

Virtual Care Survey 2023

Measuring outpatient experiences

Technical Supplement

May 2024

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Please check the online version at bhi.nsw.gov.au for any amendments or errata.

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The conclusions in this report are those of BHI and no official endorsement by the NSW Minister for Health, the NSW Ministry of Health or any other NSW public health organisation is intended or should be inferred.

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Introduction

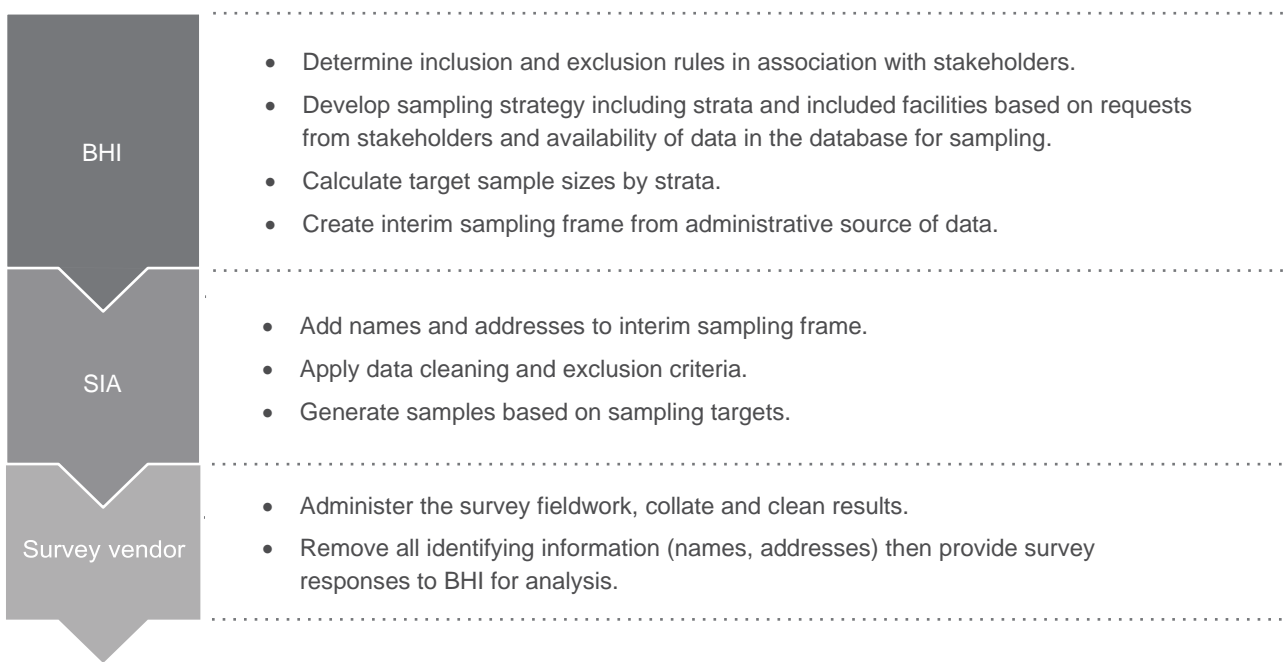
This technical supplement outlines the sampling methodology, data management and analysis of the results of the Virtual Care Survey 2023. Further supporting information is available in historical technical supplements for the Virtual Care Survey in previous years, available at bhi.nsw.gov.au

The New South Wales (NSW) Patient Survey Program began sampling patients in NSW public health facilities from 2007. The program was coordinated by the NSW Ministry of Health (Ministry) until mid-2012 when responsibility was transferred to the Bureau of Health Information (BHI). BHI has a contract with a survey vendor to support data collection, while BHI conducts all survey analysis.

The aim of the NSW Patient Survey Program is to measure and report on patients' experiences in public healthcare facilities in NSW on behalf of the Ministry and local health districts (LHDs). The survey program is guided by the [BHI Strategic Plan 2023–26](#), which ensures all patient surveys maximise benefits to patients and deliver unique value for the NSW health system.

