Rural Hospital Emergency Care Patient Survey 2023

Technical Supplement

December 2023

bureau of health information

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Please note there is the potential for minor revisions of data in this report.
Please check the online version at bhi.nsw.gov.au for any amendments or errata.

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Introduction

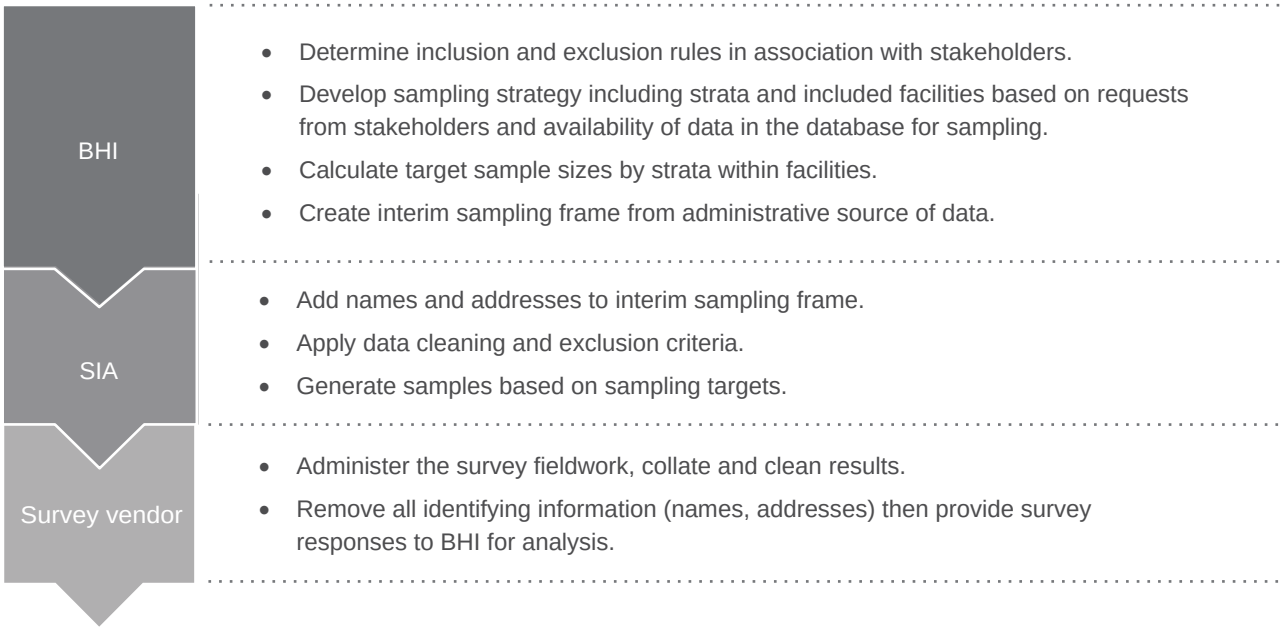
This technical supplement outlines the sampling methodology, data management and analysis of the results of the Rural Hospital Emergency Care Patient Survey 2023, which was conducted across emergency care centres in small rural hospitals. Further supporting information is available in historical Rural Hospital Emergency Care Patient Survey technical supplements, available at bhi.nsw.gov.au

The New South Wales (NSW) Patient Survey Program began sampling patients in NSW public health facilities from 2007. Up to mid-2012, the program was coordinated by the NSW Ministry of Health (Ministry). Responsibility was transferred from the Ministry to the Bureau of Health Information (BHI) in 2012. 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 sample design and data collection phases for patient survey projects.

Figure 1 Organisational responsibilities in sample design and data collection



Rural Hospital Emergency Care Patient Survey

The Rural Hospital Emergency Care Patient Survey 2023 was undertaken as part of the NSW Patient Survey Program. The survey was designed in collaboration with rural local health districts (LHDs) and the Ministry of Health's Regional Health Division.

The 2023 survey sampled patients who attended emergency departments (EDs) in large and small rural public hospitals between January and March 2023. The survey comprised the Emergency Department Patient Survey (EDPS) 2022–23 questionnaire and a 17-question module (rural focus questions) which contained questions of particular relevance to patients in rural areas.

The report *Patients' experiences of emergency care in small rural hospitals in 2023* released in December 2023 is the result of analyses of responses from patients who attended small rural hospitals. Results for respondents who attended EDs in large rural hospitals will be included in a forthcoming report.

