

# 2019 INTERNATIONAL HEALTH POLICY SURVEY OF PRIMARY CARE DOCTORS METHODOLOGY REPORT

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## OVERVIEW

The Commonwealth Fund (Fund) is a private foundation dedicated to promoting a health care system that achieves better access, improved quality, and greater efficiency, with a focus on society's most vulnerable groups. As part of its mission, the Fund has been conducting the International Health Policy (IHP) Survey in 11 countries for more than a decade. In a triennial cycle, the IHP survey targets different populations, including physicians, older adults, and the general adult population.

The report is organized into five sections. The project Overview is provided in the first section. Survey Procedures for each country are outlined in the second section. The third section provides information on Sample Design and the Response Rate for each country. The final sections describe Weighting procedures, and project Deliverables/Updates.

The Commonwealth Fund contracted with SSRS to manage data collection and data integration for the 2019 IHP survey conducted among primary care physicians (PCPs) in Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom (UK), and the United States (US). SSRS fielded the survey in the US and Canada. SSRS's fielding partner, The Minter Group (Minter), fielded the survey in Australia and New Zealand. SSRS's fielding partner, Adkins Research Group (Adkins), fielded the survey in the UK. Kantar Public (Kantar) fielded the study on behalf of Caisse Nationale de l'Assurance Maladie des Travailleurs Salaries (CNAMTS), Haute Autorite de Sante (HAS), Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques (DREES) of the Solidarities and the French Ministry of Health in France. INFO GmbH Markt- und Meinungsforschung (GmbH) fielded the study on behalf of Institut für Qualitätssicherung und Transparenz im Gesundheitswesen (IQTIG) in Germany. The Dutch Ministry of Health fielded the survey in the Netherlands. The Norwegian Institute of Public Health (NIPH) funded and fielded the survey in Norway. The Swedish Agency for Health and Care Services Analysis (Vardanalys) contracted with Statistics Sweden (SCB) to manage the data collection process and field the instrument in Sweden. The Switzerland Federal Office of Public Health (FOPH) contracted with M.I.S. Trend S.A. to field the survey in Switzerland.

The survey utilized random samples of primary care physicians in eleven countries. Since primary care physicians in many countries treat adults and children (e.g., Australia, New Zealand, the Netherlands, and the UK), a proportional number of pediatricians were also included in countries where primary care physicians exclusively treat adults (US, Germany, and Switzerland) to make the samples across the countries equivalent.

The 2019 study was designed to explore and collect reliable health-related data for the following topics:

- Access to care
- Care Management for Patients with Chronic Conditions and Other Special Needs
- Care Coordination with Other Providers
- Care Coordination with Home Care and Social Service Providers
- Office Systems and Use of Information Technology
- Provider Experiences with Their Practice
- Perspectives on the Health Care System
- Practice Profile and Demographic Data

In the summer and fall of 2018, the IHP 2019 questionnaire was developed and revised by The Commonwealth Fund and its international partners. SSRS reviewed the final questionnaire and provided feedback about question wording, order, clarity, logic/programming, and other issues related to questionnaire quality and design across modes. The survey consisted of paper, online and computer-assisted telephone interviews of random samples of primary care doctors in eleven countries, using a common questionnaire that was translated and adjusted for country-specific wording as needed. As in past iterations of the IHP Survey of Primary Care Doctors, different modes (and for several countries multiple modes) were used for data collection. These modes are tailored to best practices for reaching primary care doctors in each country and are generally consistent with modes used in 2015<sup>1</sup> and past iterations of the IHP Survey of Primary Care Doctors.<sup>2</sup> Table 1 outlines the total number of completed interviews and modes used for each country for recruitment and completion. Fieldwork occurred between January 14 and June 14, 2019. The field times varied by country and are specified in Table 1.<sup>3</sup>

**TABLE 1: Modes of Recruitment/Completion Used, Completed Interviews, and Fieldwork Dates for each Country**

	Modes of Recruitment/Completion	Final N	Field Start Date	Field End Date
Australia <sup>4</sup>	Phone/email/fax recruit to online	500	1/21/2019	6/2/2019
Canada	Postal mail recruit to online/mail	2569	1/29/2019	6/3/2019
France	Email/text message recruit to online/phone (CATI)	1287	3/5/2019	4/29/2019
Germany	Postal mail/email recruit to online/mail	809	3/28/2019	5/20/2019
Netherlands	Postal mail	788	2/25/2019	5/13/2019
New Zealand	Phone/email/fax recruit to online	503	1/21/2019	5/12/2019
Norway	Postal mail	661	4/5/2019	6/14/2019
Sweden	Postal mail recruit to online/mail	2411	1/14/2019	5/7/2019
Switzerland	Postal mail/phone recruit to online/phone (CATI)	1095	1/30/2019	4/3/2019
UK	Phone recruit to phone (CATI)/online	1001	1/21/2019	5/24/2019
US	Postal mail recruit to online/mail	1576	2/5/2019	6/3/2019

<sup>1</sup> France changed from an RDD methodology to a panel-based web design.

<sup>2</sup> The web mode was added for several countries (i.e., France and Germany). Web is comparable to mail because both are self-administered; moreover, adding web reduces non-response by age.

<sup>3</sup> Field time ranged from eight to 16 weeks.

<sup>4</sup> Oversamples in New South Wales (NSW) and Victoria required extra fieldwork time. Victoria's oversample completed as of August 23, 2019 and NSW data collection is ongoing.

A few countries included an additional set of questions specific to their country. SSRS worked with each country partner in designing questions that would better suit their data collection requirements by providing feedback on structure, wording, length and overall design.

SSRS created a master Web/CATI questionnaire for online and telephone administration and a preferred paper survey format.<sup>5</sup> The Web/CATI questionnaire included programmer and interviewer instructions that were to be used in the various modes. The Web/CATI questionnaire contained all country-specific introductions, questions, and instructions for countries that offered the survey in web and telephone formats. A preferred paper template was developed based on best practices in paper survey design aimed at promoting respondent completion by making the survey more user friendly, easy to understand, and consistent in format. SSRS provided an English language paper questionnaire in the preferred format to all countries using a paper survey mode.<sup>6</sup> Each of the countries adapted the paper survey format, as needed, based on their survey administration requirements.<sup>7</sup>

Prior to the field period, SSRS developed a set of instructions for processing paper surveys. While the project team anticipated that most providers would follow instructions and complete the survey correctly, SSRS's standard of practice is to provide guidelines for editing and coding completed paper surveys. These procedures were finalized in consultation with the Fund and provided to all partners/vendors that were processing paper surveys. These guidelines are provided in the Appendix files.<sup>8</sup> Examples of information communicated in this memo include instructions regarding: (1) processing of data when skip patterns were not followed; (2) write in responses of "Don't know," "Not sure," and "Refused;" (3) processing of multiple response for single-response questions.

SSRS provided reporting data and disposition reporting templates to each of its survey-fielding partners. On a weekly basis, SSRS reviewed the status of data collection and provided feedback regarding the distribution of completes, field progress, and dispositions. Based on this feedback, SSRS was able to monitor sample productivity, track quotas and deadlines, and provide guidance on how to best handle other fielding aspects.

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<sup>5</sup> For most countries where data were collected online, the "www.internationaldoctorsurvey" domain name was used. The top-level domains were differentiated as follows: Canada used (.ca), NZ: (.org.nz), the UK: (.uk), and the US: (.org or .com). For Australia the www.internationaldoctorsurvey-au.org domain was selected. Sweden and Switzerland elected to use www.insamling.scb.se and https://survey.mis-trend.ch/IHP19 web domains, respectively.

<sup>6</sup> In 2015, translated paper versions were sent to country partners. Due to the change in the translation process in 2019 as well as country partners not using the translated paper surveys provided in 2015, only English-paper instruments were sent to country partners to use as a template.

<sup>7</sup> SCB (Sweden) and GmbH (Germany) developed a paper instrument that was similar to the format used for the US and Canada (i.e., with slightly modified skip patterns and section separation formatting). Moderate changes (i.e., changed scale layouts, separation between questions, use of bolding, etc.) were made for the other countries' paper instruments. NIPH (Norway) made the most changes since it was necessary to condense the survey into six pages (e.g., scale layouts were modified, separations between questions were trimmed, text size was reduced, etc.). Germany's paper instrument was nine pages, the Netherlands paper instrument was eight pages, and Sweden's paper instruments was eleven pages.

<sup>8</sup> Letters and the other mailings are provided to all partners in an Appendix zip file along with this report.

Throughout the field period, SSRS provided the Fund with bi-weekly updates of key information tracking overall progress in each country. These reports, designed to provide snapshot information of key variables of interest, included tables for completes per mode of interview by gender, age, region, and language of interview (where applicable). Along with the bi-weekly data reports, SSRS reported on any field-related concerns via conference calls.

SSRS developed a standardized data map to be utilized by all the international partners when structuring their data in ASCII format. The back-end programmer created a program consisting of instructions derived from the skip patterns designated on the data map and editing and coding memos that were shared with each survey-fielding partner. The program confirmed that data were consistent with the definitions of the preset codes and ranges and matched the appropriate bases of all questions. By the end of field, once the integrated data were compiled, an independent checking of all variables was carried out to ensure that all variables were accurately constructed, had the correct number of cases, and were coded according to specifications provided. Frequencies were also run against clean data and reviewed as a further verification of valid codes and skip patterns.

For the online program, SSRS and its survey partners created a variable that calculated a respondent's completion rate. The calculation was based on the following formula:

$$\frac{\text{Total Questions Asked} - \text{Total Questions Skipped}}{\text{Total Questions Asked}}$$

The same calculation was done for all mail or online-based completed interviews at the end of field. The SSRS team reviewed cases that had a completion rate below 80%. Based on this review, five additional interviews were removed (Canada (n=2) and the U.S. (n=3)). In addition, two completed interviews in Canada were removed due to sampling error as the sampled individuals were not active GPs. One completed interview in Australia was removed due to a programmatic error with the survey – the program failed to display a number of questions from the survey to the respondent.