Data collection for the NSW Patient Survey Program is a collaboration between BHI, the survey vendor and the Ministry's Systems Information and Analytics (SIA) branch. Figure 1 shows the organisational responsibilities for the sampling design and data collection phases for patient survey projects.

Figure 1 Organisational responsibilities in sampling and data collection



Virtual Care Survey

The Virtual Care Survey 2023 was undertaken as part of the NSW Patient Survey Program. It is the fourth dedicated virtual care survey BHI has conducted. Changes between the 2022 and 2023 questionnaires are recorded in a development report on BHI's website at bhi.nsw.gov.au/nsw_patient_survey_program/virtual-care-survey

Inclusion and exclusion criteria for outpatients

The survey questionnaire was provided to eligible patients aged 18+ years who had contact with non-admitted patient services via telephone or video call in August or September 2023 at eligible outpatient clinics in public hospital facilities.

The appointment date was used to determine the patients who were eligible to participate in the survey. The patients who had visited outpatient clinics multiple times in that month, including both virtual and in-person appointments, were sampled based on their last virtual care appointment in the month. Multidisciplinary case conferences that the patient did not attend were excluded.

Patients were eligible for sampling if they:

- received virtual healthcare in service contact modes 2 (Audio), T (Audio), N (Audiovisual), P (Audiovisual) or C (Audiovisual)
- received the service in August or September 2023.

Patients were excluded from sampling if they:

- had an invalid address (including those with addresses listed as hotels, motels, nursing homes, community services, jails, unknown or overseas)
- had an invalid name (including 'twin', 'baby of')
- had an invalid date of birth
- were on the 'do not contact' list
- were sampled in the previous six months for any BHI patient survey
- had a mode of separation of death for a subsequent admission to hospital
- were recorded as deceased according to the NSW Registry of Birth Deaths & Marriages and/or activity and performance reporting data collections, prior to the sample being provided to the survey vendor.

The remaining patients were considered to be the final sampling frame and eligible to participate in the Virtual Care Survey 2023.

Inclusion and exclusion criteria for services and outpatient clinics

Virtual care appointments were excluded if they were with:

- services deemed to be out of scope based on Tier 2 service type, including sexual health, palliative care, dental, specialist mental health and oncology services. Clinics that included 'multidisciplinary team' or 'MDT' in either the Tier 2 description or the clinic name were also excluded.
- services at outpatient cancer clinics, defined as clinics with the following terms in their clinic name: 'cancer', 'oncol*', 'radiation', 'radioth*', 'chemo*', 'breast', 'melanoma' and 'haema*'
- services at clinics with the following key words in their service type description – adolescent, youth, child, ethnic, screening, intake, maintenance care, paediatric, pathology, sexual, assault, wellness maintenance
- services at Sydney Children's Hospital, Randwick, The Children's Hospital at Westmead or Specialty Health Networks such as Parklea Corrections Health Centre and NSW Tresillian Family Care Centres, health facilities in the Justice Health and Forensic Mental Health Network and Northern Sydney LHD Private Health Sector
- service settings with the following key words in the description: 'expired', 'residential', 'admitted', 'mental health', 'child', 'transport' and 'education'.

Sample design

Sample design is part of the mechanism that ensures the results of the survey are representative of the population. It does this by carefully selecting patients across facilities and demographic characteristics.

Sampling for the Virtual Care Survey 2023 was designed to be representative at the NSW level in September 2023, and be similar to the previous survey in 2022. The sample was stratified by contact mode (telephone or video), rurality of patient postcode (rural or urban) and patient age (18–49 years, 50–64 years and 65+ years). Random sampling was conducted among all eligible patients within each strata, with the exception of eligible patients who had video appointments and were invited to complete the survey (census sampling) due to an estimated small population size. Target sampling numbers in each stratum were calculated based on prior response rates and summary strata-level data. Additional eligible patients who had video appointments were sampled in August to ensure sufficient survey responses for reporting.

The sampling frame for the Virtual Care Survey 2023 was obtained from the Ministry's Enterprise Data Warehouse for Analysis Reporting and Decision (EDWARD) Non-Admitted Patient (NAP) activity data.