The inaugural Small and Rural Emergency Department Patient Survey 2015–16 included people who attended hospitals from November 2015 to February 2016. In 2019, this was changed to sample patients who attended small rural hospitals from mid-January to mid-April 2019 and the survey name was updated to the Rural Hospital Emergency Care Patient Survey.

Content changes between the 2021–22 and 2022–23 EDPS questionnaires, including the addition of the rural module, are available in a development report on BHI's website at bhi.nsw.gov.au

Inclusion and exclusion criteria for patients

The survey questionnaire was sent to eligible patients who visited an emergency care centre in a small rural public hospital between January and March 2023. Where patients had multiple visits within the sampling month, their most recent attendance was retained for sampling.

In Phase 1, screening with a series of exclusion criteria was applied to consider a range of factors including the potentially high vulnerability of patient groups and/or patients with particularly sensitive reasons for seeking emergency care, certain patients' ability to answer questions about their experiences and the relevance of the survey questions to particular patient groups.

Patients were excluded from the target population if they had:

- died on arrival or died in the ED (mode of separation of 03 or 08, respectively)
- not waited for treatment or left before treatment (mode of separation of 06 and 07, respectively)
- a sensitive diagnosis or were likely to be visiting ED only for a COVID-19 test for their last ED visit in the sampling period. These criteria are summarised in Table 1.

Table 1 Exclusion criteria for COVID-19 or sensitive diagnoses

Exclusion group	Identification
Patients likely to be visiting an ED only for a COVID-19 test (must also be in triage category 5 and discharged from ED)	• SNOMED-CT-AU codes: 840539006, 840544004 or 840546002 or ICD-10-AM code: U07.1, U07.2 or U06.0 • 'presenting problem'* field includes the text 'CORONA' or 'COVID'.
Patients who have intentionally self-harmed	• T14.9 plus SNOMED-CT codes 403583006, 440144004, 276853009, 284744004 (deliberate self-cutting/injury due to suicide attempt/self-inflicted injury/burning self) • Z04.9 plus SNOMED-CT code 248062006 (deliberate self-harm) • T65.9 plus SNOMED-CT codes 410061008, 86849004 (suicidal deliberate poisoning) • T59.9 plus SNOMED-CT codes 418409002, 219125007, 57335002 (suicide and self-inflicted poisoning by gases in domestic use/poisoning of undetermined intent by corrosive, acid or caustic alkali) • T75.4 plus SNOMED-CT codes 219359001, 224946001 (injury of unknown intent by electrocution/self-electrocution).
Patients who have expressed suicidal ideation	ICD-10 R45.81
Patients recorded with maltreatment syndromes/abuse in any diagnosis field	ICD-10 T74
Patients who experienced a stillbirth	ICD-10 P96.9
Patients who experienced pregnancy with an abortive outcome	ICD-10 O00-O08
Patients recorded as receiving contraceptive management	ICD-10 Z30, ICD-10 T83.9, ICD-10 O26.9
Patients admitted for a termination of pregnancy procedure	ICD-10 O75.9, ICD-10 P96.9

* The 'presenting problem' is the clinical interpretation of the problem or concern identified by the triage clinician as the main reason for the person's presentation to the ED.

The patient was excluded for the conditions in Table 1 if the code was identified in either of the two diagnosis fields: SNOMED-CT were ‘discharge’ or ‘admission’ diagnosis (ed_diagnosis_type = 'D' or 'P', respectively), ICD-10-AM were ‘principal’ or ‘additional diagnosis’* (ed_diagnosis_type = 'P' or '1' respectively). SNOMED-CT codes were mapped to the ICD-10 equivalent using a look-up table that is created by the Independent Hospital Pricing Authority (IHPA). The mapping of SNOMED-CT to ICD-10 for intentional self-harm was too broad. For instance, only one of the 86 SNOMED-CT codes mapped to Z04.9 (deliberate self-harm), related to deliberate self-harm. Therefore, patients excluded for Intentional self-harm based on the ICD-10 code, who attended a hospital that used SNOMED-CT for coding, were only excluded if they had the specific SNOMED-CT codes.

Records with incomplete diagnosis coding were not excluded because this may impact the ability to meet the sample size required to ensure robust results are available at the hospital level.

The sampling frame then passed through a second phase of screening to exclude patients who:

- had an invalid address (including those with addresses listed as hotels, motels, nursing homes, community services, Mathew Talbot Hostel, 100 William Street, army quarters, jails and unknown)
- 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 Rural Hospital Emergency Care Patient Survey 2023.