Data from each country were weighted to ensure the final outcome was representative of the primary care physician population. The weighting procedure accounted for the sample design and probability of selection, as needed, as well as differential non-response across known population parameters (e.g., age, gender, and region). As much as possible, the weighting procedure replicated the 2015 weighting protocol.<sup>9</sup>

Efforts were made to release sample in batches/waves to allow for oversampling, as needed, of specific geographies, and 'work' the sample throughout the field period in order to ensure that the final sample of completed interviews would be representative of both those who respond more quickly and those who

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<sup>9</sup> Notably, the Netherlands weighting included region in 2019 and did not in 2015. Additionally, the methodology used in France changed. France PCPs were included in an online panel that will complete up to five surveys over a few years. As a result of the methodology change and proprietary panel information, the French data was weighted by the France methods team.

require additional contacts (via phone, email, or mailings) to complete the survey. The response rates for this study were calculated using AAPOR's RR3 are provided below in Table 2.

**TABLE 2: Response Rates by Country**

	Response Rate
Australia	14.5%
Canada	39.3%
France	20.0%
Germany	14.7%
Netherlands	48.7%
New Zealand	16.2%
Norway	33.8%
Sweden	42.2%
Switzerland	42.8%
UK	26.8% <sup>10</sup>
US	21.2%

## SURVEY PROCEDURES

### Australia and New Zealand

SSRS's fielding partner, The Minter Group (Minter), fielded the survey in Australia and New Zealand. The survey was in field from January 21 – June 2, 2019 for Australia, and from January 21 – May 12, 2019 for New Zealand. Prior to fielding, the Agency for Clinical Innovation (ACI) contracted with SSRS to complete an oversample of interviews in New South Wales, with the goal of completing at least 400 interviews in that state. After fieldwork commenced, ACI requested an additional N=750 oversample completes (N=1,000 total) to have a read of ~N=100 by each of the 10 Primary Health Networks (PHN) in NSW. The Department of Health and Human Services (DHS) in Victoria also contracted with SSRS to complete an additional N=710 interviews in Victoria.

Prior to the field period, SSRS programmed the study into SSRS's Web Interviewing system for online data collection in Australia and New Zealand. For consistency purposes across countries, the web domain used in Australia was [www.internationaldoctorsurvey-au.org](http://www.internationaldoctorsurvey-au.org) and [www.internationaldoctorsurvey.org.nz](http://www.internationaldoctorsurvey.org.nz) was used in New Zealand. Extensive checking of the programs was conducted to assure that skip patterns followed the design of the questionnaire. The computer-assisted instruments were tested to ensure that all of the country-specific language inserts were working properly. The SSRS team paid close attention to mobile optimization, as the use of mobile devices to complete online surveys continues to rise.

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<sup>10</sup> During fieldwork, an interviewer error in the UK resulted in the CATI link being sent to Web (self-administered) respondents. After reviewing the data, N=403 cases were removed from the data due to this error. If the correct link had been sent, the response rate would have been 37.6%.



Pretest interviews were conducted in Australia and New Zealand in December 2018. Overall, the instrument worked quite well, and respondents seemed to be engaged in the interview. Minter conducted five cognitive pretest interviews in Australia and five cognitive pretest interviews in New Zealand. Fieldwork managers confirmed that all interviewed respondents were comfortable talking about their health experiences as a healthcare provider.

During the field period, physicians were contacted in a two-step process: The first step involved screening and inviting respondents (via the phone, email or fax) to participate in the study. Once doctors agreed to participate, the second step consisted of sharing a confirmation letter with a link to the online survey via email<sup>11</sup>. The screener was used to identify whether respondents were interested in participating or not, and to screen-out primary care doctors not involved in direct patient care. Up to four reminders were attempted with physicians who had not responded. To encourage participation an endorsement letter<sup>12</sup> was shared with respondents and PCPs were offered an incentive of AUS\$50.

Prior to the beginning of fieldwork, random data were generated for Australia to confirm that skip patterns were working correctly. Data were checked throughout the field period to confirm that skip patterns were correctly followed.

## Canada

SSRS fielded the survey in Canada. Similar to IHP 2015, oversamples were collected at a national level as well as in Ontario and Quebec. For the 2019 study, censuses were conducted in Prince Edward Island (PEI) as well as the three Canadian territories: Yukon, Nunavut, and the Northwest Territories. The censuses in the territories included both itinerant (practice only in one territory) and non-itinerant (practice in more than one territory) PCPs.

The survey was in field from January 29 – June 3, 2019. All respondents were recruited via postal mail and invited to participate in a paper-copy or online version of the survey. The territory census used a slightly modified questionnaire for the itinerant PCPs that instructed respondents to focus on their experience practicing in the territories and not the provinces. Prior to the field period, SSRS programmed the study into SSRS's Computer-assisted online interviewing system (webCATI) for data collection in Canada. For consistency purposes across countries, the web domain used in Canada was [www.internationaldoctorsurvey.ca](http://www.internationaldoctorsurvey.ca). Additionally, a process was implemented where Canadian respondents who by mistake typed the ".com" or ".org" top-level domains (which were the US top-level domains) were automatically re-directed to the ".ca" version. Extensive checking of the programs was conducted to ensure that skip patterns followed the design of the questionnaire. The computer-assisted instruments were tested to ensure that all of the language inserts were working properly. The SSRS team paid close attention to mobile optimization, as the use of mobile devices to complete online surveys continues to

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<sup>11</sup> For the Australian oversample recruitment, the process was changed so that a unique URL was sent to respondents in the invitation email or fax and the screening question was added to the program.

<sup>12</sup> The Royal Australian College of General Practitioners provided endorsement for Australia, and New Zealand's Ministry of Health did so for New Zealand. Copies of these letters are included in the Appendix.

rise. SSRS also designed a paper survey to be used in Canada following best practices to maximize usability and respondent completion.

Once the 2019 instrument was finalized in December 2018, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2019 and 2015 English verbiage, the 2019 and 2015 French Canadian translations, and instructions for the translator to ensure a previous year's translation remained accurate, modify a previous instrument's translation or translate from scratch. New and modified questions were translated into Canadian French as needed. The SSRS team then sent translations to the Quebec partners to ensure that the translations were accurate and user friendly. Modifications were made based on country partner feedback.

Six pretest interviews were completed in Canada between November 26 and December 7, 2018. Two were conducted using the web program in English, three in English using the paper survey and one Canadian French paper survey instrument. Every effort was made to complete interviews among as representative of a population as possible. Respondents were asked to provide feedback on the instrument/program, invitation letter, reminder letter, and publication list. Upon completion of the pretest interviews, SSRS provided a memo of the pretest findings to the Fund and also provided feedback to the Canadian partners.

Prior to the beginning of fieldwork, random data were generated for Canada to confirm that skip patterns were working correctly. Data were checked throughout the field period to confirm that skip patterns were correctly followed.

To encourage participation, primary care doctors were mailed an endorsement letter tailored for each province<sup>13</sup>, an incentive check of \$25 or \$100<sup>14</sup> (included with the first paper questionnaire), and a list of publications based on previous International Health Policy surveys (See Table 3 below). Additionally, to maximize response rates and based on pretest feedback, similar to IHP 2015, SSRS implemented a strategy that allowed respondents in Canada to provide their email address so that highlights on the survey results can be shared when they are available. Respondents across all provinces had the option to complete the survey in English or Canadian French online.

### **Non-Census Samples**

While the non-census sample was initially planned to be released in two waves, similar to IHP 2015, due to a better-than anticipated yield in Canada, no additional sample release was needed. Instead, an additional mailing was sent to target completes still needed in specific areas. Doctors in Canada received an advance invitation including the web link and up to seven additional contacts/reminders during the field (i.e., three paper questionnaires, one reminder letter, and three email reminders). Detailed

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<sup>13</sup> The Canadian Institute for Health Information (CIHI) collaborated with Canada Health Infoway (Infoway), Health Quality Ontario and Ministère de la Santé et des Services sociaux (MSSS) and provided endorsement in letters for all provinces. The endorsement letters for the Ontario and Quebec provinces were slightly modified to highlight the key province partnerships.

<sup>14</sup> Non-itinerant PCPs in the Canadian territories were sent \$100.

specifications for each contact/wave are outlined below. Doctors in Quebec and New Brunswick were sent all postal mailings in English and Canadian French; emails were sent in their preferred language. Email reminders were sent to the 59% of the sample for which email addresses could be appended by the sample provider (Professional Targeted Marketing (PTM)). All mailings for the non-census sample were printed in black and white.

**TABLE 3: Canada Contact Schedule for the Non-Census Sample**

Contact	Date	Type of Contact	Documents Included
1	1/29/19	Postal	Cover letter with web link and passcode List of CMWF's publications based on previous IHP studies Endorsement letter <sup>15</sup>
2	2/4/19	Postal	Cover letter with web link and passcode \$25 check Postage-paid reply envelope 8-page paper questionnaire
3	2/12/19	Email	Email with passcode-embedded web link
4	2/19/19	Postal	Cover letter with web link and passcode Postage-paid reply envelope 8-page paper questionnaire
5	2/26/19	Postal	Reminder Letter
6	3/5/19	Email	Email with passcode-embedded web link
7 <sup>16</sup>	4/5/19	Postal	Cover letter with web link and passcode Postage-paid reply envelope 8-page paper questionnaire
8	5/7/19	Email	Email with passcode-embedded web link

### **PEI and Territory Census Samples**

The censuses, in PEI and the territories, were sent out in a single-wave release. PEI sample was pulled from the sample provider (PTM) and only included non-itinerant PCPs. A list of census sample for the territories was provided by CIHI to ensure both itinerant and non-itinerant PCPs were included in the sample. This territory list was then compared against the PTM sample list and an itinerant and non-itinerant marker was created. Non-itinerant territory PCPs received a higher incentive of \$100 to participate. All other census sample (i.e., PEI and itinerant territory PCPs) received a \$25 incentive. Census doctors received an advance invitation including the web link and up to ten additional contacts/reminders during the field (i.e., four paper questionnaires, two phone reminders, and four email reminders). Detailed specifications for each contact/wave are outlined below. Email reminders were sent to the 51% of the sample for which email addresses could be appended by the sample provider (PTM). All mailings for the census sample were printed in color.

<sup>15</sup> Quebec sample received a Quebec-specific endorsement letter, Ontario received an Ontario-specific endorsement letter, all other provinces received a Canadian wide endorsement letter. All endorsement letters were sent in English and French Canadian.

<sup>16</sup> This mailing was only sent to Quebec sample as it was the only province where additional completes were needed.

