



Analytical Bulletin: 2004 National Physician Survey Response Rates and Comparability of Physician Demographic Distributions with those of the Physician Population

CIHI Physician Databases

2005:1

Introduction

Survey-based data plays a unique role in responding to the information needs of health care researchers, planners and decision makers. With respect to Canada's physician-related information sources, survey data fills information gaps in existing administrative data sources by addressing emerging health information needs in a timely manner.

Surveys seldom achieve 100% response rates. It is, therefore, helpful to know if those who do respond to a particular survey are representative of the population of interest. This question is often addressed in survey studies by reporting response rates and comparing the known demographic characteristics of the population to those of survey respondents.

This analytical bulletin looks at the 2004 National Physician Survey (NPS). It describes provincial and territorial response rate variations among family doctors and specialist physicians. It also describes the comparability of NPS respondents to the general physician population, in terms of age, sex, medical specialty and geographic distributions.

Data Sources

Canadian Medical Association (CMA) Masterfile: The CMA Masterfile was used as the mailing list for the 2004 National Physician Survey. The CMA Masterfile includes all physicians in Canada holding a medical license and is compiled and updated on a daily basis with information received from provincial licensing bodies, associations, College of Family Physicians of Canada and Royal College of Physicians and Surgeons of Canada membership listings, and individual physicians.

2004 National Physician Survey (NPS) Database: The NPS Database contains information provided by the 21,296 eligible physicians who replied to the 2004 National Physician Survey. Detailed information on the NPS, including survey methodologies, questionnaire forms, study results and data request procedures, is published on the NPS website (www.nps-snm.ca).

2004 National Physician Survey Response Rates

In February 2004, 61,751 physicians in all provinces and territories were contacted through the 2004 NPS. A number of physicians who were contacted indicated that they were retired, in a residency program or working abroad ($n = 2,352$). This reduced the estimated eligible physician population to 59,399. By June 30th, 2004, when NPS data collection ceased, one-third of Canada's eligible physician workforce had replied to the survey.

Table 1 presents the provincial and territorial response rate information for family and general practitioners (FP/GPs) and specialist physicians. The provinces of Newfoundland and Labrador, Quebec, Manitoba and British Columbia registered response rates below the national rate of 35.85%, based on the combined results for FP/GPs and specialists. Response rates for these provinces were 34.65%, 28.44%, 35.79% and 35.18%, respectively. Over 40% of physicians in Prince Edward Island, New Brunswick, Ontario and the combined territories responded to the 2004 NPS.

Response rates were relatively high for specialist and family physicians in Prince Edward Island and the territories. Apart from physicians in these regions, the greatest spread in response rates was between Québec specialist physicians and Saskatchewan specialist physicians, registering response rates of 28.35% and 40.93% respectively. FP/GPs and specialist physicians were very similar in terms of their overall survey response rates (35.73% and 35.99%, respectively).

Table 1. Physician Distributions and Response Rates, by Province, Territory and Broad Medical Specialty

Province/ Territory	Broad Specialty	Eligible Population ¹		NPS Respondents ²		Response Rate (%)
		Number of Physicians	Distribution Across Eligible Population (%)	Number of Physicians	Distribution Across NPS Respondents (%)	
N.L.	FP/GP	642	1.08%	229	1.08%	35.67%
	Specialists	374	0.63%	123	0.58%	32.89%
P.E.I.	FP/GP	135	0.23%	58	0.27%	42.96%
	Specialists	79	0.13%	37	0.17%	46.84%
N.S.	FP/GP	1,093	1.84%	416	1.95%	38.06%
	Specialists	934	1.57%	375	1.76%	40.15%
N.B.	FP/GP	783	1.32%	313	1.47%	39.97%
	Specialists	495	0.83%	203	0.95%	41.01%
Que.	FP/GP	7,968	13.41%	2,273	10.67%	28.53%
	Specialists	7,841	13.20%	2,223	10.44%	28.35%
Ont.	FP/GP	10,344	17.41%	4,154	19.51%	40.16%
	Specialists	10,885	18.33%	4,348	20.42%	39.94%
Man.	FP/GP	1,135	1.91%	398	1.87%	35.07%
	Specialists	986	1.66%	361	1.70%	36.61%
Sask.	FP/GP	1,045	1.76%	350	1.64%	33.49%
	Specialists	579	0.97%	237	1.11%	40.93%
Alb.	FP/GP	3,021	5.09%	1,174	5.51%	38.86%
	Specialists	2,582	4.35%	1,027	4.82%	39.78%
B.C.	FP/GP	4,633	7.80%	1,631	7.66%	35.20%
	Specialists	3,720	6.26%	1,308	6.14%	35.16%
Territories ³	FP/GP	104	0.18%	45	0.21%	43.27%
	Specialists	21	0.04%	13	0.06%	61.90%
Canada	FP/GP	30,903	52.03%	11,041	51.85%	35.73%
	Specialists	28,496	47.97%	10,255	48.15%	35.99%
Total		59,399	100.00%	21,296	100.00%	35.85%

Notes

1. CMA Masterfile physicians who were deemed eligible to complete the 2004 National Physician Survey.
2. 2004 National Physician Survey respondents.
3. Includes physicians in Nunavut, the Northwest Territories and Yukon.