For more information about how patient groups and geographical boundaries are defined, see page 8. The number of survey invitation letters mailed, the number of responses, and response rates by stratum of sampling and overall, are provided in Appendix 1.

Data collection and analysis

Data collection

Selected patients were invited to complete the questionnaire by submitting an online response. A reminder letter was sent to people who had not responded approximately two weeks after the first invitation letter was mailed. This was done to meet or exceed international best practice response rates, resulting in optimal precision in estimates.

The resultant survey data were anonymised and passed through quality assurance checks before being securely transferred to BHI servers, which are password-protected and only accessed by authorised staff.

Response rate and completion of questionnaires

The response rate is the percentage of people sampled who completed and submitted their responses. The number of surveys mailed, the number of responses and response rates, by stratum of sampling and overall, are provided in Appendix 1.

Survey completeness is a measure of how many questions each respondent answered as a proportion of all questions. The completeness of responses was high overall, with respondents answering, on average, 45 of the 50 non-text questions (this includes questions that were correctly skipped). Appendix 2 presents the rates of missing or 'Don't know/can't remember' responses for all questions.

Weighting of data

Survey responses were weighted to optimise the degree to which results were representative of the experiences and outcomes of the overall eligible patient population. At the NSW level, weights also ensured that the different sampling proportions used at the stratum level were accounted for, so that NSW results were not unduly influenced by the size of sampling for each stratum.

A weight was calculated for respondents in each stratum using the following equation:

$$W_i = \frac{N_i}{n_i}$$

Where:

N_i = total number of patients eligible for the survey in the i^{th} stratum.

n_i = number of respondents in the i^{th} stratum.

Weights for each stratum are presented in Appendix 1.

Strata may differ in relation to the type of clinical service used by the included patients, and their demographic characteristics. However, due to a lack of available information, it was not possible to adjust weights to account for these differences. This issue should be taken into account when comparing results from different strata.

Weighted percentages

All the results in the report were weighted. The weighted percentage of patients selecting each response option in the questionnaire was determined using the SURVEYFREQ procedure with a finite population correction factor and the Clopper-Pearson method adjusting for the sampling weights. Weighted percentages were calculated as follows:

Numerator – the (weighted) number of survey respondents who selected a specific response option to a certain question.

Denominator – the (weighted) number of survey respondents who selected any of the response options to a certain question, minus exclusions.

Calculation – the numerator/denominator x 100.

When reporting on responses to questions used to identify sub-cohorts, the 'Don't know'/ 'can't remember' option and missing responses were also reported. Appendix 2 presents the rates of missing or 'Don't know'/ 'can't remember' responses for all questions.

It is assumed that no bias was introduced by the way patients who did not respond to the whole survey, or did not respond to specific questions, were handled. This is because it is also assumed that these patients did so randomly and therefore any missing responses do not relate to their experience of care.

For some questions, the results from several responses were combined to form a 'derived measure'. For information about how these measures were developed, please see Appendix 3.

Comparing weighted and unweighted patient characteristics

One of the aims of sample weights is to ensure that after weighting, the characteristics of the respondents closely reflect the characteristics of the eligible population.

Table 1 shows the demographic characteristics of respondents against the eligible population. The four columns denote the:

1. percentage of eligible population – the sampling frame from which the sample was drawn
2. percentage of sample mailed – the percentage of eligible patients in each subgroup provided by SIA to the survey vendor for mailing
3. percentage of respondents (unweighted) – the respondents to the survey, not adjusted for unequal sampling
4. percentage of respondents (weighted) – the respondents to the survey, adjusted by weighting to be representative of the eligible population.

Table 1 Demographic characteristics of eligible population and respondents, Virtual Care Survey 2023

Demographic variable	Sub-group	% of eligible population	% of sample mailed	% of respondents (unweighted)	% of respondents (weighted)
Rurality of patient residence	Urban	67	60	61	67
	Rural	33	40	39	33
Age group	18–49 years	42	34	18	42
	50–64 years	19	27	32	19
	65+ years	39	38	50	39
Sex [†]	Male	40	41	45	39
	Female	60	59	55	61

[†]Information on sex is drawn from administrative data.

