

What the Census Can Tell Us About Canada's Dental Workforce

The healthcare workforce in Canada is not distributed geographically in proportion to the distribution of the general population. In addition, there is constant movement of healthcare workers within a province or territory and from one province or territory to another.

With the exception of physicians and nurses, very few studies have been done on the geographical distribution and mobility of healthcare providers in Canada, and there are limited sources of data for such studies. However, the Canadian Census of Population can provide some of this information, and a series of reports prepared for the Canadian Institute for Health Information (CIHI) seeks to "mine" some of that information by analyzing data about more than 20 healthcare occupations (see list on back page). Comparing data from the 1991, 1996, and 2001 census years not only reveals how the total numbers and characteristics of age and sex have changed but also shows the numbers and some aspects of those workers who have moved.

Among these groups studied are five engaged in dental care:

- ▶ dentists
- ▶ dental hygienists and dental therapists
- ▶ dental assistants
- ▶ denturists
- ▶ dental technologists, technicians, and laboratory bench workers.

This issue of Research in FOCUS on Research looks at what the Census can tell us about these dental health practitioners.

The Dental Workforce in 2001

Numbers in all dental groups increased over the 10-year period from 1991 to 2001, most noticeably among dentists and dental hygienists/therapists. These increases occurred right across Canada, with only a few exceptions: the numbers of dental hygienists/therapists were down in Manitoba and Yukon; the numbers of dental assistants decreased by 22% in Newfoundland and Labrador and only slightly in Saskatchewan; the numbers of denturists were down 31% in New Brunswick and 43% in Manitoba; and the numbers of dental technologists dropped by just over 10% in New Brunswick, Ontario, and Alberta.

| Workforce | Total in 2001 | Increase since 1991 (%) | Female (% of total) |
|------------------------------|---------------|-------------------------|---------------------|
| Dentists | 18,590 | 36 | 28 |
| Dental hygienists/therapists | 14,875 | 50 | 98 |
| Dental assistants | 26,845 | 14 | 98 |
| Denturists | 2,235 | 17 | 22 |
| Dental technologists | 6,260 | <1 | 46 |

Note: Statistics Canada has rounded off the numbers of healthcare workers to the nearest 5 or 10 for all tables.

This issue of Research in FOCUS on Research is based on the series *Distribution and Internal Migration of Canada's Health Care Workforce* prepared by J. Roger Pitblado, Senior Research Fellow of the Centre for Rural and Northern Health Research, for the Canadian Institute for Health Information, 2007. Three of the 15 reports published in this series focus on Canada's dental workforce: dentists, dental hygienists and dental therapists, and dental assistants. The full series of reports is freely available at www.cihi.ca. Tables and figures relating to denturists and dental technologists will be available at the same website.

For some, these increases were considerably greater than the increase in Canada's population. For every 100,000 Canadians, the number of dentists increased by 23% over this 10-year period, the number of dental hygienists/therapists by an impressive 38%, the number of dental assistants by 4%, and the number of denturists by 7%. However, the number of dental technologists for every 100,000 Canadians dropped by 9% over the same period.

Most ratios in the provinces and territories followed these national patterns of increase over the 10 years. However, Manitoba's number of dental hygienists/therapists per 100,000 population dropped by 8%, and there were decreases in the ratios of dental assistants per 100,000 population in Newfoundland and Labrador, Quebec, and British Columbia. For denturists the ratio per 100,000 population fell in Prince Edward Island, New Brunswick, and Manitoba. At the same time, the ratios of dental technologists per 100,000 population decreased in most provinces and territories.

Sex

While the overall total numbers of workers in these occupations increased, the proportions of females in most also rose: from 16% for dentists to 28%, from 96% to 98% for dental hygienists/therapists, from 20% to 22% for denturists, and from 40% to 46% for dental technologists. The proportion of female dental assistants remained unchanged at 98%.

Age

The average ages in these occupational groups grew over this 10-year period: from 42 to 44 years for dentists, from 33 to 36 years for dental hygienists/therapists, from 32 to 35 years for dental assistants, from 43 to 44 years for denturists, and from 38 to 42 for dental technologists. This aging of the dental workforce reflects the general aging of the Canadian workforce, which increased from 39 to 41. It can be seen that in some instances the gap between the dental workers' ages and the average Canadian worker's age was closing.

Canada's Dental Workforce in 2001 by Province and Territory

| | Dentists | Dental Hygienists/Therapists | Dental Assistants | Denturists | Dental Technologists |
|-----------------------------------|----------|------------------------------|-------------------|------------|----------------------|
| Newfoundland and Labrador | 160 | 85 | 230 | 65 | 85 |
| Prince Edward Island | 70 | 40 | 140 | 10 | – |
| Nova Scotia | 475 | 365 | 710 | 85 | 155 |
| New Brunswick | 250 | 220 | 395 | 55 | 95 |
| Quebec | 3,850 | 3,435 | 4,510 | 895 | 1,315 |
| Ontario | 7,870 | 6,640 | 10,615 | 505 | 2,075 |
| Manitoba | 635 | 385 | 1,020 | 40 | 245 |
| Saskatchewan | 460 | 400 | 755 | 100 | 260 |
| Alberta | 1,865 | 1,335 | 3,410 | 250 | 855 |
| British Columbia | 2,945 | 2,015 | 5,075 | 265 | 1,225 |
| Yukon | 10 | 10 | 50 | 10 | 25 |
| Northwest Territories and Nunavut | 40 | 40 | 40 | – | 20 |

Migration Patterns Within Canada

The Census asks Canadians where they were five years ago. Thus, it can be determined that 76% of dentists in 1991 had not moved to another community in the previous five years, and that 80% in 2001 were non-movers. Similarly, there was an increase from 64% to 75% in the number of dental hygienists/therapists who stayed in the same community over the same period. Among dental assistants, the increase was from 68% to 77%.