Sources: CMA Masterfile and 2004 National Physician Survey Database.

Comparison of Demographic Distributions in the 2004 NPS Database and the Physician Population

Figure 1 plots the percent distribution data presented in Table 1 for the eligible physician population and NPS respondents. Each data point in Figure 1 represents a physician subgroup defined by a province, territory and FP/GP or specialist physician group. The correlation between the distribution in the physician population and the NPS Database is high and positive ($r = 0.98$). This indicates that, in general, subgroups that comprise a large proportion of the eligible population also comprise a large proportion of the NPS Database.

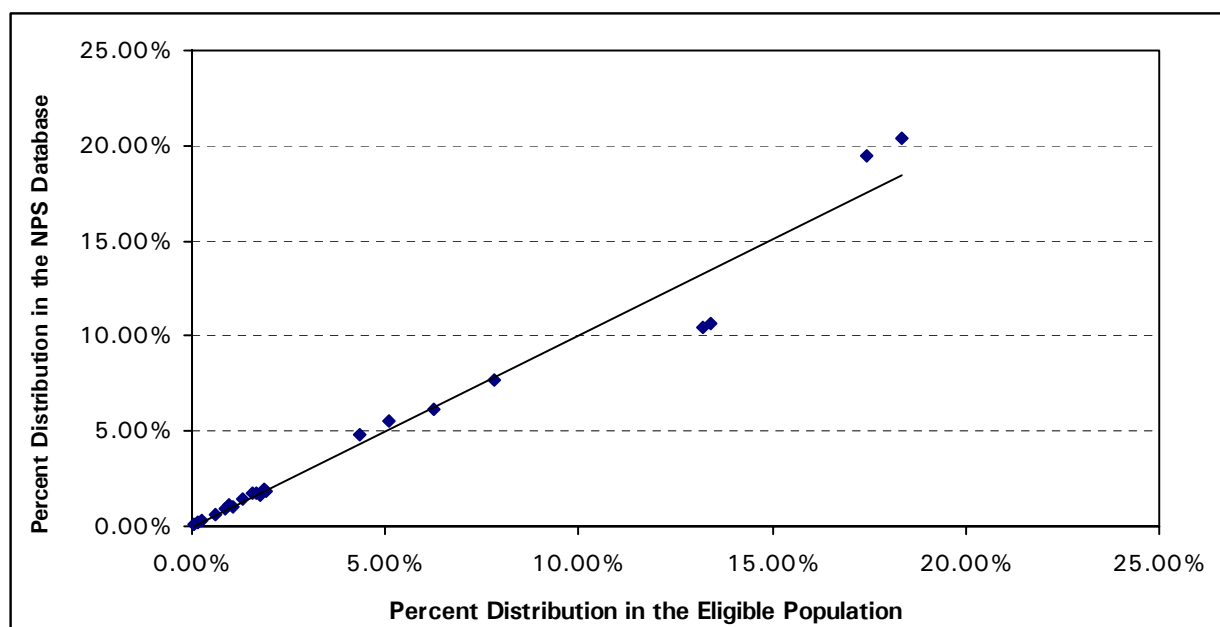


Figure 1. Percent Distribution of Physicians in the Eligible Population and in the 2004 National Physician Survey Database

Note: Each data point plots the percent values for a defined group of family or specialist physicians in a particular province or territory.

Sources: CMA Masterfile and 2004 National Physician Survey Database.

An examination of the representativeness of the NPS database can be extended to physician age and sex distributions. Unlike the province, territory and medical specialty data shown in Table 1, age and sex information—present in the CMA Masterfile—was not copied directly into the NPS Database. Nevertheless, it is still possible to compare the two sources using age–sex data, as both contain this information.

Age and sex comparisons are presented in Figures 2 and 3. The NPS Database contains proportionately more females than the physician population, 32.33% versus 30.97% respectively (see Figure 2).

Analysis in Brief

Taking health information further

All physicians on the CMA Masterfile are coded as either male or female, whereas 4.49% of NPS respondents did not indicate if they were male or female. Physicians above age 54 comprise a larger proportion of the NPS Database compared to the population, while physicians below age 45 are proportionately less represented (see Figure 3). The discrepancy between NPS Database and population age group proportions is greatest for physicians aged between 35 and 44, with percentages equal to 24.86% and 28.35% for the two data sources respectively.

