



# Rural and Small Town Canada ANALYSIS BULLETIN



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## HOW FAR TO THE NEAREST PHYSICIAN?

*Edward Ng, Russell Wilkins, Jason Pole and Owen B. Adams*

### HIGHLIGHTS

- ◆ In 1993, there were only half as many physicians per 1,000 population in rural and small town Canada compared to larger urban centres.
- ◆ However, two-thirds of rural and small town Canadians lived within 5 km of a physician. About 7 percent lived more than 25 km from a physician.
- ◆ In northern remote communities, over two-thirds of the population lived more than 100 km from a physician.

### Introduction

When Canadians need to see a doctor, the cost of physician services is not a barrier. However, travel distance may restrict some people's access to health services. This article examines the proximity of the population to physicians. From a representative point within each of Canada's 45,995 Enumeration Areas (EAs), we calculated the aerial distance to the nearest physician.

Distance to the nearest physician is, of course, just one part of the health care issue facing residents outside larger urban centres. Related issues, such as the quality and type of facilities and the availability of emergency treatment, are important subjects for rural populations, but are not discussed here.



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**Note of Appreciation**

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

**Methodology**

*The population and income data analysed in this bulletin are from the 1991 Census of Population.*

*It was not possible to calculate the distance to the nearest physician for each individual. Instead, small geographic areas – census Enumeration Areas (EAs) – were considered. An EA is the geographic area canvassed, or enumerated, by one census representative. In rural areas, an EA can cover relatively wide reaches of land, but in urban areas, an EA is usually several city blocks. Each EA has a representative point that was used to represent the location of each EA resident.*

*For this bulletin, the postal codes for the mailing addresses of 57,291 physicians (including general practitioners and specialists) were obtained from the Canadian Medical Association's Physician Master file for the summer of 1993. These addresses were assumed to refer to the location where physician services were provided.*

*The aerial distances from each EA representative point to the nearest physician were measured. If the calculated distance was 0.5 km or less (for example, in cases where the physician lived at the same representative point as the population), 0.5 km was arbitrarily assigned as the distance.*

*For rural postal codes, the EA in which the post office was located was selected, along with the latitude and longitude of its representative point. It was assumed that a physician's practice was more likely to be located in the village centre, along with the post office, rather than in the outlying areas served by the same rural postal code. The net effect of this assumption combined with the technique of using EA representative points to represent a group of residents is unknown. Because rural postal codes cover relatively large areas compared with their urban counterparts, and because rural populations are more dispersed, the implications are more consequential for estimates in rural areas. Specifically, assigning one representative point for each rural EA will provide a "less precise" estimated distance to physicians for rural residents compared to urban residents.*

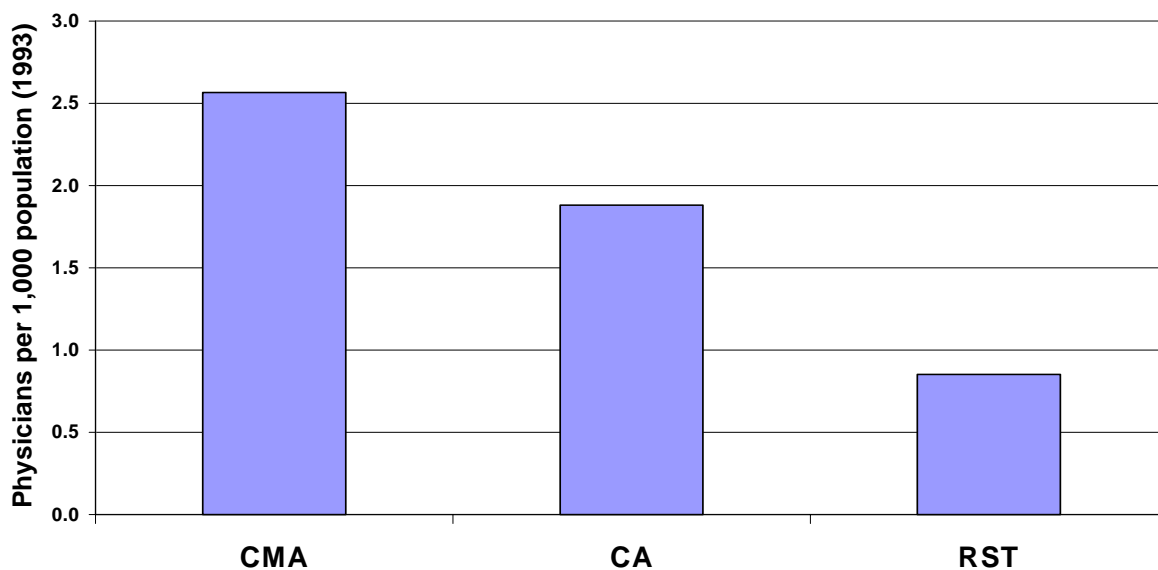
*Data are presented for CMAs, CAs, and Rural and Small Town (RST) areas. RST refers to the population living outside the commuting zones of larger urban centres - specifically, outside Census Metropolitan Areas (CMAs) and Census of Agglomerations (CAs). A CMA has an urban core of 100,000 or over and includes all neighbouring municipalities where 50 percent or more of the work force commutes into the urban core. A CA has an urban core of 10,000 to 99,999 and includes all neighbouring municipalities where 50 percent or more of the work force commutes into the urban core. Thus, RST Canada represents the non-CMA and non-CA population. It includes all the residents outside the commuting zones of larger urban centres.*