Statistical software

SAS software version 9.4 was used for: all statistical analyses and rurality of patient residence; virtual care service type based on administrative data (telephone or video); and age group. These were included as strata variables.

Reporting

Confidentiality and suppression rules

BHI does not receive any confidential patient information and only publishes aggregated data and statistics. Any question must have a minimum of 30 respondents at the reporting level (i.e. NSW) for the results to be reported. This ensures there are enough respondents for the calculation of reliable estimates and also ensures the protection of each patient's confidentiality and privacy.

Interpret with caution

All data collected using surveys are subject to sampling error (i.e. the difference between results based on a sample of a population, and the results if all people who received care had been surveyed). The 95% confidence interval of the average is expected to contain the true result 19 times out of 20.

Where the confidence interval was wider than 20 percentage points, results for individual questions are noted with a '*' to indicate 'interpret with caution'. In addition, percentages of 0 or 100, which do not have confidence intervals, are also noted as 'interpret with caution' where the number of respondents was fewer than 200.

Reporting by population groups

In addition to reporting the results for all respondents, BHI also reports the results by specific groups, as follows:

- age group: '18–34 years', '35–54 years', '55–74 years', '75+ years'
- virtual care type – 'online, with video', 'telephone/online, audio only'
- number of virtual care appointments with a hospital outpatient clinic or GP in the past 12 months – '1 to 2', '3 to 5', 'more than 5'
- had seen health professional(s) before, or appointment was with regular GP – 'yes', 'no'
- rurality of patient residence – 'urban', 'rural'
- longstanding health condition – 'yes', 'no'
- language spoken at home – 'English', 'other language'

Patient residence is classified as 'urban' and 'rural' using the Accessibility and Remoteness Index of Australia (ARIA+), the Australian Bureau of Statistics (ABS) measure of remoteness and patient postcode.

ARIA+ is the standard ABS measure of remoteness. For more information, see abs.gov.au/statistics/statistical-geography/remoteness-structure

Appendix 1

Survey response summary

Table 2 Number of surveys mailed, responses, response rates, by stratum of sampling and overall, Virtual Care Survey 2023

Virtual care mode	Rurality of patient residence	Age	Population	Mailings	Responses	Unweighted response rate (%)	Weight
Telephone	Rural	18–49 years	5,184	2,199	69	3.1	75
		50–64 years	2,987	2,396	219	9.1	14
		65+ years	6,877	3,368	350	10.4	20
	Urban	18–49 years	12,260	2,195	82	3.7	150
		50–64 years	5,067	2,943	265	9.0	19
		65+ years	11,173	4,486	425	9.5	26
Video	Rural	18–49 years	966	966	39	4.0	25
		50–64 years	548	548	80	14.6	7
		65+ years	631	631	133	21.1	5
	Urban	18–49 years	3,318	3,318	217	6.5	15
		50–64 years	1,066	1,066	174	16.3	6
		65+ years	1,271	1,271	248	19.5	5
Total			51,348	25,387	2,301	9.1	N/A

Note: Patients who had telephone appointments were sampled in September only, while patients who had video appointments were sampled in both August and September.

Appendix 2

Rates of missing or ‘Don’t know’/‘can’t remember’ responses

Table 3 Unweighted percentage of missing and ‘Don’t know’/‘can’t remember’ responses, by question, Virtual Care Survey 2023