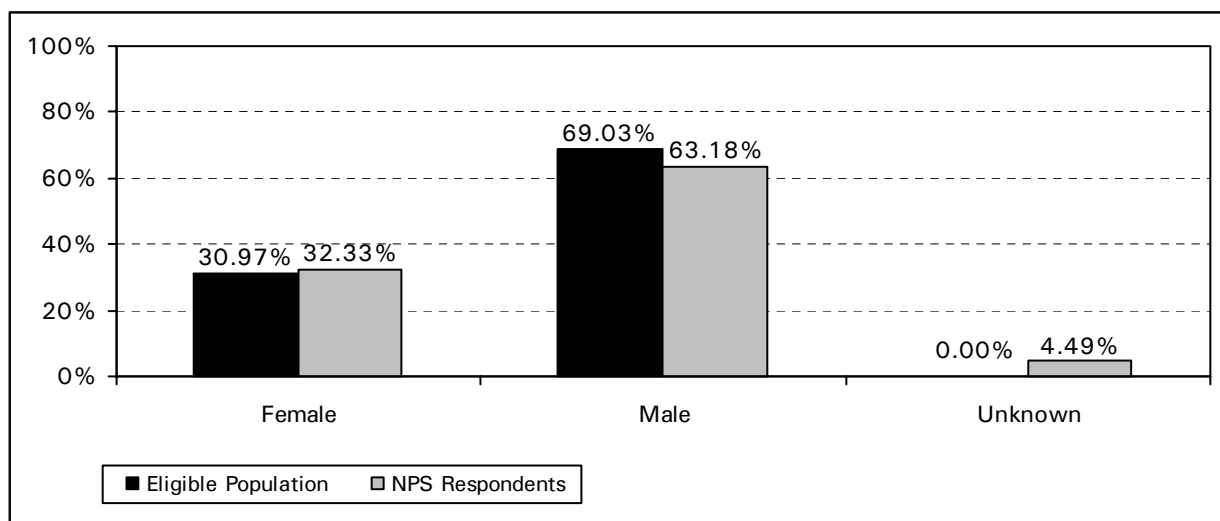


Figure 2. Percent Distribution of Physicians in the Eligible Population and in the 2004 National Physician Survey Database, by Sex

Sources: CMA Masterfile and 2004 National Physician Survey Database.

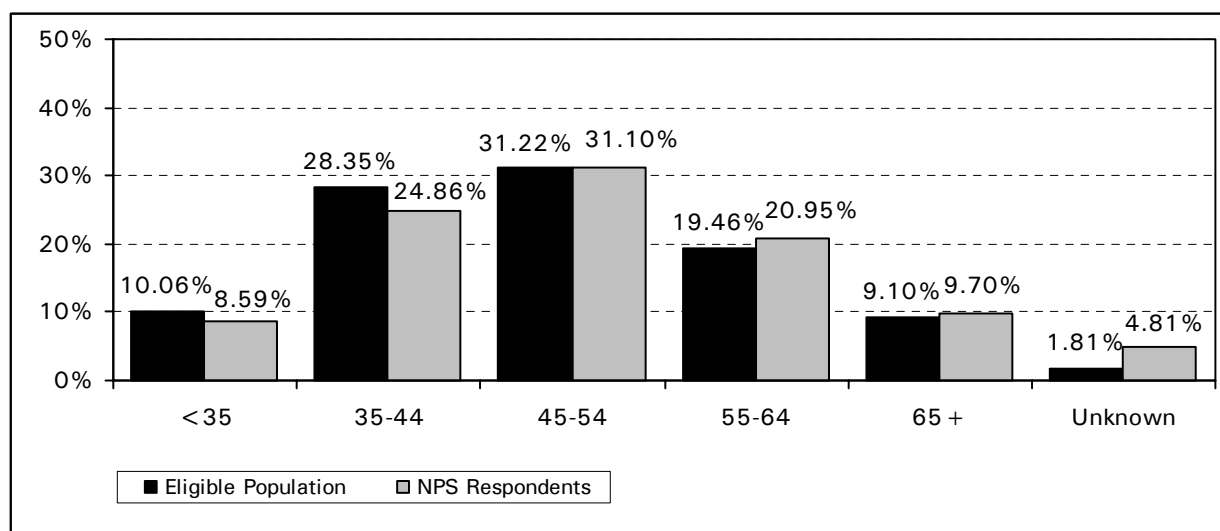


Figure 3. Percent Distribution of Physicians in the Eligible Population and in the 2004 National Physician Survey Database, by Age Groups

Sources: CMA Masterfile and 2004 National Physician Survey Database.