## Fewer physicians in rural and small town areas

Within rural and small town (RST) areas, there are fewer physicians compared to larger urban centres. In 1993, there was less than one physician per 1,000 population compared to two or more physicians per 1,000 population in larger urban centres (Figure 1). However, many RST residents may have easy access to physicians in larger urban centres.

**Figure 1**

**Rural and small town Canada has less than half the number of physicians per 1,000 population, compared to larger urban centres**



Source : Ng et al. "How far to the nearest physician?", *Health Reports* (Cat. No. 82-003-XPB) Vol. 8, n° 4, (Spring, 1997 pp. 19-31).

## RST residents must travel further to visit a physician.

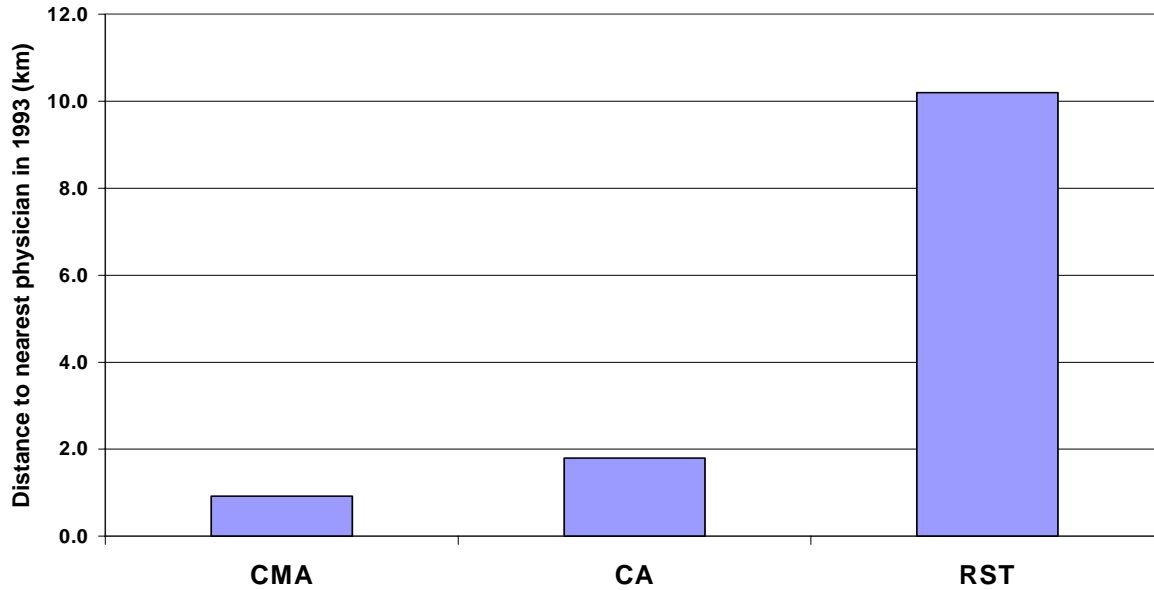
In fact, the average resident in RST areas was 10 km from a physician, compared to less than 2 km, on average, for residents of larger urban centres (Figure 2).

## A small share of RST residents live more than 25 km from a physician

Although the average RST resident is 10 km from a physician, over one-half were less than 5 km from a physician (Figure 3). However, within RST areas, 7 percent of the residents were more than 25 km from a physician.

