many situations where the last one, two, or three characters of the postal code are invalid, but the first two or three characters are valid. For all problem records, detailed diagnostic and reference information is produced. Business and institutional addresses are clearly

identified, which helps the user to determine if the postal code corresponds to the client's usual place of residence (or business), or was the result of a keying or reporting error. An alternate version of the control program is also provided for better coding of the location of health facilities and professionals, as opposed to places of residence, where that is desired.

The programs are very simple to use. All you have to do is indicate where to find the postal code and record identification (registration number) fields on the incoming file, and where to put the two output files (one for the complete output and the other for problem records only). Everything else is automatic. A one page summary of the coding results is also produced, in addition to the output files and print outs of results.

In each case where Geocodes/PCCF encounters a possible problem with its automated coding, diagnostic codes are output to a problem file, together with any partial geographic identifiers which may have been determined. The program listing prints out the problem records grouped by type of problem; the records themselves follow a brief printed message describing the problem and suggesting how to correct it. Usually the first thing

Annual Meeting 1999

What: The Vital Statistics Council for Canada 1999 Meeting with Representatives from Provincial/Territorial Vital Statistics Agencies and Statistics Canada

When: June 21 - 25, 1999

Where: Prince Edward Hotel, Charlottetown, Prince Edward Island

Organizations who wish to make a presentation to the Council at this meeting should address their requests no later than May 31, 1999 to:

Secretariat
Vital Statistics Council for Canada
c/o Health Statistics Division
Statistics Canada
18th Floor, R.H. Coats Building
Ottawa, Ontario
K1A 0T6

to do is to check the postal code to make sure that it was correctly entered, and to see that the postal code shown is the correct one for the address.

Postal codes which refer to business and institutional addresses are clearly identified. The problem records for most such cases show the building, company, or institutional establishment name and brief address--which can help in determining if the postal code corresponds to the client's usual place of residence (or business), or was the result of a keying or reporting error.

For records with invalid postal codes, "most likely" partial geographic coding based on the first two or three characters of the postal code is suggested where possible. This is usually sufficient for making a reasonably accurate imputation of census division and census metropolitan area codes. In addition, for urban postal codes, the first three characters are usually sufficient for imputation of census subdivision codes.

For more information please contact Russell Wilkins at the Health Statistics Division (telephone 1-613-951-5305; fax 1-613-951-0972; email wilkrus@statcan.ca). For copies of the Geocodes/PCCF programs (requires SAS), data files, and documentation (now available formatted as an MS Word document file) contact Colette Brassard at the Operations and Integration Division--Health (telephone 1-613-951-1750; fax 1-613-951-0709; email [HYPERLINK mailto:brassar@statcan.ca](mailto:HYPERLINKmailto:brassar@statcan.ca)). ♦

Reference

(1) Wilkins R. Geocodes/PCCF Version 2 User's Guide. Automated Geographic Coding Based on the Statistics Canada Postal Code Conversion File. Ottawa: Health Statistics Division, Statistics Canada, Ottawa, July 1996.

ON A TYPICAL DAY IN NOVA SCOTIA IN 1997

The following events were recorded:

27 LIVE BIRTHS OCCURRED IN THE PROVINCE TO NOVA SCOTIA RESIDENTS:

- 14 males and 13 females
- 2 were born to teenage mothers
- 10 were born to parents not married to each other
- 4 live births were registered with no father named
- 16 low birth weight babies were born every 10 days (2500 grams or less)
- 3 multiple births occurred every 10 days
- 2 stillbirths occurred every 10 days

22 DEATHS OCCURRED IN THE PROVINCE TO NOVA SCOTIA RESIDENTS:

- 11 males and 11 females
- 8 deaths were due to diseases of the circulatory system including:
 - 6 - deaths from heart disease
 - 2 - deaths from cerebrovascular diseases

6 deaths were due to cancer including:

- 2 - from lung cancer
- 2 deaths were due to diseases 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 were due to Alzheimer's disease
- 1 death occurred every 35 days due to AIDS/HIV infections
- 2 infant deaths occurred every 12 days

14 MARRIAGES WERE SOLEMNIZED IN NOVA SCOTIA:

- 2 were civil ceremonies and 12 were performed by religious representatives
- 9 marriages were to couples where both parties were marrying for the first time
- 1 marriage every 55 days was to a couple where both parties were teenagers

Source: Vital Statistics, Business and Consumer Services, Nova Scotia

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