* ‘Additional diagnosis’ refers to an additional diagnosis or condition which either: existed at the time the person presented to the ED; OR arose while the person was in ED; OR is expected to affect the person’s treatment care plan and/or length of stay in the ED.

Inclusion and exclusion criteria for small rural hospitals

NSW public hospitals were included if the hospitals had a peer group classification of either:

- D1a: Community with surgery
- D1b: Community without surgery
- D2: Community non-acute
- F3: Multi-purpose service
- F8: Other ungrouped.

In 2023, 81 small rural hospitals were included in the Rural Hospital Emergency Care Patient Survey compared with 65 in 2019. In 2023 an additional 17 hospitals were included from Far West LHD (four additional hospitals), Hunter New England LHD (three), Murrumbidgee LHD (four), Northern NSW LHD (two) and Western NSW LHD (four). See the supplementary data tables for more information.

Sensitivity analyses were conducted to assess the impact of changes in the number of hospitals included in the survey and the number of survey respondents in relation to shifts over time in an LHD's performance. The shift on hospitals surveyed has no influence on most LHD results with minor impacts on LHD results for Northern NSW and Western NSW LHDs.

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 hospitals and demographic characteristics.

A stratified sample design was applied, with each hospital defined as a stratum.

Simple random sampling without replacement was applied within each stratum to create a final sample of patients who were mailed a survey. The sampling frame for the Rural Hospital Emergency Care Patient Survey 2023 was based on data from NSW Health's Health Information Exchange (HIE) Emergency Department Data Collection (EDDC). Targets of monthly sampling (sample size) for each facility were calculated based on data from the previous months with expected responses set at 125 for the sampling period. For many small hospitals where the eligible population was less than this target, all eligible patients would receive the questionnaire (census sampling).

The number of surveys mailed, the number of responses, response rates and survey design effects by hospital, LHD and overall are provided in Appendix 1.

Data collection and analysis

Data collection

Selected patients were invited to complete the questionnaire by either returning the hard-copy questionnaire or by submitting an online response. Hard-copy questionnaires were scanned for fixed response options and responses in free-text fields were entered manually. 68% of respondents completed the hard-copy questionnaire and 32% submitted online.

A first reminder letter was sent to all patients after the initial survey pack, with a final reminder letter sent in the subsequent month if no response was received. This aims to meet or exceed international best practice response rates, resulting in optimal precision in estimates.

The resultant survey data were anonymised and underwent quality assurance checks before secure transfer to BHI servers, which are password-protected with access by authorised staff only.

Response rate and completion of questionnaires

The response rate is the percentage of people sampled who completed and returned or submitted their responses. The number of surveys mailed, the number of responses, response rates and design effects by hospital, LHD 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, 50 of the 60 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 and LHD levels, weights also ensured that the different sampling proportions used at the hospital level were accounted for, so that LHD results were not unduly influenced by small facilities that had larger sampling proportions.

Weights were calculated for all hospitals once data were available using the following equation:

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

Where:

N_i = total number of patients eligible for the survey in the ith hospital.

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

Different hospitals have different mixes of clinical services and demographic distribution, but due to small numbers, it was not possible to adjust weights to account for these differences. This should be taken into account when comparing results from different facilities. Supplementary data tables provide details regarding social and demographic differences in patients seen at different hospitals.

The weights were generated through the generalised regression weighting macro (GREGWT), a survey-specific SAS program developed by the Australian Bureau of Statistics (ABS) to assist with weighting of complex survey data. It uses iterative proportional fitting to ensure that the weights at the margins equal the population totals even though it is often impossible for the weights to equal the population at the individual cell level (i.e., within each hospital).

The following benchmark was applied:

- Hospital.

After the first cycle through the GREGWT macro, a process was undertaken that identified strata with low numbers of responses and high weights. Following further aggregation, the GREGWT macro was run again, creating the final weights. Quality assessment included looking at the agreement between the eligible population and sum of weights at the hospital-stratum- level, the overall distribution of weights (to avoid outliers), number of hospitals with a design effect greater than 2, and the ratio of maximum to median weight at the hospital level. The maximum weight was 21.

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 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 is 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 these patients did so randomly and therefore any missing responses do not relate to the 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 2 shows demographic characteristics of respondents against the eligible population. The four columns denote:

1. Percentage of target population: the patient population prior to the phase 2 screening process
2. Percentage of eligible population: the final sampling frame from which the sample was drawn. Limited demographic variables are available at this level
3. Percentage of respondents (unweighted) – respondents to the survey, not adjusted for unequal sampling
4. Percentage of respondents (weighted) – respondents to the survey, adjusted by weighting to be representative of the eligible population.