**TABLE 4: Canada Contact Schedule for the Censuses**

Contact	Date	Type of Contact	Documents Included
1	2/27/19	Postal	Cover letter with web link and passcode List of CMWF's publications based on previous IHP studies Endorsement letter
2	3/6/19	Postal	Cover letter with web link and passcode \$25/\$100 check Postage-paid reply envelope 8-page paper questionnaire
3	3/7/19	Email	Email with passcode-embedded web link
4	3/13/19	Phone	First telephone reminder
5	3/20/19	Postal	Cover letter with web link Postage-paid reply envelope 8-page paper questionnaire
6	4/3/19- 4/5/19	Phone	Second telephone reminder
7	4/4/19	Email	Email with passcode-embedded web link
8	4/18/19	Postal	Reminder letter with web link Postage-paid reply envelope 8-page paper questionnaire
9	4/25/19	Email	Email with passcode-embedded web link
10	5/16/19	Email	Email with passcode-embedded web link
11	6/11/19- 6/12/19	Postal	Cover letter with web link and passcode Postage-paid reply envelope 8-page paper questionnaire Endorsement letter

SSRS provided CIHI with a detailed list of completes and non-responders for the censuses while in field for the sample CIHI had provided to SSRS to map.<sup>17</sup> CIHI then used the list of responders and non-responders to conduct on-the-ground efforts to boost response. Table 5, below, shows the completes by mode by province.

**TABLE 5: Canada Completes by Mode**

	Ontario	Quebec	PEI	Territories	Rest of Canada	Total Canada
Web	305	195	16	30	568	1114
Paper	307	274	28	27	819	1455
Total	612	469	44	57	1387	2569

SSRS maintained a master file of contacts initiated by Canadian respondents throughout the field period. This file included information about the reason behind the communication established with the

<sup>17</sup> While in field, CIHI sent a list of PEI sample to SSRS to enable SSRS to provide a list of non-responders.

respondent and the decisions made to proactively address the issue raised. In addition, hand written comments in paper surveys were saved into an excel file.

Given the multi-modal nature of this survey, there were some duplicate cases (i.e., respondents who complete a paper and web survey or two or more paper surveys) that needed to be addressed.<sup>18</sup> For duplicate cases, the following rules were followed to select the cases that were kept in the final data file.

- Cases with the highest completion response rate were kept regardless of the survey mode.
- If duplicate cases for a particular respondent had identical questionnaire completion rates and the mode of completion cases was different (i.e., mail and online), the online case was kept.
- The case with the earliest date of completion was selected for duplicate cases with identical completion response rates and mode of completion (e.g., two mail-based interviews from a single respondent).

## France

Caisse Nationale de l'Assurance Maladie des Travailleurs Salaries (CNAMTS), Haute Autorite de Sante (HAS), Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques (DREES) of the Solidarities and the French Ministry of Health contracted with Kantar Public (Kantar) to manage data collection in France. The survey was in field from March 5 – April 29, 2019.

Once the instrument was finalized, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2015 and 2019 English verbiage, the 2015 French translations, and instructions for the translator to ensure a previous year's translation remained accurate, modify a previous instrument's translation or translate from scratch. New and modified questions were translated into French as needed. The SSRS team then reviewed the translations to ensure that the translations were accurate and user friendly. Modifications were made based on country partner feedback.

Prior to the field period, the study was programmed by Kantar for web and telephone data collection in France. The SSRS team assisted in checking of the program to assure that skip patterns followed the design of the questionnaire. The SSRS team paid close attention to mobile optimization as the use of mobile devices to complete online surveys continues to rise.

Physicians were recruited via an online panel of PCPs that was specifically created for physician research in 2018. The panel population, while generally representative of GPs in France, was created excluding GPs who are (1) exclusively salaried, (2) exclusively practice complementary medicine, and (3) have less than 200 patients. A simple stratified sample was drawn in order to take into account the oversampling in the two partner regions (Southeastern France (Provence-Alpes-Côte d'Azur or PACA) and Western France

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<sup>18</sup> Two additional completed interviews were removed from the Canadian data based on comments made by physicians who were not providing primary care. For example, one respondent mentioned working in the emergency room. These comments rendered by respondents were assessed in conjunction with the questionnaire completion rate in a case-by-case basis prior to deciding whether to remove a given interview or not.

(Pays de la Loire)). The IHP 2019 survey was the third survey panelists were asked to complete using this panel.

Respondents were contacted via email and sent a personalized link to complete the survey. Up to four email and text-message reminders were sent to non-responders. After the five contacts, non-responders were then contacted via telephone to complete the survey.

Table 6 below shows the completes by mode.

**TABLE 6: France Completes by Mode**

	Total France
Web	909
Phone	378
Total	1287

## Germany

Institut für Qualitätssicherung und Transparenz im Gesundheitswesen (IQTIG) contracted with INFO GmbH Markt- und Meinungsforschung (GmbH) to conduct the survey in Germany. The survey was in field from March 28 – May 20, 2019.

Once the 2019 instrument was finalized in December 2018, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2019 and 2015 English verbiage, the 2015 German translations, and instructions for the translator to ensure a previous year's translation remained accurate, modify a previous instrument's translation or translate from scratch. GmbH and IQTIG finalized the translations. SSRS provided a formatted paper survey instrument in English for GmbH to use as a reference. GmbH adapted the formatted paper survey as needed for fielding and data processing needs for Germany. Six pretest interviews were conducted in Germany. Based on the pretest a few minor changes were made to the instrument.

Unlike IHP 2015, in 2019 physicians in Germany could complete the survey online or via a paper survey.<sup>19</sup>

Physicians were recruited via postal mail and invited to participate by either completing an online or paper-copy version of the survey. Non-responders were sent an email reminder with a link as well as a passcode to complete the survey online. Remaining non-responders were sent a second postal mailing that included a reminder letter and a second paper questionnaire. To encourage participation, PCPs were offered an incentive of €20 in the form of a shopping voucher upon completion of the survey. A second email reminder was initially planned but not needed as the final N-size was reached. Table 7 below outlines the contact schedule.

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<sup>19</sup> In 2015, only paper administration was offered.

**TABLE 7: Germany Contact Schedule**

Contact	Date	Type of Contact	Germany
1	3/28/19	Postal	Cover letter with web link and passcode 8-page paper questionnaire Postage-paid reply envelope
2	4/9/19	Email	Email with web link and passcode
3	4/12/19	Postal	Cover letter with web link and passcode 8-page paper questionnaire Postage-paid reply envelope

Table 8 below shows the completes by mode.

**TABLE 8: Germany Completes by Mode**

	Total Germany
Web	88
Paper	721
Total	809

## The Netherlands

The Netherlands conducted the fieldwork via the Dutch Ministry of Health, part of the Radboud University Medical Center. The survey was in field from February 25 – May 13, 2019.

Once the 2019 instrument was finalized in December 2018, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2019 and 2015 English verbiage, the 2015 Dutch translations, and instructions for the translator to ensure a previous year’s translation remained accurate, modify a previous instrument’s translation or translate from scratch. The Dutch Ministry of Health finalized the translations. SSRS provided formatted paper survey instrument in English for the Netherlands as a reference. The Dutch Ministry of Health adapted the formatted paper survey as needed for fielding and data processing needs for the Netherlands.

Before starting the field, the Dutch Ministry of Health pretested the Dutch version of the instrument with five primary care doctors using a cognitive validation format. The interviews were conducted late January to early February 2019. Based on the pretest, some contextual translation edits needed to be made as well as some removals from the Q4 list (i.e., other types of providers) needed to be modified in the Netherlands.

During fieldwork it was discovered that some questionnaire changes were missed during the translation process. This issue could not be addressed while in field due to the paper data collection and contacts having been sent out prior to uncovering this issue.

Primary care doctors were recruited via postal mail and invited to participate in a paper-copy version of the survey. Non-responders were sent up to three reminder letters, along with the paper questionnaire. No financial incentive was offered in the Netherlands.

**TABLE 9: The Netherlands Contact Schedule**

Contact	Wave 1	Wave 2	Netherlands
1	2/25/19	3/14/19	Cover letter 8-page paper questionnaire
2	3/11/19	3/28/19	Reminder letter 8-page paper questionnaire
3	3/26/19	4/10/19	Reminder letter 8-page paper questionnaire

Data entry was completed using the Dutch Ministry of Health’s software, Teleform, which automatically ‘reads’ completed surveys. Ambiguous data were reviewed and verified by a research-assistant.

## Norway

The Norwegian Institute of Public Health (NIPH) conducted the fieldwork in Norway. The survey was in field from April 5 – June 14, 2019.

Once the 2019 instrument was finalized in December 2018, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2019 and 2015 English verbiage, the 2015 Norwegian translations, and instructions for the translator to ensure a previous year’s translation remained accurate, modify a previous instrument’s translation or translate from scratch. NIPH finalized the translations. SSRS provided a translated, formatted paper survey instrument for Norway. NIPH adapted the formatted paper survey as needed for fielding and data processing needs for Norway.<sup>20</sup> Pretest interviews were not conducted in Norway.

Primary care doctors were recruited via postal mail and invited to complete a paper-copy version of the survey. Non-responders were sent up to three reminder letters, along with the paper questionnaire. The postal mailing was mailed on April 5, 2019. No financial incentive was offered in Norway.

## Sweden

Sweden contracted with Statistics Sweden (SCB) to manage the data collection process and field the instrument in Sweden. The survey was in field from January 14 – May 7, 2019.

Once the 2019 instrument was finalized in December 2018, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2019 and 2015 English verbiage, the 2015 Swedish translations, and instructions for the translator to ensure a previous year’s translation remained accurate, modify a previous instrument’s translation or translate from scratch. SSRS provided a formatted paper survey instrument in English for

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<sup>20</sup> Due to space constraints, the Norwegian questionnaire was condensed into six pages from the original eight-page survey.



Sweden. SCB adapted the formatted paper survey as needed for fielding and data processing needs for Sweden. In addition to the translated paper survey instrument, SSRS created a master Web/CATI questionnaire to facilitate online administration in Sweden.

SCB programmed the survey for online data collection. In an effort to keep data collection consistent as possible across countries, SSRS provided SCB with the US program to review before they programmed the Swedish program. Sweden elected to use the [www.vardanalys.se/IHP](http://www.vardanalys.se/IHP) web domain. SSRS encouraged SCB to make their web program look and function as similar as possible to the US program<sup>21</sup>. Extensive checking of the program was conducted to assure that skip patterns followed the design of the questionnaire. The computer-assisted instruments were tested to ensure that all of the language inserts were working properly. Members of the SSRS team also tested Swedish version of the instrument. In general, consistent with their country-specific paper instrument, SCB designed their web program in keeping with best practices for online/multi-mode surveys; the final program was similar but not identical to the US and Canadian web instruments. Pretest interviews were not conducted in Sweden.