Number	Question	Missing %	‘Don’t know’/‘can’t remember’ %	Missing + ‘Don’t know’/‘can’t remember’ %*
1	What was the purpose of your most recent virtual care appointment with a hospital outpatient clinic?	1.74		1.74
2	Did the appointment time suit you?	0.87		0.87
3	Who did you see during this appointment?	2.56		2.56
4	Had you seen the health professional(s) before, either in person or via telephone or video?	1.17	5.00	6.17
5	How did you access your most recent virtual care appointment?	1.09		1.09
6	Did you experience any problems with the connection or technology during this appointment?	1.52		1.52
7	Did you receive technical support from staff to help you participate in your appointment?	1.83	5.69	7.52
8	Was the health professional(s) adequately prepared for your appointment?	1.69		1.69
9	Were you adequately prepared for this appointment?	1.43		1.43
10	Thinking about the care and treatment at your most recent virtual care appointment, did the health professional(s) explain things in a way you could understand?	1.65		1.65
11	During your appointment, how much information about your condition or treatment was given to you?	1.78		1.78
12	Were you involved, as much as you wanted to be, in decisions about your care and treatment?	1.65		1.65
13	Did the health professional(s) listen carefully to any views or concerns you had?	1.43		1.43
14	Did you have confidence and trust in the health professional(s) treating you?	1.48		1.48
15	Was the health professional(s) kind and caring towards you?	1.43		1.43

Number	Question	Missing %	'Don't know'/'can't remember' %	Missing + 'Don't know'/'can't remember' %*
16	Were you treated with respect and dignity during your appointment?	1.48		1.48
17	During your appointment, were you given enough information about how to manage your care at home?	1.39		1.39
18	Were you told who to contact if you were worried about your condition or treatment after your appointment?	1.56		1.56
19	After your appointment, were the health professional(s) you saw in your community (such as your GP) up to date about the virtual care you received?	1.56		1.56
20	How many virtual care appointments have you had with a hospital outpatient clinic in the past 12 months?	2.17	9.47	11.65
21	Overall, how would you rate the virtual care you received?	1.69		1.69
22	Overall, how would you rate the health professionals who treated you?	1.65		1.65
23	How would you rate how well the health professionals worked together as a team?	1.69		1.69
24	Did you ever receive contradictory information about your condition or treatment from the health professionals?	1.69		1.69
25	How well organised was the care you received?	1.78		1.78
26	Did the care and treatment received through virtual care help you?	1.74		1.74
27	Compared with in-person appointments, were your virtual care experiences...?	2.00		2.00
28	If given the choice, would you use virtual care again?	1.56	3.78	5.35
29	Thinking about your experiences of virtual care, what have been the benefits for you?	2.43		2.43
30	Thinking about your experiences of virtual care, what have been the challenges for you?	4.87		4.87
31	In the past 12 months, how many in-person appointments have you had with a general practitioner (GP) for your own health?	0.74	3.30	4.04
32	In the past 12 months, how many virtual care appointments have you had with a GP for your own health?	0.78	3.35	4.13

Number	Question	Missing %	'Don't know'/'can't remember' %	Missing + 'Don't know'/'can't remember' %*
33	What was the purpose of your most recent virtual care appointment with a GP?	0.88		0.88
34	Was this appointment with your regular GP?	0.48	1.97	2.44
35	How did you access your most recent virtual care appointment with the GP?	0.88		0.88
36	Overall, how would you rate the virtual care you received from GPs in the past 12 months?	0.95		0.95
37	Did the care and treatment received from GPs through virtual care help you?	1.09		1.09
38	Compared with in-person appointments, were your virtual care experiences with GPs...?	1.22		1.22
39	If given the choice, would you use virtual care with GPs again?	0.88	2.85	3.73
40	Did the opportunity to use virtual care help ensure that your care was well coordinated between the GP and the hospital outpatient clinic?	1.22	6.38	7.60
41	Thinking about your experiences of virtual care with GPs, what have been the benefits for you?	1.56		1.56
42	Thinking about your experiences of virtual care with GPs, what have been the challenges for you?	3.46		3.46
43	What year were you born?	1.65		1.65
44	How do you describe your gender?	0.87		0.87
45	What is the highest level of education you have completed?	1.69		1.69
46	Are you of Aboriginal origin, Torres Strait Islander origin, or both?	1.96		1.96
47	Which language do you mainly speak at home?	1.04		1.04
48	Which, if any, of the following longstanding health conditions do you have (including age-related conditions)?	1.96		1.96
49	Does this condition(s) cause you difficulties with your day-to-day activities?	0.07		0.07
50	Do you give permission for the Bureau of Health Information to link your answers from this survey to health records related to you (the patient)?	0.83		0.83

*Percentages for this column may not equal the sum of the 'Missing (%)' and 'Don't know (%)' columns because they were calculated using unrounded figures.