Table 2 Demographic characteristics of patient population and respondents, Rural Hospital Emergency Care Patient Survey 2023

Demographic variable	Sub-group	% of target population	% of eligible population	% of respondents (unweighted)	% of respondents (weighted)
LHD	Far West	1	1	1	1
	Hunter New England	25	27	26	27
	Mid North Coast	3	3	4	3
	Murrumbidgee	29	29	33	29
	Northern NSW	4	4	4	4
	Southern NSW	6	7	8	7
	Western NSW	31	30	24	30
Peer group	D	63	65	60	65
	F	37	35	40	35
Age stratum	0–18 years	21	23	12	12
	18–49 years	33	33	12	13
	50+ years	46	44	76	75
Stay type	Admitted emergency	7	7	10	10
	Non-admitted emergency	93	93	90	90
Aboriginal status	Not Aboriginal	84	86	96	95
	Aboriginal and/or Torres Strait Islander	16	14	4	5
Sex	Male	50	50	48	48
	Female	50	50	52	52

* Information on sex is drawn from administrative data.

Standardised comparisons between hospitals, LHDs and the NSW result

Overview

In 2023, BHI has introduced a new statistical approach to support fairer assessment of hospital performance based on patient experience measures and to improve precision when flagging hospital performance as significantly higher (green) or significantly lower (red) than the NSW result in the Survey results report and supplementary data tables. For comparison purposes, a version of the previous year's supplementary data tables (Rural Hospital Emergency Care Patient Survey 2019) showing how results flag as green or red under the previous and the new methodology for standardised comparisons is available from BHI on request.

When looking at performance over time, the focus should be on the changes in percentage results rather than whether those results are flagged as green or red, noting that year-on-year differences may not reflect clinically or statistically significant differences and that changes in a hospital's patient mix may contribute to changes in results.

Some patient groups tend to respond more positively to surveys. This means that hospitals with higher proportions of patients with these socio-demographic characteristics tend to have higher patient experience ratings and vice versa. Before identifying a hospital's result as significantly higher or lower than NSW, the statistical model accounts for the characteristics of its patients (age and gender). Therefore, green and red flags are more likely to reflect actual differences in experiences rather than a difference in the socio-demographic mix of patients.

In 2023, for the Rural Hospital Emergency Care Patient Survey results, this approach was applied to hospital results and LHD results.

The statistical model

Across survey information products, BHI reports on the weighted percentage of patients selecting a particular survey response option (i.e. the actual result). These percentages do not change when standardised comparisons are applied (i.e. green and red flags are overlaid on the actual results).

This new statistical approach, introduced by BHI in 2023, involves two stages. BHI already uses similar statistical methods to assess hospital performance in its mortality and readmissions reporting. This two-stage process enables the assignment of green and red flags to outlier hospitals/LHDs after consideration is given to each hospital's/LHD's actual result, socio-demographic mix of patients, sample size, and the NSW result. Outlier flags should be used to compare a hospital's performance to the NSW result each year, recognising that the NSW result also changes each year.

Stage 1 – Calculating risk-adjusted results for each hospital/LHD

This stage involves calculating risk-adjusted results by accounting for the socio-demographic characteristics of patients at each hospital/LHD, specifically those that can influence self-reported patient experience ratings (age and gender). The risk-adjusted percentages are not reported but used to determine whether a green or red flag is applied to the actual result. Selection of the patient characteristics used in these calculations is based on a thorough study conducted by BHI in 2018.

The statistical program used to conduct the analysis in stage 1 is PROC SURVEYLOGISTIC. The dependent variable used in the statistical model is the binary version of a given performance question, usually based on the percentage of patients who selected the most positive response option. The model derives a predicted probability of respondents selecting the most positive response option based on the socio-demographic mix of the respective hospital's/LHD's patients. The predicted probabilities are multiplied by the survey weights to give a predicted number of patients in the eligible population that would have the same response (i.e., the expected result).

The risk-adjusted ratio (aR) is calculated by taking the ratio of the weighted number of respondents who selected the most positive response option (numerator or actual result) to the number of respondents in the population predicted to also respond the same according to the model (denominator or expected result).