PCPs were recruited via postal mail and invited to participate in a paper-copy or online version of the survey. Doctors in Sweden received a letter including the web link and up to four additional contacts/reminders during the field (i.e., two reminder letters along with paper questionnaires, and two reminder letters without a paper questionnaire). The first contact to PCPs in Sweden were mailed on January 14, 2019. No financial incentive was offered in Sweden.

**TABLE 10: Sweden Completes by Mode**

	Total Germany
Web	1456
Paper	955
Total	2411

Data collection for web and paper questionnaires was performed using separate systems. Paper questionnaires were registered upon return, scanned and verified. If more than one paper questionnaire had been submitted by the same respondent, the one with the highest number of answered questions was saved in the system. Web questionnaires were merged with data from paper questionnaires once per day. If respondents completed both on modes, the survey with the highest number of answered questions was prioritized.

## Switzerland

Switzerland contracted with M.I.S. Trend S.A. to field the survey in Switzerland. The survey was in field from January 30 – April 3, 2019.

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<sup>21</sup> While SCB followed some of the SSRS best practices for programming, one notable difference was SCB programming more than one question on a screen.

Once the 2019 instrument was finalized in December 2018, SSRS identified questions that were (1) new (2) the same in 2015, and (3) modified from the 2015 instrument. A master excel spreadsheet was created that contained the 2019 and 2015 English verbiage, the 2015 Swiss translations (German, French and Italian), and instructions for the translator to ensure a previous year’s translation remained accurate, modify a previous instrument’s translation or translate from scratch. SSRS created a master Web/CATI questionnaire to facilitate online and telephone administration in Switzerland.

M.I.S. Trend programmed the survey for online data collection. Switzerland elected to use the <https://survey.mis-trend.ch/IHP15> web domain. In an effort to keep data collection consistent as possible across countries, SSRS provided M.I.S. Trend with the US program to review before they programmed the Swiss program. SSRS encouraged M.I.S. Trend to make their web program look and function as similar as possible to the US program. Extensive checking of the program was conducted to assure that skip patterns followed the design of the questionnaire. The computer-assisted instruments were tested to ensure that all of the language inserts were working properly. Members of the SSRS team reviewed the Swiss versions of the instrument. M.I.S. Trend designed their web program in keeping with best practices for online/multi-mode surveys; the final program was similar but not identical to the US and Canadian web instruments. Based on the program testing, M.I.S. Trend made minor adjustments to their program to make them as consistent as possible with the US and Canadian programs. Ten pretest interviews were conducted in Switzerland over the three linguistic regions. A few minor changes were made based on the pretest findings.

M.I.S. Trend S.A’s project manager carried out personal interviewer training. Two training sessions containing the following modules were conducted:

- Introduction (information on the specific survey project)
- Technical aspects
- The interview (definitions, how to code specific answers, etc.)
- Refusal avoidance strategies
- Training interviews, monitoring of fieldwork, response rates on linguistic region, sex, specialty, and urban vs. rural

Primary care doctors were recruited via postal mail and invited to participate in an online version of the survey. About one month after the invitation letter was mailed, any non-respondents were attempted to be contacted on the phone using a CATI methodology. Due to a lower response rate than anticipated, a second sample release was needed.

**TABLE 11: Switzerland Contact Schedule**

Contact	Contact Type	Wave 1	Wave 2	Switzerland
1	Postal	1/30/19	2/19/19	Cover letter with web link, passcode, and QR code
2	Postal	2/18/19	3/4/19	Reminder letter with web link, passcode, and QR code
3	Phone	3/4/19	3/18/19	CATI recalls start

In an effort to boost response rate, Switzerland incorporated a CATI stage to survey fielding procedures. Phone calls to non-respondents to the online version of the questionnaire from the first two mailings were affected. To increase the probability of completing an interview, a differential call rule was

established that required that call attempts be initiated at different times of day and different days of the week. Additionally, a maximum of 15 call attempts during fieldwork were allowed.

To maximize response rates, similar to IHP 2015, M.I.S. Trend implemented a strategy that allowed respondents in Switzerland to provide their email address so that highlights on the survey results can be shared when they are available. No financial incentive was offered.

Table 12 below shows the completes by mode.

**TABLE 12: Switzerland Completes by Mode**

	Total Switzerland
Web	1038
Phone	54
Both Web and Phone	3
Total	1095

## The United Kingdom

SSRS's fielding partner, Adkins Research Group (Adkins), fielded the survey in the UK. The survey was in field from January 21 – May 24, 2019.

Between December 10-December 12, 2018 Adkins conducted five pretest interviews in the UK. Overall, the instrument worked well and respondents seemed to be engaged in the interview. Four of the pretest respondents were re-contacted on December 20, 2018 to provide more in-depth information. Interviewers did not experience any problems with transitions or specific questions. The new questions added for 2019 were well received and did not cause issues.

Prior to the field period, SSRS programmed the study into SSRS's Web Interviewing system for the UK data collection. For consistency purposes across countries, the web domain used in the UK was [www.internationaldoctorsurvey.uk](http://www.internationaldoctorsurvey.uk). Extensive checking of the program was conducted to assure that skip patterns followed the design of the questionnaire. The computer-assisted instrument was tested to ensure that all of the language inserts were working properly. Prior to the beginning of fieldwork random data were generated for the UK to confirm that skip patterns were working correctly. Data were checked throughout the field period to confirm that skip patterns were correctly followed. Two separate programs were created, a CATI-optimized version that included interviewer instructions and voluntary responses and a web version that was optimized for self-administration (e.g., allowed respondents to skip questions).

For the UK, primary care doctors were recruited and screened via the phone and invited to participate in a phone or online version of the survey.<sup>22</sup> In addition to identifying respondents who were willing to

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<sup>22</sup> While in field, Web respondents were found to have CATI-only responses. After reviewing the data and discussing with interviewers, an interviewer error was discovered where interviewers sent the CATI link to respondents to complete the survey when the Web version of the survey should have been sent. Based on this, N=403 cases were removed as they were web completes that had completed using the CATI link.

participate, the screener served to screen out PCPs who did not spend more than 50% of their time in direct patient care, who were not general practitioners, who refused to provide a current job title or who practiced in regions that were over quota. Respondents who qualified were invited to participate in the core instrument via the phone (at a time convenient for the respondent) or online. Respondents who preferred the online option were asked to provide their email address, which was then used to share the information about how to access the web link. To encourage participation, an endorsement letter was shared with respondents<sup>23</sup> and PCPs were offered an incentive of £30 upon completion of the survey. An additional £30 was offered to a sample size of 25 respondents in order to bolster additional completes in Scotland (N=10), Wales (N=10), and Northern Ireland (N=5). An average of three call attempts were made on active sample.

The telephone version had a better completion rate, as respondents interested in completing the interview via telephone were able to complete the survey immediately, if desired. Online respondents required follow up efforts from the Adkins interviewing staff to get them complete the survey.

Table 13 below shows the completes by mode.

**TABLE 13: UK Completes by Mode**

	Total UK
Web	362
Phone	639
Total	1001

## The United States

SSRS fielded the survey in the US. In 2019, the Fund wanted to get a better read on PCPs providing care to low-income populations. An oversample of PCPs practicing in low-income areas was conducted in addition to the representative population of PCPs. The low-income oversample and main sample were conducted at the same time and followed the same release schedule. The low-income sample was defined as PCPs whose primary office was located in a zip code with a lower average income.<sup>24</sup> The survey was in field from February 5 – June 6, 2019. Prior to the field period, SSRS programmed the study into SSRS’s Computer-assisted online interviewing system (webCATI) for data collection in Canada and the US. For consistency purposes across countries, the web domains used in the US were [www.internationaldoctorsurvey.org](http://www.internationaldoctorsurvey.org) or [www.internationaldoctorsurvey.com](http://www.internationaldoctorsurvey.com); respondents were allowed to enter the .org or .com top-level domains but all the invitation materials displayed the .org version. Extensive checking of the programs was conducted to assure that skip patterns followed the design of the questionnaire. The computer-assisted instruments were tested to ensure that all of the language inserts

<sup>23</sup> The Health Foundation was provided endorsement for the UK.

<sup>24</sup> The average household income in each zip code was obtained from Claritas. For this study, low income areas were defined as those with an average household income of under \$55,000.

were working properly. SSRS also designed a paper survey to be used in the US following best practices to maximize usability and respondent completion.

Once the instrument was finalized, a total of six cognitive pretest interviews, two web and four hard-copy, were conducted November 14 to November 21, 2018. Respondents varied by age, gender, and region, in order to represent the population as much as possible. Interviewers conducted semi-structured cognitive interviews and solicited feedback on the instrument/program, invitation letter, reminder letter, and publication list. SSRS provided a detailed memo of the pretest findings to the Fund (see the Appendix). Based on the respondent feedback, minor changes were made to the instrument and web program. Changes to the questionnaire were made across countries. SSRS had the changes translated and provided an updated translation spreadsheet to all country partners and vendors.

Primary care doctors were recruited via postal mail and invited to participate in a paper-copy or online version of the survey. Fielding was divided into two waves. To encourage participation, PCPs were mailed an incentive check of \$25 prior to completing the survey and a list of publications based on previous International Health Policy surveys. Doctors in the US received an advance invitation including the web link and up to ten additional contacts/reminders during the field (i.e., two or three paper questionnaires, one reminder letter, and up to six email reminders). The specifications for each contact/wave are outlined below. Email reminders were sent to the 94% of the sample for which email addresses could be appended by the sample provider (IQVIA).

Three experiments were implemented in wave 1:

- 1) 20% of the sample was sent the \$25 incentive in the prenotification mailing and a \$2 incentive in the first paper copy mailing while 80% was sent only the \$25 incentive in the first paper copy mailing,
- 2) 50% were sent the envelope with a color logo versus 50% being sent a black and white logo envelope, and
- 3) 50% were sent an email mentioning the incentive in the email subject line versus 50% receiving an email not mentioning the incentive in the email subject line.

