

## What the Census Can Tell Us About Canada's Rehabilitation 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 geographic 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 analysing 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 three engaged in rehabilitation therapy:

- ▶ audiologists and speech-language pathologists
- ▶ physiotherapists
- ▶ occupational therapists.

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

### The Rehabilitation Workforce in 2001

Numbers in all three rehabilitation groups increased over the 10-year period from 1991 to 2001. These increases occurred right across Canada, with only a few exceptions. Prince Edward Island and the territories were the most out of step with the rest of Canada. Prince Edward Island was the only jurisdiction to lose audiologists and speech-language pathologists (from 40 to 25). The only other rehabilitation workforce that showed a decrease was the occupational therapy workforce in the Northwest Territories and Nunavut, which lost all 10 of the occupational therapists reported in 1991. In contrast, the physiotherapy workforces more than doubled over these 10 years in Prince Edward Island, Northwest Territories and Nunavut, and Yukon.

Workforce	Total in 2001	Increase since 1991 (%)	Female (% of total)
Audiologists and Speech-Language Pathologists	6,220	56	92
Physiotherapists	16,440	43	80
Occupational Therapists	10,040	68	90

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, Laurentian University, for the Canadian Institute for Health Information, 2007. Three of the 15 reports published in this series focus on Canada's rehabilitation workforce: audiologists and speech-language pathologists, physiotherapists, and occupational therapists. The full series of reports is freely available at [www.cihi.ca](http://www.cihi.ca).

These growth rates were considerably greater than that in Canada's population. For every 100,000 Canadians, the number of audiologists and speech-language pathologists increased by 42% over this 10-year period (from 15 in 1991 to 17 in 1996 and 21 in 2001), the number of physiotherapists by 30% (from 42 in 1991 to 47 in 1996 and 55 in 2001), and the number of occupational therapists by 52% (from 22 in 1991 to 23 in 1996 and 34 in 2001).

Most ratios in the provinces and territories followed these national patterns of increase over the 10 years. Prince Edward Island stands out as the only province that had decreases in the ratio of audiologists and speech-language pathologists per 100,000 population (down 40% from 1991 to 2001) and in the ratio of occupational therapists (down 4%). All provinces and territories showed increases in the ratios of physiotherapists per 100,000 population; however, there were wide variations among the provinces (67 per 100,000 in British Columbia in 2001 compared to 37 in Prince Edward Island). There was a similarly wide range in the 2001 provincial ratios of occupational therapists per 100,000 population, from 42 in Manitoba to 24 in Saskatchewan.

## Sex

In 2001, 46% of the general Canadian workforce were female, up slightly from 45% in 1991. Although much higher, the percentages of females in the rehabilitation workforces were similarly static: the percentage of female audiologists and speech-language pathologists decreased by less than 1% over the 10 years, while the percentage of female occupational therapists increased by less than 1%. Only the physiotherapy workforce showed a more significant change in the percentage of females, decreasing by five percentage points, from 85% to 80%.

## Age

The average ages in these occupational groups grew over this 10-year period: from 35 to 38 years for audiologists and speech-language pathologists, from 36 to 39 years for physiotherapists, and from 34 to 36 years for occupational therapists. This aging of the rehabilitation workforce reflects the general aging of the Canadian workforce, which increased from 39 to 41. It can be seen that in most cases the gap between the rehabilitation workers' ages and the average Canadian worker's age was closing.

### Canada's Rehabilitation Workforce in 2001 by Province and Territory

	Audiologists and Speech-Language Pathologists	Physiotherapists	Occupational Therapists
Newfoundland and Labrador	85	205	135
Prince Edward Island	25	50	35
Nova Scotia	200	410	290
New Brunswick	135	345	255
Quebec	1,310	4,390	2,695
Ontario	2,330	5,715	3,320
Manitoba	270	530	470
Saskatchewan	190	490	235
Alberta	810	1,680	1,185
British Columbia	920	2,600	1,450
Yukon	*	50	35
Northwest Territories and Nunavut	30	30	0

\*Data from Yukon have been suppressed due to small cell sizes.