The risk-adjusted percentage is calculated for each hospital/LHD by scaling to the question-specific NSW result using the following formula:

$$Adjusted\ percentage = aR \times weighted\ NSW\ percentage$$

The adjusted percentage can be interpreted as how the hospital/LHD would perform if the socio-demographic mix was the same as the reference population (NSW results). This adjusted percentage can therefore be used to report fairer comparisons of self-reported experiences between hospitals/LHDs and the NSW results, when it is compared to the NSW results after considering the effective size of each hospital/LHD.

Stage 2 – Comparing each hospital/LHD's risk-adjusted result with the NSW result

This stage involves comparing a hospital/LHD's risk-adjusted result with the NSW result after considering the effective sample size for each hospital/LHD.

To identify outlier hospital/LHD results, funnel plots with control limits at a 99% confidence level were created for self-reported experience questions to compare each hospital/LHD's risk-adjusted result with the NSW result. This process uses the exact binomial method described by Spiegelhalter[1] and the effective sample size.

Effective sample size is the number of respondents for each hospital divided by the hospital-level design effect. Therefore, the control limits take into account the sampling method. Hospitals/LHDs that fall outside the control limits are considered outliers and flagged as significantly higher or lower than the NSW result, after taking into account differences in the socio-demographic mix of a hospital's patients. 99% control limits were used to reduce the likelihood of identifying outliers due to chance.

Standardised comparisons are not applied:

- when results are flagged as 'interpret with caution' (see page 12), due to reduced precision of the actual result.
- for all questions regarding problems, because patients who have more complex conditions are more likely to experience problems or clinical complications, and comparisons have not been adjusted for patient complexity.

Statistical software

SAS software version 9.4 was used for all statistical analyses and facility was included as a strata variable.

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 (hospital, LHD or NSW) for results to be reported. This ensures there are enough respondents for reliable estimates to be calculated, and that patient confidentiality and privacy are protected.

When the number of respondents for a hospital or LHD was fewer than 30, results were suppressed. The suppressed results still contribute to NSW-level results and/or LHD level results.

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 target population, and the results if all people who received care were 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.

Where the number of respondents was between 30 and 49 with a response rate at or above 20%, or the number of respondents more than 49 with a response rate less than 20%, results are publicly reported and an 'interpret with caution' note appended to the hospital to indicate an uncertainty about the representativeness of the result.

Reporting by population groups

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

- age group
- gender
- education level
- language spoken at home
- longstanding health condition: 'had condition/s', 'none reported'
- Aboriginality.

The above results, where they satisfy BHI's suppression rules, are available on the BHI Data Portal at bhi.nsw.gov.au/data-portal

Key findings selection in the survey results report

Key findings for selected patient experience measures are summarised in the Survey results report. These findings highlight where there was significant variation in hospital results when compared with NSW, where hospital results improved or declined compared with the previous survey (2019), NSW trends, and important measures of experience based on evidence and stakeholder input. This includes identifying measures:

- of patient experience where there was variation in hospital performance when compared with the NSW result (i.e. hospital results were significantly higher or lower than the NSW result after adjusting for patient characteristics)
- of patient experience where there was large improvement or decline across hospitals when compared with the previous survey's (2019) results
- where there was a low or high percentage of patients selecting the most positive response option
- of patient experience identified to be of particular importance based on evidence and stakeholder input.

Appendix 1

Survey response summary

Table 3 Number of surveys mailed, responses, response rates and design effects (DEFF) by LHD and overall, Rural Hospital Emergency Care Patient Survey 2023

NSW/LHD	LHD	Surveys mailed	Responses	Response rate (%)	DEFF
NSW		25,195	5,107	20	.
LHD	Far West	373	33	9	1.0
	Hunter New England	5,748	1,338	23	1.5
	Murrumbidgee	7,487	1,681	22	1.1
	Mid North Coast	806	199	25	1.0
	Northern NSW	1,061	222	21	1.0
	Southern NSW	1,648	418	25	1.1
	Western NSW	8,072	1,216	15	1.3

Table 4 Number of surveys mailed, responses, response rates and design effects (DEFF) by hospital, Rural Hospital Emergency Care Patient Survey 2023