After Wave 1 had been in field for a significant amount of time, we observed that the response rate was notably higher for the records that received the additional \$2 incentive in the second contact and that the response rate was slightly better when using the color logo and mention of the incentive in the email subject line. We were able to make changes that had limited or no impact on budget, consequently, we printed the envelope logos in color and mentioned the incentive in the subject line for subsequent mailings.

**TABLE 14: US Contact Schedule**

Contact	Wave 1	Wave 2	Type of Contact	Documents Included
1	2/5/19	4/12/19	Postal	Cover letter with web link List of The Commonwealth Fund’s publications \$25 check <sup>25</sup>
2	2/12/19	4/18/19	Postal	Cover letter with web link \$25 check or \$2 cash incentive <sup>24</sup> 8-page paper questionnaire Postage-paid reply envelope
3	2/14/19 <sup>26</sup>	4/18/19	Email	Email with personalized web link
4	2/24/19	4/26/19	Email	Email with personalized web link
5	2/26/19	4/25/19	Postal	Reminder letter with web link and passcode
6	3/8/19	5/6/19	Email	Email with personalized web link
7	3/8/19	4/30/19	Postal	Cover letter with web link 8-page paper questionnaire Postage-paid reply envelope
8	3/13/19	5/14/19	Email	Email with personalized web link
9	3/27/19	5/22/19	Email	Email with personalized web link
10	4/11/19	--	Postal	Cover letter with web link 8-page paper questionnaire Postage-paid reply envelope
11	4/8/19	--	Email	Email with personalized web link

SSRS kept track of a master file of contacts initiated by US respondents throughout the field period. This file included information about the reason behind the communication established with the respondent and the decisions made to proactively address the issue raised.

To maximize response rates and similar to IHP 2015, SSRS implemented a strategy that allowed respondents in the US to provide their email address so that highlights on the survey results can be shared when they are available.

As part of the back-end process, there were some duplicate cases in the US data because respondents took two or more surveys (i.e., both web and paper or two paper surveys). If duplicate cases were found, the following rules were followed to select the cases that were kept in the final data file.

- Cases with the highest completion response rate were kept regardless of the survey mode.
- If duplicate cases for a particular respondent had identical questionnaire completion rates and the mode of completion cases was different (i.e., mail and online), the online case was kept.

<sup>25</sup> For experiment group only.

<sup>26</sup> Email 1 was resent with a new email address due to a low open rate on 3/1/19.

- The case with the earliest date of completion was selected for duplicate cases with identical completion response rates and mode of completion (e.g., two mail-based interviews from a single respondent).

Table 15 below shows the completes by mode by sample type.

**TABLE 15: US Completes by Mode**

	Main	Low Income	Total US
Web	373	212	585
Paper	660	331	991
Total	1033	543	1576

## SAMPLE DESIGN AND RESPONSE RATES BY COUNTRY

### Australia

The PCP sample in Australia was drawn from a national list of physicians provided by MDA (Medical Directory of Australia). The list contains over 25,000 Australian physicians and is updated on a monthly basis. Physicians sampled corresponded to general practitioners. The sample was stratified by region. The final sample for Australia included an oversample of New South Wales (NSW) and Victoria<sup>27</sup> to allow for region-specific analyses. For the main sample, to achieve a final sample size of N=500, 5,128 records were selected.<sup>28</sup>

**TABLE 16: Final Dispositions – Australia**

Total records	5128
Ineligible <sup>29</sup>	80
Valid sample	5048
Completes	665
Response Rate	14.5%

### Canada

The PCP sample in Canada was drawn from a national list of physicians provided by Professional Targeted Marketing (PTM). The list was derived from the Canadian Medical Directory master file. The list contains over 85,000 Canadian physicians and is updated on a monthly basis. PTM databases include office-based

<sup>27</sup> NSW and Victoria data collection and processing are ongoing as of September 2019.

<sup>28</sup> More sample was released in the main sample than was needed for NSW and Victoria. To maximize response rates, we allowed as many completes as possible from the main sample pull for NSW and Victoria. While the final representative sample size for Australia was N=500, N=665 completes were collected from the main sample pull.

<sup>29</sup> This group was mainly composed of PCPs who screened out as not being involved in primary care. In Australia (similar to NZ) a screener was implemented asking PCPs whether they want to participate and if they are involved in direct patient care or not similar to what was done in IHP 2015.

mailing addresses for all of the physicians and email addresses for approximately 60% of physicians. Physicians sampled were general practitioners and family practitioners. Sample was randomly selected among each of these groups and certain provinces were oversampled. 6,924 records were selected.

**TABLE 17: Final Dispositions – Canada**

	Total Canada	Ontario	Quebec
Total records	6924	1600	1460
Non-deliverables and ineligible <sup>30</sup>	145	43	18
Valid sample	6779	1557	1442
Completes	2569	612	469
Response Rate	39.3%	40.9%	33.4%

	Total Census	PEI	Total Terr.	Itinerant Terr.	Non-Itinerant Terr.
Total records	354	107	247	133	114
Non-deliverables and ineligible <sup>31</sup>	18	1	17	7	10
Valid sample	336	106	230	126	104
Completes	162	44	118	67	51
Response Rate	50.8%	42.1%	54.6%	55.6%	53.5%

## France

The PCP sample in France was drawn from a national panel of GPs in France that was created in 2018. A total of 12,022 GPs were contacted to be included in the panel out of ~45,000 GPs in France. A total of N=3,304 GPs were included in the final panel. A total of N=1,777 GPs were selected for inclusion in the IHP 2019 survey. The sample was pulled randomly from the total panel population save two partner regions being oversampled (PACA and Pays de la Loire). The oversamples were adjusted in the weighting to make the final population representative.

<sup>30</sup> The “ineligible” category corresponded in most instances to a small group of respondents who directly contacted the survey-fielding company about not being in primary care, being retired or for whom information about being deceased was obtained.

<sup>31</sup> The “ineligible” category corresponded in most instances to a small group of respondents who directly contacted the survey-fielding company about not being in primary care, being retired or for whom information about being deceased was obtained.



**TABLE 18: Final Dispositions – France**

Total records	1777
Ineligibles	6
Valid sample	1771
Completes	1287
Completion Rate	72.7%
Panel Response Rate	27.5%
Survey Response Rate	20.0%

## Germany

For Germany, the sample was provided by Acxiom Deutschland GmbH. For Germany, 7,500 PCPs were selected from the sample, composed of general practitioners and pediatricians, distributed according to the latest data from the German Medical Association. The distribution across the regions (16 Bundesländer) was likewise proportionately selected according to the latest data from the German Medical Association (Statistische Informationen - Bundesarztregister 31.12.2017).

**TABLE 19: Final Dispositions – Germany**

Total records	7500
Non-deliverables	295
Valid sample	7205
Completes	809
Response Rate	14.7%

## The Netherlands

The Dutch PCP sample was randomly drawn from the database of the Netherlands Institute of Health Services Research (NIVEL).<sup>32</sup> The database contains approximately 8,800 general practitioners, working in approximately 5,000 practices. Physicians sampled corresponded to primary care physicians. A selection of 1,612 records was employed.

**TABLE 20: Final Dispositions - The Netherlands**

Total records	1645 <sup>33</sup>
Non-deliverables	13
Valid sample	1632
Completes	788
Response Rate	48.7%

<sup>32</sup> The NIVEL database does not include names, just addresses. As such, data were reviewed at a substantive level to ensure no duplicates were included.

<sup>33</sup> A small sample of completes (N=33) came from a duplicate address (i.e., more than one complete from the same address) but were not completed by the same GP. This means that while N=1,612 addresses were pulled, the response rate was based off of N=1,645 records.

## New Zealand

In New Zealand the PCP sample was randomly selected using a Yellow Page lookup procedure. The total PCP population, according to the respondent qualifications for this study, is of approximately 5,000 per the Medical Council of New Zealand - The New Zealand Medical Workforce in 2018. The sample was stratified by region and the physicians sampled corresponded to general practitioners.

**TABLE 21: Final Dispositions - New Zealand**

Total records	3436
Ineligible <sup>34</sup>	58
Valid sample	3378
Completes	503
Response Rate	16.2%

## Norway

In Norway sample was drawn from a registry of general practitioners at the Norwegian Directorate of Health. ~2,000 records were selected out of the total sample list of 4,845 records. Physicians sampled corresponded to general practitioners.

**TABLE 22: Final Dispositions – Norway**

Total records	1993
Non-deliverables and ineligible	12
Valid sample	1981
Completes	661
Response Rate	33.8%

## Sweden

PCPs in Sweden were sampled from the IQVIA database ([www.iqvia.se](http://www.iqvia.se)), formerly known as OneKey/Cegedim. The target population consisted of general practitioner specialists and general practitioners under specialist training working independently at a primary care center. The full sample list of 5,824 records were selected.

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<sup>34</sup> This group was mainly composed of physicians who screened out as not being involved in primary care. In New Zealand, similar to Australia, a screener was implemented asking sampled physicians whether they want to participate and if they are involved in direct patient care or not similar to what was done in IHP 2015.

**TABLE 23: Final Dispositions – Sweden**

Total records	5824
Non-deliverables and ineligible	104
Valid sample	5824
Completes	2411
Response Rate	42.2%

## Switzerland

The sample in Switzerland was provided by The Swiss Medical Association (FMH) member file. The sample was then randomly selected. The French and Italian Linguistic Regions were oversampled. Initially only one release was planned, however, due to a lower response rate than expected a smaller second release was needed. 2,845 records were selected from the list.

**TABLE 24: Final Dispositions – Switzerland**

Total records	2845
Ineligibles <sup>35</sup>	124
Valid sample	2721
Completes	1095
Response Rate	42.8%

## The United Kingdom

The UK sample of PCPs was drawn from an online source provided by Specialist Info. This list is updated daily and has details on over 62,179 general practitioners. The London, Scotland, Wales and Northern Ireland regions were oversampled. A total of 3,859 records were selected from the sample list.

**TABLE 25: Final Dispositions – UK**

Total records	3859
Ineligibles <sup>36</sup>	49
Valid sample	3810
Completes	1001
Response Rate	26.8% <sup>37</sup>

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<sup>35</sup> Includes respondents who said they are not PCPs, bad addresses, PCPs who died, or cases where the postal address nor the phone number is working.

<sup>36</sup> Includes respondents who failed the screener (respondents in groups that were over quota, did not spend more than 50% of their time in direct patient care, not a general practitioner, or refused to provide a current job title), and non-working/invalid phone numbers.