Of those dentists, dental hygienists/therapists, dental assistants, and dental technologists who did move in all three migration periods studied, the majority remained within the same province or territory. Those who moved to another province or territory had very similar patterns to the interprovincial migration of the general Canadian population, i.e., most often to the large “magnet” provinces of Ontario, Alberta, and British Columbia. The next most popular destination was a neighbouring province.

Alberta had the highest net gain in dentists in the 1996 to 2001 migration period. Provinces with net losses of dentists over the same period were Nova Scotia, Quebec, Manitoba, and Saskatchewan. For dental hygienists/therapists and dental technologists, Alberta again grew as a principal destination. Alberta and Ontario had the largest gains in the dental assistant workforce. There was so little interprovincial movement by denturists that Statistics Canada suppressed the numbers for privacy protection reasons.

The Dental Workforce in Rural Canada

One of the biggest imbalances in the distribution of healthcare workers in Canada is considered to be between rural and urban areas. Rural and small-town areas (i.e., with populations under 10,000) are often described as “underserved,” especially in terms of the physician workforce. This observation also applies to many other healthcare occupations. From Census statistics, it can be shown that Canadians in rural areas and small towns had a smaller proportion of dental workers in their communities than urban Canadians did during the period studied, despite slight increases in numbers between 1991 and 2001.

| Workforce | Percentage in rural areas 1991 | Percentage in rural areas 2001 |
|------------------------------|--------------------------------|--------------------------------|
| Dentists | 12 | 11 |
| Dental hygienists/therapists | 14 | 16 |
| Dental assistants | 17 | 16 |
| Denturists | 16 | 13 |
| Dental technologists | 5 | 10 |
| <i>Canadian population</i> | 23 | 21 |

Rural-urban migration

Census data also allow the movement of dental workers from rural to urban practice and vice versa to be tracked.

In each of the three migration periods, more dentists in Canada moved from urban areas to rural areas than from rural to urban; for example, 18% of dentists relocated to rural areas compared to 14% moving to urban areas in 1991, for a positive rural net-migration rate of 4%. This positive 4% rate was repeated in 1996 and increased to 7% in 2001. However, this urban-to-rural flow did not outweigh the overall increases in urban dentists.

Denturists also maintained positive rural net-migration rates for all three migration periods: 11% in 1991, 9% in 1996, and 6% in 2001.

For dental hygienists/therapists, the migration pattern was different. In 1991, there was a negative rural net-migration rate of -5%, but this reversed to a positive rate of almost 9% in 1996, then dropped to 2% in 2001.

Dental assistants and dental technologists showed a stronger trend of moving away from rural areas. Their rural net-migration rates were negative for all three migration periods: -4% in 1991, -1% in 1996, and -3% in 2001 for dental assistants; and -17%, -8%, and -8% for dental technologists in the same periods.

In contrast to the rural out-migration of younger members of the general Canadian workforce, a relatively large proportion of dentists who moved from urban areas to rural and small-town areas were in the 20-29 age group. Other age groups of dentists matched more closely the patterns of in- and out-migration of the general Canadian workforce.

The flows of dental hygienists/therapists and dental assistants in and out of rural and small-town Canada were generally similar to the flows of the general

population for all age groups, except that dental assistants aged 40 to 59 were more likely to leave rural and small-town areas than their counterparts in the general Canadian workforce.

The data shown above help explain, to some extent, access to and utilization of dental services by Canadians in rural and urban areas. They also have implications for health workforce planning and the training of dental care practitioners.

For Further Information.....

The data presented here about Canada's dentists, dental hygienists/therapists, and dental assistants are drawn from reports published online in the CIHI series (at www.cihi.ca).

Other reports in the series contain similar data on the distribution and migration within Canada of other healthcare occupations as follows:

- ▶ audiologists
- ▶ licensed practical nurses
- ▶ medical laboratory technicians
- ▶ medical laboratory technologists and pathologists' assistants
- ▶ medical radiation technologists
- ▶ medical sonographers
- ▶ occupational therapists
- ▶ pharmacists
- ▶ physicians (specialist physicians and general practitioners/family physicians)
- ▶ physiotherapists

- ▶ registered nurses
- ▶ respiratory therapists, clinical perfusionists, and cardiopulmonary technologists

Data shown in this publication relating to denturists and dental technologists are drawn from tables and figures available on the CIHI website. Similar data are posted there for the following healthcare occupations:

- ▶ nurse aides, orderlies, and patient service associates
- ▶ cardiology technologists
- ▶ electroencephalographic and other diagnostic technologists
- ▶ optometrists
- ▶ opticians
- ▶ chiropractors
- ▶ dietitians and nutritionists
- ▶ ambulance attendants and other paramedical occupations

08-A2

Research in **FOCUS** on Research is published by the Centre for Rural and Northern Health Research (CRaNHR), Laurentian University. Each issue is a summary of a study conducted by CRaNHR researchers. As a form of knowledge dissemination and transfer, it is intended to make research accessible to a wider audience.

For further information, please contact:
Centre for Rural and Northern Health Research
Laurentian University
Ramsey Lake Road
Sudbury, Ontario, Canada P3E 2C6

phone: 705-675-1151 ext. 4357
fax: 705-675-4855
e-mail: cranhr@laurentian.ca
URL: www.cranhr.ca