Figure 2

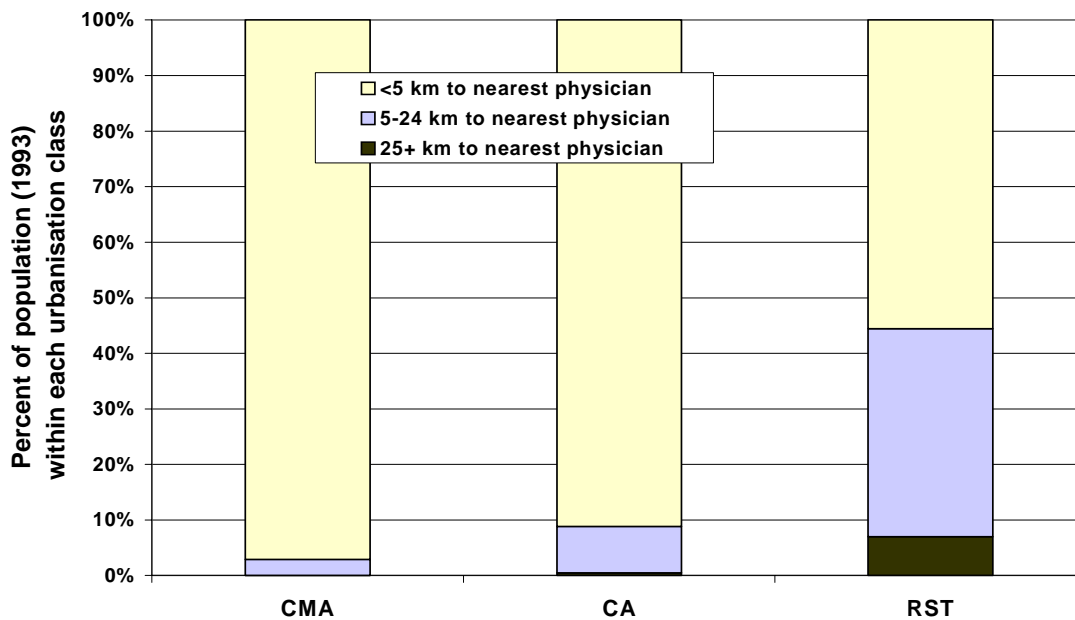
Rural and Small Town Canadians live, on average, 10 km from a physician



Source : Ng et al. "How far to the nearest physician?", Health Reports (Cat. No. 82-003-XPB) Vol. 8, n° 4, (Spring, 1997 pp. 19-31).

Figure 3

About 7 percent of rural and small town Canadians live 25 km or more from a physician

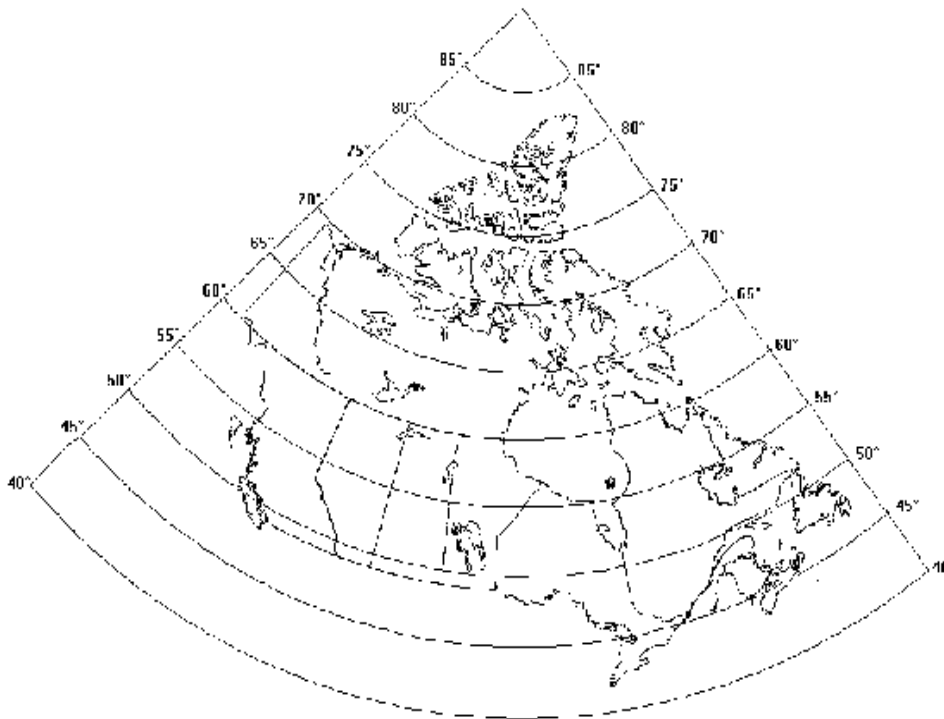


Source : Ng et al. "How far to the nearest physician?", Health Reports (Cat. No. 82-003-XPB) Vol. 8, n° 4, (Spring, 1997 pp. 19-31).