<sup>37</sup> As mentioned previously, an interviewer error resulted in N=403 removals. Without these removals the response rate would have been 37.6%.

## The United States

SSRS procured the sample for PCPs in the United States from IQVIA. IQVIA databases of physicians and other health-care providers are continuously updated. Physicians sampled were internal medicine physicians, family medicine physicians, general practitioners, or pediatricians. The sample was randomly selected among each of these groups. IQVIA databases include office-based mailing addresses for all of the physicians and email addresses for approximately 90% of physicians. The population is of about 266,052 PCPs according to the 2019 AMA; 8,689 records were selected for this study via IQVIA.

**TABLE 26: Final Dispositions – US**

	Total US	Main	Low Income OS
Total records	8689	5477	3212
Non-deliverables <sup>38</sup> and ineligible <sup>39</sup>	1234	717	517
Valid sample	7755	4760	2695
Completes	1576	1033	543
Response Rate	21.2%	21.7%	20.2%

## DETAILED WEIGHTING PROCEDURES BY COUNTRY

### Overview

In the 2019 International Health Policy (IHP) Survey of Primary Care Providers, data from each country were weighted to ensure the final outcome was representative of the primary care physician (PCP) population, based on the population parameters and selected specialty types outlined in the table below. The weighting procedure accounted for the sample design and probability of selection, as needed, as well as differential non-response across known population parameters. For most countries, the weighting procedure replicated the 2015 weighting protocol.<sup>40</sup>

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<sup>38</sup> Compared to IHP 2015, the sample has significantly more undeliverables. For the second sample release, a “likely bad sample” marker was created and used to undersample addresses that were likely to be bad.

<sup>39</sup> The “ineligible” category corresponded in most instances to a small group of respondents who directly contacted the survey-fielding company about not being in primary care, being retired or for whom information about being deceased was obtained.

<sup>40</sup> Notably, data for France were weighted by SSRS in 2015 but, due to a methodology change to use an online panel, were weighted by Direction de la Recherche, des Etudes, de l’Évaluation et des Statistiques (DREES) of the Solidarities and Health Ministry in 2019.

**TABLE 27: Post-Stratification Variables and Respondent Qualifications**

	Post-stratification Variables	Respondent	Oversamples
Australia	Gender, age, urbanicity, region	General practitioners	None <sup>41</sup>
Canada	Gender, age, province	General practitioners and family practitioners	Quebec, Ontario and Censuses in PEI and the territories
France	Gender, age, region, level of activity, type of area	General practitioners	None
Germany	Gender, age, region, specialty	General practitioners and pediatricians	None
Netherlands	Gender, age, region	Primary care physicians	None
New Zealand	Gender, age, region	General practitioners	None
Norway	Gender, age, region	General practitioners	None
Sweden	Gender, age and region	General practitioner specialists and general practitioners under specialist training working independently at a primary care center	None
Switzerland	Gender, age, linguistic region	GP and Pediatricians <sup>42</sup>	None
UK	Gender, age, region	General practitioners	Regional oversamples in smaller regions
US	Gender, age, region, specialty	Internal and family medicine physicians, general practitioners, or pediatricians	Low income serving GPs

## How to Analyze Polling Data with Oversamples

It is a common practice to oversample certain groups of interest. Oversampling enables researchers to have larger sample sizes to analyze data while minimizing margin of error when generating survey estimates of the oversampled population.

When you oversample a specific group of interest, the baseweight corrects for the oversampling by “weighting down” the oversampled respondents to their proper proportion of the sample, and then the total sample is weighted to the parameters of the total population of interest.

It is important for researchers to understand the implications of these procedures. Quite simply, with a “balance weight” whereby the weighted total sample size is equal to the unweighted sample size, the number of weighted respondents in the oversampled population will be proportionate to their occurrence in the universe. This means the weighted number of respondents in the oversampled population will be

<sup>41</sup> While sub-regional (PHN level) oversamples were conducted in Victoria and NSW, these completes are not included in the all country dataset due to extra time needed in field.

<sup>42</sup> Includes praktischer Arzt, allgemeine innere Medizin, Kinder- und Jugendmedizin.

smaller than actual number interviewed. If such data were analyzed with a basic statistics package like SPSS, the margin of error for the oversample population would reflect the weighted n-size and not the n-size of those who were interviewed (their unweighted N). The researcher would have paid to attain a margin of error appropriate for the larger unweighted N size but would not enjoy this level of precision when analyzing the data. The below table shows an example of population and interview n-sizes when an oversample is used. The researcher in this example did 1,000 interviews with the oversample population, but the statistical software will run statistical tests as though only 226 interviews were completed.

**TABLE 28: Example of Oversample N-Sizes**

	Natural Population Distribution (%)	Example Study Population Completes:			Weighted N-size
		Main Sample	Oversample	Total	
Non-oversample population	88%	880	0	880	1654
Oversample population	12%	120	880	1000	226
Total	100%	1000	880	1880	1880

There are two solutions to this problem. The first is to utilize a statistics package that can apply a Taylor Linearization Series to the data. Under this procedure, the researcher would enter a Primary Sampling Unit (PSU) or strata variable into the statistics package that indicates the sample selections upon which under/oversampling occurred. In effect, this will allow the statistics package to calculate proper margins of error for estimates based on the true sample sizes of groups. In effect, the researcher will attain a margin of error appropriate to the number of interviews not the weighted N-size. Statistics packages with this capability include SAS, R, Stata, and SPSS with the Complex Samples module.

If one does not have access to such a package, SSRS can provide a secondary weight that can be used to conduct comparisons between the oversampled group and other respondents, or to analyze the oversampled group alone, as the main weight supplied with the data will be appropriate for analysis of the overall population only. Regardless, SSRS will identify the PSU variable whenever there are oversamples so that researchers can properly analyze their data with the correct margins of error.

## Detailed Weighting Procedures by Country

### *Australia*

The PCP data in Australia were weighted to account for differential non-response along known geographic and demographic parameters.

**Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response

that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, urbanicity, and region.

Benchmarks were derived from the 2018 General Practice Workforce Statistics.

**TABLE 29: Weighted and Unweighted Distributions and Population Parameters for Australia**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	60.0%	54.9%	53.9%
Female	40.0%	45.1%	46.1%
<b>AGE</b>			
<35	8.2%	13.9%	14.1%
35-44	24.0%	25.0%	25.1%
45-54	24.6%	23.5%	23.7%
55-64	30.4%	23.4%	22.7%
65+	12.8%	14.2%	14.4%
<b>URBANICITY</b>			
Major Cities	75.8%	70.7%	68.6%
Inner Regional	17.2%	19.2%	18.8%
Outer Regional	6.4%	8.8%	8.9%
Remote	0.6%	1.3%	3.7%
<b>REGION</b>			
New South Wales (NSW)	32.0%	31.2%	30.2%
Australian Capital Territory (ACT)	2.0%	1.6%	1.5%
Victoria (VIC)	20.6%	24.9%	24.4%
Queensland (QLD)	23.8%	20.7%	21.7%
South Australia (SA)	7.6%	7.0%	7.7%
Western Australia (WA)	10.8%	10.6%	10.5%
Tasmania (TAS)	1.8%	2.6%	2.5%
Northern Territory (NT)	1.4%	1.5%	1.5%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### **Canada**

The PCP data in Canada were weighted to account for: (1) the over-representation of PCPs in some provinces; (2) the availability of an email address or not (since respondents with email addresses could be contacted both by mail and email); and (3) differential nonresponse along known geographic and demographic parameters.

The weighting adjustment was conducted in two stages:

**(1) Design Weight:** The distributions by email availability and province<sup>43</sup> were balanced to the breakdown in the sampling frame. In addition, a design-weight adjustment for province<sup>44</sup> was done. The design-weight adjustments were done separately for Ontario, Quebec, Prince Edward Island and the rest of Canada.

**(2) Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

In Canada, data were weighted by age and gender (for Ontario, Quebec and the rest of Canada) and by province. All benchmarks were derived from the CMA Masterfile, January 2019, Canadian Medical Association.

**TABLE 30: Weighted and Unweighted Distributions and Population Parameters for Ontario**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	50.6%	54.5%	54.4%
Female	49.4%	45.5%	45.6%
<b>AGE</b>			
<35	16.3%	9.8%	9.7%
35-44	21.0%	23.3%	23.2%
45-54	22.9%	25.3%	25.6%
55-64	23.8%	24.8%	24.7%
65+	16.0%	16.8%	16.8%

<sup>43</sup> The distribution of PCPs by province, weighted and unweighted, is displayed in the post-stratification section.

<sup>44</sup> Province (QN531 in the dataset) is the PSU variable. Please refer to the "How to Analyze Polling Data with Oversample" section for more information.



**TABLE 31: Weighted and Unweighted Distributions and Population Parameters for Quebec**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	47.4%	45.4%	45.2%
Female	52.6%	54.6%	54.8%
<b>AGE</b>			
<35	25.8%	15.7%	15.6%
35-44	17.4%	19.6%	19.4%
45-54	17.4%	20.8%	20.6%
55-64	26.6%	27.7%	27.9%
65+	12.9%	16.2%	16.4%

**TABLE 32: Weighted and Unweighted Distributions and Population Parameters for the Rest of Canada**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	55.1%	58.3%	58.4%
Female	44.9%	41.7%	41.6%
<b>AGE</b>			
<35	13.6%	9.3%	9.2%
35-44	27.4%	25.4%	25.2%
45-54	24.3%	26.7%	27.2%
55-64	22.0%	24.9%	24.9%
65+	12.7%	13.7%	13.6%
<b>PROVINCE</b>			
Alberta	12.5%	30.2%	30.4%
British Columbia	15.6%	34.3%	34.3%
Manitoba	12.6%	7.9%	7.9%
New Brunswick	13.2%	6.2%	6.2%
Newfoundland	12.9%	4.9%	4.9%
Northwest Territories	1.3%	0.3%	0.3%
Nova Scotia	12.6%	7.1%	7.1%
Nunavut	0.4%	0.1%	0.1%
Prince Edward Island	3.0%	1.0%	1.0%
Saskatchewan	13.8%	7.7%	7.7%
Yukon Territory	2.1%	0.4%	0.4%

**TABLE 33: Weighted and Unweighted Distributions by Province for Canada**

PROVINCE	Unweighted (%)	Weighted (%)	Target (%)
Alberta	7.2%	12.9%	13.0%
British Columbia	9.0%	14.7%	14.7%
Manitoba	7.3%	3.4%	3.4%
New Brunswick	7.6%	2.7%	2.6%
Newfoundland	7.5%	2.1%	2.1%
Northwest Territories	0.8%	0.1%	0.1%
Nova Scotia	7.3%	3.0%	3.0%
Nunavut	0.2%	.01%	0.03%
Ontario	23.8%	34.0%	34.0%
Prince Edward Island	1.7%	0.4%	0.4%
Quebec	18.3%	23.1%	23.1%
Saskatchewan	8.0%	3.3%	3.3%
Yukon Territory	1.2%	0.2%	0.2%

In the final weighting step, the weights were adjusted so that the share of each province would reflect the share of that province among Canadian PCPs.