Appendix 3

Derived measures

Definition

Derived measures are those for which results are calculated indirectly from respondents' answers to a survey question. These tend to be from questions that contain a 'not applicable' type response option and are used to gather information about patients' needs.

Table 4 Derived measures for Virtual Care Survey 2023

Derived measure	Original question	Derived measure categories	Original question responses
Accessed most recent virtual care appointment with audio only	Q5. How did you access your most recent virtual care appointment?	Online, with video	Online, with video (e.g. Skype, Zoom. On any device including computer, tablet or smartphone)
		Telephone/online, audio only	Telephone, audio only (mobile or landline)
			Online, audio only (on any device including computer, tablet or smartphone)
Virtual care had a benefit	Q29. Thinking about your experiences of virtual care, what have been the benefits for you?	Had no benefit	I had no benefits
		Had benefit	I thought it was convenient
			I saved time
			I saved money
			I felt that I received the right care at the right time
			I felt that I received safe, high quality care
			I felt at ease being in my own home/ surroundings
			I didn't have to take as much time off work as I would have with an in-person appointment
			I didn't need to arrange care for children or dependants
			I was able to have others join the appointment (my family, other members of my healthcare team)
I thought it benefitted me in other ways			

Derived measure	Original question	Derived measure categories	Original question responses
Virtual care presented challenges	Q30. Thinking about your experiences of virtual care, what have been the challenges for you?	Had challenges	I would have been more comfortable talking in person
			I had to wait too long for the appointment to start
			I found the process confusing/not well organised
			I had concerns about the quality of the care and treatment I received
			I had concerns about privacy/the security of my health information
			I had issues with the technology
			The health professional(s) had issues with the technology
			I had issues with the quality of the connection
		I had other challenges	
		Didn't have challenges	I had no challenges
Accessed most recent GP virtual care appointment with audio only	Q35. How did you access your most recent virtual care appointment with the GP?	Telephone/online, audio only	Telephone, audio only (mobile or landline)
		Online, with video	Online, audio only (on any device including computer, tablet or smartphone)
			Online, with video (e.g. Skype, Zoom. On any device including computer, tablet or smartphone)

Derived measure	Original question	Derived measure categories	Original question responses
Virtual care with GPs had a benefit	Q41. Thinking about your experiences of virtual care with GPs, what have been the benefits for you?	Had benefit	I thought it was convenient
			I saved time
			I saved money
			I felt that I received the right care at the right time
			I felt that I received safe, high quality care
			I felt at ease being in my own home/ surroundings
			I didn't have to take as much time off work as I would have with an in-person appointment
			I didn't need to arrange care for children or dependants
			I was able to have others join the appointment (my family, other members of my healthcare team)
		I thought it benefitted me in other ways	
		Had no benefit	I had no benefits
Virtual care with GPs presented challenges	Q42. Thinking about your experiences of virtual care with GPs, what have been the challenges for you?	Had challenges	I would have been more comfortable talking in person
			I had to wait too long for the appointment to start
			I found the process confusing/not well organised
			I had concerns about the quality of the care and treatment I received
			I had concerns about privacy/the security of my health information
			I had issues with the technology
			The health professional(s) had issues with the technology
			I had issues with the quality of the connection
			I had other challenges

Derived measure	Original question	Derived measure categories	Original question responses
Has longstanding health condition	Q48. Which, if any, of the following longstanding health conditions do you have (including age-related conditions)?	Has longstanding health condition	Deafness or severe hearing impairment
			Blindness or severe vision impairment
			A longstanding illness (e.g. cancer, HIV, diabetes, chronic heart disease)
			A longstanding physical condition (e.g. arthritis, spinal injury, multiple sclerosis)
			An intellectual disability
			A mental health condition (e.g. depression)
			A neurological condition (e.g. Alzheimer's, Parkinson's)
		Doesn't have longstanding health condition	None of these
			Missing