## Migration Patterns Within Canada

The Census asks Canadians where they were five years ago. Thus, it can be determined that 61% of physiotherapists in 1991 had not moved to another community in the previous five years, and that 72% in 2001 were non-movers. Similarly, there was an increase from 58% to 65% in the number of occupational therapists who stayed in the same community over the same period. Among audiologists and speech-language pathologists, the increase was from 57% to 66%.

The majority of rehabilitation workers who did move during all three migration periods studied remained within the same province or territory. Despite being more mobile than the general Canadian population, those rehabilitation workers who moved to another province or territory had mobility patterns very similar to the general Canadian interprovincial migration, i.e. most often to the large “magnet” provinces of Ontario, British Columbia, and increasingly, Alberta. The next most popular destination was a neighbouring province.

Over the 10 years, most provinces experienced net losses in their rehabilitation workforce. In 2001, Ontario, Alberta and British Columbia showed net gains; Ontario had held its 1991 level, Alberta had moved from net losses to net gains, and British Columbia’s net gains had shrunk considerably. For physiotherapists, only Alberta and British Columbia had net gains in 2001. Quebec and Ontario each had a net loss of 40 physiotherapists by 2001. For occupational therapists, only Saskatchewan and British Columbia showed net gains.

## The Rehabilitation Workforce in Rural Canada

Rural-urban imbalances in the distribution of healthcare workers is considered to be a major concern in Canada. 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 rehabilitation workers in their communities than urban Canadians did during the period studied, despite slight increases in the rural proportions of physiotherapists and occupational therapists between 1991 and 2001.

Workforce	Percentage in rural areas 1991	Percentage in rural areas 2001
Audiologists and Speech-Language Pathologists	14	10
Physiotherapists	11	13
Occupational Therapists	8	9
<i>Canadian population</i>	23	21

### Rural-urban migration

Census data also allow the movement of rehabilitation workers from rural to urban practice and vice versa to be tracked. Each of the three groups of workers shows a different pattern of rural-urban migration.

Audiologists and speech-language pathologists showed a steady changing of direction, from rural migration to urban: 34% had relocated in the previous 5 years to rural areas in 1991, compared to 20% moving to urban areas, for a positive rural net-migration rate of 14%. This positive rate shrank to 8% in 1996 and became negative (at -1%) in 2001 (i.e. with slightly more workers moving to urban areas than to rural).

Physiotherapists, on the other hand, showed a change in the reverse direction, from urban migration to rural. In 1991, there was a negative rural net-migration rate of 10%, but this changed to a positive rate of almost 9% in 1996, which then dropped to 2% in 2001.

Occupational therapists showed yet another pattern. In 1991, they had a negative rural net-migration rate of 13%. By 1996, this reversed to a positive rate of 8%, but then slipped back to a negative rate of 2% in 2001.

In contrast to the rural out-migration of younger members of the general Canadian workforce, a relatively large proportion of audiologists and speech-language pathologists in the 20–29 age group moved from urban areas to rural and small-town areas. However, by 2001 there was a net rural loss of these younger workers.

Similar to the pattern of the same age group in the general Canadian workforce, more physiotherapists and occupational therapists in the 20–29 age group moved from rural and small town areas to urban areas than from urban to rural. This was more pronounced in 1991 than in 2001.

Most other age groups of all three rehabilitation workforces matched more closely the patterns of urban-to-rural migration of the general Canadian workforce.

The only net losses for rural areas were for audiologists and speech-language pathologists aged 50 and over, for physiotherapists aged 40–49 in 1991, and for occupational therapists aged 30–39 in 1991 and 40–49 in 2001.

The data shown above help explain, to some extent, access to and utilization of rehabilitation services in rural and urban areas. They also have implications for workforce planning and education.

---

## For Further Information.....

The data presented here about Canada's audiologists and speech-language pathologists, physiotherapists, and occupational therapists are drawn from reports published online in the CIHI series (at [www.cihi.ca](http://www.cihi.ca)).

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

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

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

In addition, tables and figures are posted on the CIHI website for the following healthcare workforces:

- ▶ denturists
- ▶ dental technologists
- ▶ 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-A3

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](mailto:cranhr@laurentian.ca)  
URL: [www.cranhr.ca](http://www.cranhr.ca)