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### France

Unlike data for other countries, data collected for France was not weighted by SSRS. SSRS provided oversight of the weighting procedures conducted by the Direction de la Recherche, des Etudes, de l’Evaluation et des Statistiques (DREES) of the Solidarities and Health Ministry, who provided the specifications and text outlined below. Given that France was a panel-based survey, the following weighting procedures outline how the weighting was conducted within the panel. This IHP 2019 study was in field after the inclusion wave (wave 0), and after wave 1 (another survey). The following technical specs outlines the weighting adjustments for IHP 2019 (i.e., wave 2).

The weights used for IHP 2019 were constructed as follows: the initial weights of the general sampling, multiplied by the inverse probability of answering at the inclusion wave, multiplied by the inverse probability of being part of the IHP 2019 subsample.

The weighting adjustment was conducted in two stages:

**(1) Design Weight:** In order to take non-response into account, homogeneous groups of non-response were defined. A classification tree was used, which defined the most discriminant characteristics regarding non-response. Below are the response rates by defined homogeneous groups.

**TABLE 34: Homogeneous Groups of Response Rate**

Group	Response Rate
Under 50	79%
50 and over, low and high activity	64%
50 and over, medium activity	73%

The IHP 2019 initial weights were divided by these probabilities of response and then calibrated using post-stratification weighting.

**(2) Post-Stratification Weight:** Calibration was done with the raking method on the margins of the following variables: gender, region (Provence-Alpes-Côte d’Azur (Paca), Pays de la Loire and the rest), age (as of January 1, 2019), level of activity, and type of area (i.e., urbanicity).

The sampling base for the IHP 2019 study was representative of the population of GPs in France. The sampling base was therefore used as the weighting benchmarks targets. The below table details the distributions by four different populations<sup>45</sup>:

- The unweighted IHP 2019 completes percentages
- The weighting targets or % of GPs that composing the sampling base
- The whole population of “private” GPs<sup>46</sup>
- The population of GPs (including salaried GPs)<sup>6</sup>

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<sup>45</sup> The sampling base/target percentages match official percentages to a certain extent because they were matched with data from the National Health Insurance (CNAM) to ensure necessary information about GPs was procured to apply restrictions.

<sup>46</sup> The population of “private” and “GPs (including salaried)” are from an exhaustive list of physicians in France and were used as a check against the sampling base.

**TABLE 35: Unweighted Distributions and Population Parameters for France<sup>47</sup>**

	<b>“Private” GPs (%)</b>	<b>Whole GPs (%)</b>	<b>Unweighted (%)</b>	<b>Sampling base/ Target (%)</b>	<b>Weighted (%)</b>
<b>GENDER</b>					
Male	60%	53%	56%	62%	62.5%
Female	40%	47%	44%	38%	37.5%
<b>AGE<sup>48</sup></b>					
<35	14%	14%	6%	3%	3.0%
35-44	16%	17%	22%	16%	16.3%
45-54	20%	22%	19%	21%	20.8%
55-64	36%	35%	39%	42%	41.9%
65+	14%	13%	14%	18%	18.0%
<b>REGION</b>					
Paca	10%	9%	8%	9%	9%
Pays de la Loire	5%	5%	6%	6%	6%
The rest	85%	86%	86%	85%	85%
<b>ACTIVITY</b>					
Low activity	NA	NA	27%	25%	25%
Medium activity	NA	NA	52%	50%	50%
High activity	NA	NA	21%	25%	25%
<b>TOWN SIZE</b>					
Rural	NA	NA	17.2%	16.0%	16.0%
< 20,000 inhabitants	NA	NA	24.9%	22.0%	22.0%
20,000 <= 100,000	NA	NA	10.4%	15.0%	15.0%
100,000+ inhabitants	NA	NA	28.3%	35.0%	35.0%
Paris/surrounding suburbs	NA	NA	19.1%	12.0%	12.0%
<b>TYPE OF AREA</b>					
Town	NA	NA	31%	38%	36%
Suburbs	NA	NA	38%	36%	36%
Small town	NA	NA	13%	11%	12%
Rural area	NA	NA	18%	15%	16%

Unlike all other countries, weights were not trimmed in France.

<sup>47</sup> “NA” means that this information is either non published for the moment or not available by lack of data.

<sup>48</sup> The age sampling base is based off of 2018 information and not 2019 information unlike the other targets. Since there was an exclusion criterion for panel inclusion of needing “200 patients registered in the GP’s list” the distribution of young GPs (under age 35) is lower than the “Private” and “Whole” GP statistics.

## *Germany*

The PCP data in Germany were weighted to account for differential non-response along known geographic and demographic parameters.

**Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, region and specialty type.

Benchmarks were derived from The National Association of Statutory Health Insurance Physicians (NASHIP): "Statistische Informationen - Bundesarztregister 31.12.2017".

**TABLE 36: Weighted and Unweighted Distributions and Population Parameters for Germany**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	55.3%	54.6%	54.1%
Female	44.7%	45.4%	45.9%
<b>AGE</b>			
<35	.6%	.8%	0.8%
35-44	5.3%	15.8%	16.5%
45-54	29.7%	30.7%	30.6%
55-64	51.4%	35.9%	35.5%
65+	12.9%	16.7%	16.6%
<b>REGION</b>			
Schleswig-Holstein	3.6%	3.6%	3.6%
Hamburg	2.8%	2.5%	2.4%
Niedersachsen	5.1%	8.7%	9.4%
Bremen	1.5%	0.9%	0.9%
Nordrhein-Westfalen	15.7%	20.5%	20.5%
Rheinland-Pfalz	4.1%	4.8%	4.9%
Saarland	0.9%	1.2%	1.2%
Hessen	8.9%	7.7%	7.3%
Baden-Württemberg	20.4%	13.3%	13.1%
Bayern	18.4%	16.7%	16.6%
Berlin	5.9%	4.4%	4.7%
Mecklenburg-Vorpommern	1.2%	2.1%	2.1%
Brandenburg	2.7%	3.0%	2.9%
Sachsen-Anhalt	1.9%	2.7%	2.7%
Thüringen	2.8%	2.7%	2.7%
Sachsen	4.0%	5.1%	5.1%
<b>SPECIALTY TYPE</b>			
General Practitioner	84.3%	87.6%	87.8%
Pediatrician	15.7%	12.4%	12.2%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### **The Netherlands**

The PCP data in the Netherlands were weighted to account for differential non-response along known geographic and demographic parameters.

**Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response

that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age and region. Benchmarks were derived from 2017 data from the Netherlands Institute for Health Services Research (NIVEL).

**TABLE 37: Weighted and Unweighted Distributions and Population Parameters for the Netherlands**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	56.6%	47.7%	47.3%
Female	43.4%	52.3%	52.7%
<b>AGE</b>			
<35	3.4%	10.0%	10.9%
35-44	25.0%	30.7%	30.4%
45-54	31.2%	28.8%	28.5%
55-64	37.6%	28.4%	28.1%
65+	2.8%	2.1%	2.1%
<b>REGION</b>			
Drenthe	3.4%	3.0%	3.0%
Flevoland	1.3%	2.3%	2.3%
Friesland	3.0%	3.8%	3.8%
Gelderland	13.8%	12.9%	12.8%
Groningen	3.2%	3.3%	3.4%
Limburg	6.1%	6.6%	6.7%
Noord-Brabant	14.7%	14.2%	14.1%
Noord-Holland	17.5%	16.9%	16.8%
Overijssel	8.2%	6.5%	6.4%
Utrecht	7.5%	8.3%	8.2%
Zeeland	3.3%	2.1%	2.1%
Zuid-Holland	17.9%	20.1%	20.5%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### ***New Zealand***

The PCP data in New Zealand were weighted to account for differential non-response along known geographic and demographic parameters.

**Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response

that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, and region. Benchmarks were derived from the following sources:

- Gender and age were generated from The Royal New Zealand College Of General Practitioners 2018 General Practice Workforce Survey.
- Region was derived from the Medical Council of New Zealand, The New Zealand Medical Workforce in 2016.

**TABLE 38: Weighted and Unweighted Distributions and Population Parameters for New Zealand**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	45.5%	45.0%	45.0%
Female	54.5%	55.0%	55.0%
<b>AGE</b>			
<35	10.7%	13.1%	13.1%
35-44	21.1%	19.2%	19.2%
45-54	26.2%	24.2%	24.2%
55-64	32.8%	31.4%	31.3%
65+	9.1%	12.0%	12.1%
<b>REGION</b>			
Northern/Auckland	35.4%	35.6%	35.6%
Central North Island	18.7%	18.9%	18.9%
Lower North Island	17.5%	19.6%	19.7%
South Island	28.4%	25.8%	25.8%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### Norway

The PCP data in Norway were weighted to account for differential non-response along known geographic and demographic parameters.

**Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).



The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, and region. All benchmarks were derived from The Registry of GPs at the Norwegian Directorate of Health (April 29, 2019).