## Remote populations have less access to physicians

Since residents of Canada's northern remote regions are located in widely dispersed communities, it is not surprising they have less access to physicians. For instance, 16,000 people live at 65-69° north latitude (the northern part of Yukon and Northwest Territories – see map) and about two-thirds of these individuals live more than 100 km from a physician (Figure 4). No physicians were normally in residence above 70° north latitude to serve the 3,300 people living there. The entire population was more than 100 km from the nearest physician. However, physicians may still be available in these remote areas through temporary assignments or rotation programs. As well, medical services may be provided by clinics staffed by nurses.

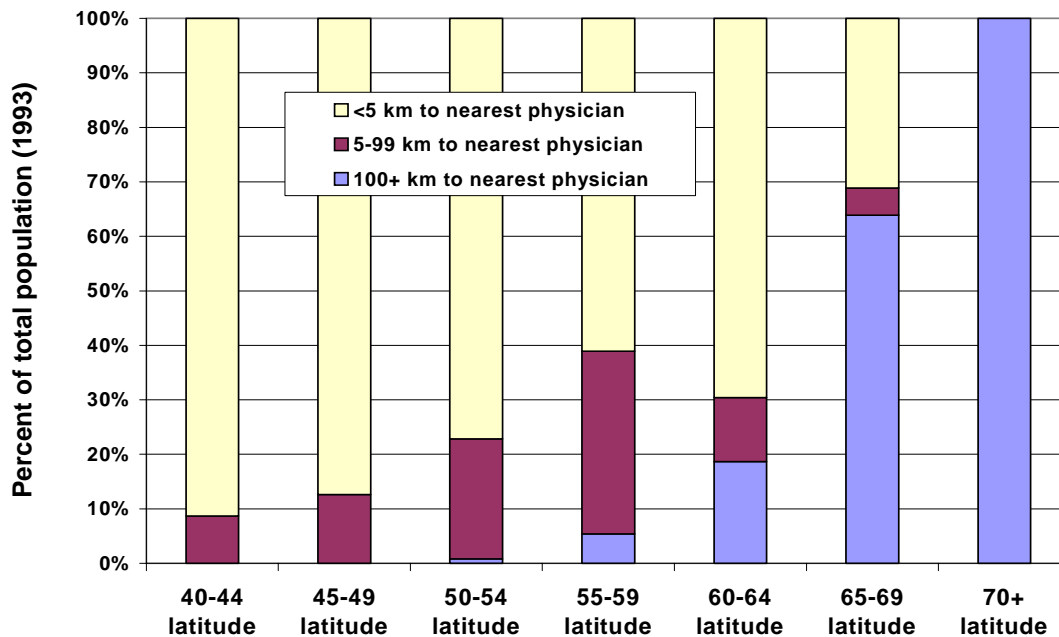
### Map: Canada with degrees of latitude



*Source: Geography Division, Statistics Canada.*

Figure 4

Remote populations have less access to physicians



Source : Ng et al. "How far to the nearest physician?", Health Reports (Cat. No. 82-003-XPB) Vol. 8, n° 4, (Spring, 1997 pp. 19-31).

To conclude

Although there are only half as many physicians per 1,000 population in rural and small town Canada, two-thirds of rural and small town Canadians live within 5 km of a physician. About 7 percent live more than 25 km from a physician.

In northern and remote communities, over two-thirds of the population lives more than 100 km from a physician.

This article provides data<sup>1</sup> on the distance that rural and small town residents must travel to visit a physician. Unanswered here is whether the distance to a physician is a deterrent to care. Patients who must travel a long distance to visit a doctor may put off regular check-ups. Some may postpone visiting a physician for apparently minor ailments. Data on the incidence of diseases and health problems by distance to the nearest physician would be needed to address this question.

<sup>1</sup> We acknowledge that the data are six years old, referring to 1993. A recent report by Paul Jordan (*Living in Atlantic Canada, 1998: Perceptions About Life in Rural and Small Towns* (Sackville, N.B.: Rural and Small Town Programme, Mount Allison University)) noted that 70 percent of residents in rural communities in the Atlantic Provinces said their communities had been affected by a reduction in health services and 55 percent reported a loss of rural doctors.

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This analysis bulletin is based on a longer article by Edward Ng, Russell Wilkins, Jason Pole and Owen B. Adams entitled “How far to the nearest physician?” in **Health Reports**, Vol. 8, No. 4. (Statistics Canada Cat. No. 82-003-XPB, Spring, 1997), pp. 19-31. Russell Wilkins may be contacted at (613) 951-5305 (wilkrus@statcan.ca).