Analysis in Brief

Taking health information further

To illustrate the overall comparability of the 2004 NPS Database to the physician population, Figure 4 combines data for all of the demographic characteristics reported above. Each data point in Figure 4 plots information for a physician subgroup defined by a province or territory, FP/GP or specialist physician category and an age–sex group. The data that is plotted is the square root of the count of physicians in the defined group, for both the NPS Database and the physician population. The square root of the physician count is used in order to plot results for groups of very disparate size. As with the results shown in Figure 1, Figure 4 illustrates the strong correlation ($r=0.98$) between subgroup distributions in the NPS Database and the physician population based on four demographic characteristics. A similarly high correlation ($r=0.94$) exists between the demographic distributions of NPS respondents and non-respondents (not shown).

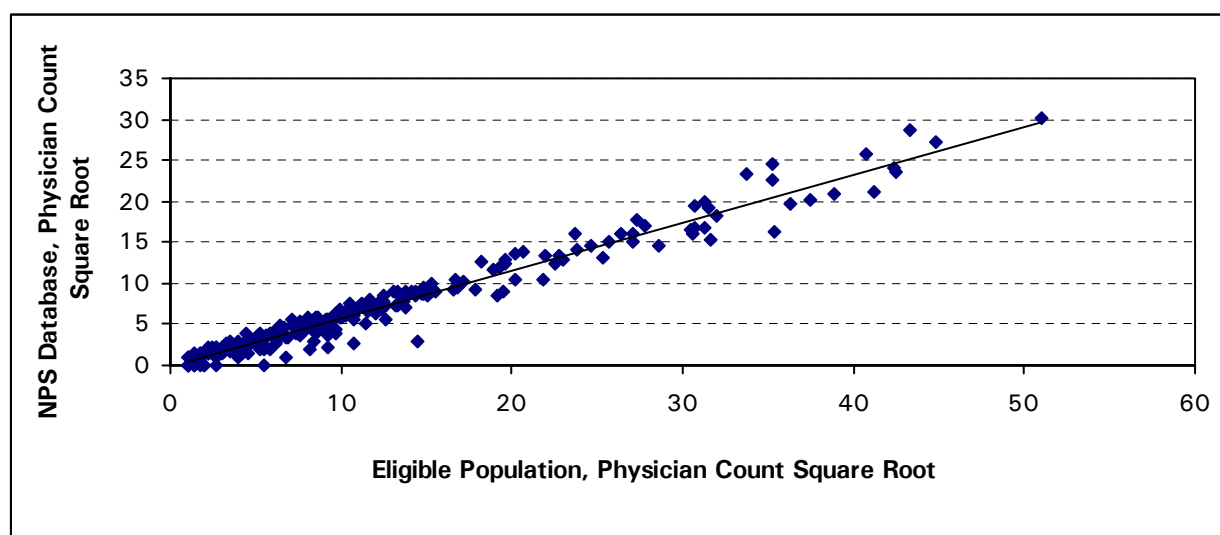


Figure 4. Square Root of Physician Counts Within the Eligible Population and in the 2004 National Physician Survey Database. Groups Defined by Province or Territory, Broad Medical Specialty, Sex and Age Group Categories

Note: Each data point plots the square root of the physician count for a group of family or specialist physicians in a particular provincial/territorial, sex and age group.

Sources: CMA Masterfile and 2004 National Physician Survey Database.

Summary

This brief analytical bulletin describes two key features of the 2004 National Physician Survey—its response rates and the comparability of survey respondents to the general physician population. The overall response rate for the 2004 NPS was 35.85%, with physicians in Québec registering the lowest response rates. The 2004 NPS used a comprehensive data collection strategy, including advance messaging through the media and direct mailings to physicians plus three complete survey package mail-outs coupled with reminder messages. Concerns have been raised around declining response rates in physician surveys¹ and a variety of studies have looked at how researchers might address this issue^{2,3}.

The demographic composition of physicians who responded to the 2004 NPS is very similar to that of the total physician population. There is a high overall correlation between respondent and population demographic characteristics ($r=0.98$ for province, territory, age, sex and broad medical specialty groups). Additional analyses showed that NPS respondents were also similar to non-respondents in terms of the same demographic characteristics ($r=0.94$).

As noted in the opening passages of this report, survey-based data plays an important role in filling information gaps and in addressing emerging policy and research questions. The comparative results presented in this report are meant to aid health care researchers, planners and decision-makers in getting the most out of National Physician Survey data.

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Acknowledgement:

The study described in this bulletin was conducted utilizing original data collected for the College of Family Physicians of Canada, the Canadian Medical Association, and the Royal College of Physicians and Surgeons of Canada's National Physician Survey Database. The study was also supported by the Canadian Institute for Health Information and Health Canada. The study and all of the data contained therein and the copyright protected works of the College of Family Physicians of Canada, the Canadian Medical Association, and the Royal College of Physicians and Surgeons of Canada cannot be copied or reproduced in whole or in part without permission of the College of Family Physicians of Canada, the Canadian Medical Association, and the Royal College of Physicians and Surgeons of Canada.