**TABLE 39: Weighted and Unweighted Distributions and Population Parameters for Norway**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	55.8%	56.1%	56.2%
Female	44.2%	43.9%	43.8%
<b>AGE</b>			
<35	10.9%	12.8%	12.8%
35-44	29.3%	33.9%	33.9%
45-54	22.2%	22.5%	22.5%
55-64	26.9%	22.0%	21.9%
65+	10.6%	8.8%	8.8%
<b>Region</b>			
Østfold	5.0%	5.2%	5.2%
Akershus	8.2%	10.1%	10.2%
Oslo	12.1%	10.9%	10.9%
Hedmark	3.8%	3.8%	3.8%
Oppland	3.3%	3.9%	3.9%
Buskerud	6.4%	5.3%	5.3%
Vestfold	4.2%	4.4%	4.4%
Telemark	3.0%	3.4%	3.4%
Aust-Agder	2.3%	2.3%	2.3%
Vest-Agder	4.1%	3.7%	3.7%
Rogaland	8.0%	8.3%	8.3%
Hordaland	11.0%	9.8%	9.8%
Sogn og Fjordane	2.4%	2.8%	2.8%
Møre og Romsdal	6.2%	5.3%	5.3%
Trøndelag	9.5%	9.0%	9.0%
Nordland	4.4%	5.4%	5.4%
Troms	4.2%	4.1%	4.1%
Finmark	1.8%	2.1%	2.1%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### Sweden

The PCP data in Sweden were weighted to account for differential non-response along known geographic and demographic parameters.

**Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, and region. There are no official statistics on age and gender of the population according to the population definition used, therefore use the distribution in the IQVIA database was used to create the weighting benchmarks.

**TABLE 40: Weighted and Unweighted Distributions and Population Parameters for Sweden**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	47.3%	48.8%	48.9%
Female	52.7%	51.2%	51.1%
<b>AGE</b>			
<35	11.8%	12.4%	12.5%
35-44	26.5%	27.2%	27.2%
45-54	21.7%	22.9%	22.9%
55-64	26.3%	24.6%	24.5%
65+	13.7%	12.9%	12.9%
<b>REGION</b>			
Stockholm/Gotland	22.6%	25.1%	25.1%
Uppsala	3.5%	3.2%	3.2%
Södermanland	2.9%	2.8%	2.8%
Östergötland	4.1%	4.2%	4.2%
Jönköping	4.4%	3.6%	3.6%
Kronoberg	1.9%	1.8%	1.8%
Kalmar	2.7%	2.6%	2.6%
Blekinge	1.4%	1.2%	1.2%
Skåne	15.4%	14.7%	14.7%
Halland	3.5%	3.7%	3.7%
Västra Götaland	15.7%	16.7%	16.7%
Värmland	2.5%	2.3%	2.3%
Örebro	2.9%	2.8%	2.8%
Västmanland	1.9%	2.3%	2.4%
Dalarna	2.8%	2.6%	2.6%
Gävleborg	2.9%	2.4%	2.4%
Västernorrland	2.1%	1.9%	1.9%
Jämtland	1.9%	1.5%	1.5%
Västerbotten	2.2%	2.1%	2.1%
Norrbottn	2.6%	2.2%	2.2%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

## Switzerland

The PCP data in Switzerland were weighted to account for: (1) the over/under sampling of PCPs in some linguistic regions and (2) differential non-response along known geographic and demographic parameters.

The weighting adjustment was conducted in two stages:

**(1) Design Weight:** Bias was addressed by applying weights to the data, so that the breakdown of PCPs by province is balanced to the breakdown in the sampling frame (the Swiss Medical Association (FMH) sample).

**TABLE 41: Linguistic Region Design Weight**

Linguistic Region	FMH Sample (%)	Data (%)	Weight
German	68.6%	63.3%	1.08
French	26.6%	25.5%	1.04
Italian	4.7%	11.2%	0.42

**(2) Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, and linguistic region. All benchmarks were derived from The Swiss Medical Association (FMH) member file, January 2019.

**TABLE 42: Weighted and Unweighted Distributions and Population Parameters for Switzerland**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	65.5%	59.4%	59.4%
Female	34.5%	40.6%	40.6%
<b>AGE</b>			
<35	1.6%	1.7%	1.7%
35-44	21.4%	18.8%	18.7%
45-54	29.3%	29.2%	29.2%
55-64	31.7%	32.9%	32.9%
65+	16.0%	17.5%	17.5%
<b>LINGUISTIC REGION</b>			
German	63.3%	68.6%	68.6%
French	25.5%	26.6%	26.6%
Italian	11.2%	4.8%	4.7%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### *The United Kingdom*

The PCP data in the UK were weighted to account for: (1) the oversampling of PCPs in some regions and (2) differential non-response along known geographic and demographic parameters.

The weighting adjustment was conducted in two stages:

**(1) Design Weight:** Weights were applied to balance the distribution of PCPs by region to the breakdown according to the General Medical Council (GMC).

**TABLE 43: Region Design Weight**

Region <sup>49</sup>	GMC (%)	Data (%)	Weight
England excluding London	72.1%	47.5%	1.5
London	12.5%	20.0%	0.6
Scotland	8.4%	13.5%	0.6
Wales	4.2%	11.1%	0.4
Northern Ireland	2.7%	8.0%	0.3

**(2) Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, and region. All benchmarks were derived from The General Practitioner Register from the General Medical Council, as of 02/01/2019.

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<sup>49</sup> Region (QNS4 in the dataset) is the PSU variable. Please refer to the "How to Analyze Polling Data with Oversample" section for more information.

**TABLE 44: Weighted and Unweighted Distributions and Population Parameters for the UK**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	49.4%	53.9%	53.9%
Female	50.6%	46.1%	46.1%
<b>AGE</b>			
<35	28.3%	28.7%	28.7%
35-44	30.9%	28.9%	28.9%
45-54	21.4%	22.2%	22.2%
55-64	14.1%	14.0%	14.0%
65+	5.4%	6.2%	6.3%
<b>REGION</b>			
England excluding London	47.5%	72.2%	72.1%
London	20.0%	12.5%	12.5%
Scotland	13.5%	8.4%	8.4%
Wales	11.1%	4.2%	4.2%
Northern Ireland	8.0%	2.7%	2.7%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

### **The United States**

The PCP data in the US were weighted to account for: (1) the availability of an email address or not (since respondents with email addresses could be contacted both by mail and email), (2) the oversampling of low income areas, (3) the undersampling of cases with a “likely bad sample flag” in wave 2<sup>50</sup>, and (4) differential non-response along known geographic and demographic parameters.

The weighting adjustment was conducted in two stages:

**(1) Design Weight:** The breakdown of email availability was balanced to the breakdown according to the sample distribution. Low income areas<sup>51</sup> were balanced to the distribution of these areas in the sample without any over sampling. The likely bad sample flag, similarly, was adjusted to the true distribution in the sample.

**(2) Post-Stratification Weight:** Weighting is accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

<sup>50</sup> Sample in the US was released in two waves to enable the second mailing to be targeted. In the first wave there was a large volume of undeliverable sample. For the second mailing, records flagged as “likely bad” were undersampled to decrease the number of undeliverables and help improve productivity. The “likely bad sample” were addresses that were not found when normalizing the address in CASS (Coding Accuracy Support System) certification.

<sup>51</sup> A low-income location flag (QN525 in the dataset) is the PSU variable. Please refer to the “How to Analyze Polling Data with Oversample” section for more information.

To handle missing data among some of the demographic variables we employ a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file. We use an SPSS macro detailed in 'Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handling Missing Data' (Myers, 2011).

The PCP survey data were balanced to the distribution of the PCPs along the following parameters: gender, age, region and specialty type. All benchmarks were derived from the 2019 AMA Physicians Masterfile excluding residents.

**TABLE 45: Weighted and Unweighted Distributions and Population Parameters for the US**

	Unweighted (%)	Weighted (%)	Target (%)
<b>GENDER</b>			
Male	60.5%	55.2%	54.8%
Female	39.5%	44.8%	45.2%
<b>AGE</b>			
<35	7.1%	8.1%	8.0%
35-44	18.1%	22.9%	22.9%
45-54	25.9%	27.1%	27.3%
55-64	27.1%	24.3%	24.1%
65+	21.8%	17.7%	17.7%
<b>REGION</b>			
East	17.7%	20.3%	20.1%
Midwest	23.5%	21.5%	21.3%
South	39.3%	34.7%	34.8%
West	19.4%	23.5%	23.7%
<b>SPECIALTY TYPE</b>			
Internal medicine physicians	27.1%	38.8%	39.3%
Family medicine physicians	43.5%	36.9%	36.6%
General practitioners	1.9%	1.9%	2.0%
Internal medicine – Pediatric/Pediatricians	27.5%	22.4%	22.2%

Weights were trimmed at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles to prevent individual interviews from having too much influence on the final results.

## DESIGN EFFECT AND MARGIN OF SAMPLING ERROR

Weighting procedures increase the variance in the data, with larger weights causing greater variance. Complex survey designs and post-data collection statistical adjustments affect variance estimates and, as a result, tests of significance and confidence intervals. These are weight-adjusted margins-of-error for countries and targeted regions. The margins of error reported apply to estimates of 50%, for smaller or larger estimates, the margin of sampling error will be smaller. Sampling error is only one type of error that could affect survey outcomes.

**TABLE 46: Design Effect and Margin of Error by Country**

	Design Effect	Margin of Error	Population Universe
Australia	1.12	4.6	36,938
Canada	1.38	2.3	43,229
Quebec	1.07	4.7	10,000
Ontario	1.05	4.1	14,714
Rest of Canada	1.76	3.4	18,515
France	1.59	3.4	44,912
Germany	1.38	4.1	62,646
Netherlands	1.21	3.8	9,950
New Zealand	1.02	4.4	5,010
Norway	1.04	3.9	4,845
Sweden	1.01	2.0	5,777
Switzerland	1.07	3.1	36,900
UK	1.26	3.5	62,179
US	1.60	3.1	266,052

## DELIVERABLES/UPDATES

### Bi-weekly and Periodic Updates

In April 2019, SSRS provided each international partner with an interim status update on data collection, including an up-to-date distribution of interviews by gender, age, region, and language of interview.

### Preliminary Data

SSRS delivered a preliminary weighted SPSS dataset and the all-country banner (the banner which consisted of banner points per country) to The Commonwealth Fund in May 2019.

### Final Data

SSRS delivered the following to The Commonwealth Fund and sponsoring organizations: (1) final weighted SPSS dataset, (2) final weighted, all-country and country-specific banners in Microsoft Word and Excel formats, (3) final methodology report, (5) final versions of the questionnaires in English as well as the translated versions, (6) final created variable and banner specification memos.

Additionally, per contractual obligations or as ad-hoc requests, SSRS shared: (7) a trended banner comparing 2015 to 2019 for trendable questions, (8) a topline questionnaire with the Fund, and (9) a Canada Quality Report with the Canadian Institute of Health Information.