LHD	Hospital	Surveys mailed	Responses	Response rate (%)	DEFF
FWLHD	Menindee Health Service	107	8	7	1.0
	Balranald Multipurpose Service	98	13	13	1.0
	Ivanhoe Health Service	41	1	2	.
	Tibooburra Health Service	5	1	20	.
	Wilcannia Multipurpose Service	98	4	4	1.0
	White Cliffs Health Service	24	6	25	1.0
HNELHD	Barraba Multipurpose Service	235	50	21	1.0
	Bingara Multipurpose Service	248	50	20	1.0
	John Prior Multipurpose Service - Boggabri	129	26	20	1.0
	Glen Innes Hospital	567	116	20	1.0
	Guyra Multipurpose Service	276	65	24	1.0
	Manilla Multipurpose Service	371	94	25	1.0
	Tenterfield Hospital	514	136	26	1.0
	Quirindi Hospital	583	107	18	1.0
	Walcha Multipurpose Service	180	59	33	1.0
	Warialda Multipurpose Service	190	47	25	1.0
	Wee Waa Hospital	203	30	15	1.0
	Gloucester Soldiers Memorial Hospital	461	114	25	1.0
	Dungog Hospital	336	94	28	1.0
	Merriwa Multipurpose Service	145	36	25	1.0
	Scott Memorial Hospital - Scone	566	111	20	1.0
	Wilson Memorial Hospital - Murrurindi	178	49	28	1.0
	Tomaree Hospital	566	154	27	1.0

LHD	Hospital	Surveys mailed	Responses	Response rate (%)	DEFF
MLHD	Lake Cargelligo Multipurpose Service	333	51	15	1.0
	West Wyalong Health Service	429	83	19	1.0
	Barham Multipurpose Service	263	55	21	1.0
	Berrigan Multipurpose Service	87	29	33	1.0
	Culcairn Multipurpose Service	134	29	22	1.0
	Corowa Health Service	566	147	26	1.0
	Finley Hospital	477	126	26	1.0
	Holbrook Multipurpose Service	174	56	32	1.0
	Tocumwal Multipurpose Service	146	51	35	1.0
	Tumbarumba Multipurpose Service	242	50	21	1.0
	Boorowa Multipurpose Service	156	41	26	1.0
	Murrumburrah-Harden Health Service	211	40	19	1.0
	Gundagai Multipurpose Service	347	76	22	1.0
	Hay Health Service	301	44	15	1.0
	Hillston Multipurpose Service	184	21	11	1.0
	Junee Multipurpose Service	155	33	21	1.0
	Coolamon-Ganmain Multipurpose Service	295	69	23	1.0
	Leeton Health Service	566	105	19	1.0
	Lockhart Multipurpose Service	118	33	28	1.0
	Narrandera Health Service	516	102	20	1.0
	Temora Health Service	654	164	25	1.0
	Tumut Health Service	567	115	20	1.0
	Cootamundra Health Service	566	161	28	1.0
MNCLHD	Bellinger River District Hospital	567	142	25	1.0
	Dorrigo Health Campus	239	57	24	1.0
NNSWLHD	Bonalbo Multipurpose Service	119	25	21	1.0
	Kyogle Multipurpose Service	565	130	23	1.0
	Nimbin Multipurpose Service	318	58	18	1.0
	Urbenville Multipurpose Service	59	9	15	1.0

LHD	Hospital	Surveys mailed	Responses	Response rate (%)	DEFF
SNSWLHD	Bombala Multipurpose Service	240	56	23	1.0
	Braidwood Multipurpose Service	299	76	25	1.0
	Crookwell District Hospital	544	153	28	1.0
	Yass District Hospital	565	133	24	1.0
WNSWLHD	Bourke Multipurpose Service	400	28	7	1.0
	Brewarrina Multipurpose Service	162	12	7	1.0
	Cobar Health Service	421	59	14	1.0
	Coolah Multipurpose Service	178	32	18	1.0
	Coonabarabran Health Service	567	116	20	1.0
	Baradine Multipurpose Service	82	16	20	1.0
	Coonamble Multipurpose Service	468	42	9	1.0
	Dunedoo Multipurpose Service	156	34	22	1.0
	Gilgandra Multipurpose Service	513	93	18	1.0
	Gulgong Multipurpose Service	345	66	19	1.0
	Narromine Health Service	384	75	20	1.0
	Nyngan Health Service	258	35	14	1.0
	Walgett Multipurpose Service	365	14	4	1.0
	Warren Multipurpose Service	355	46	13	1.0
	Wellington Health Service	567	82	14	1.0
	Lightning Ridge Multipurpose Service	349	38	11	1.0
	Blayney Multipurpose Service	200	46	23	1.0
	Canowindra Soldiers Memorial Hospital	285	54	19	1.0
	Condobolin Health Service	441	46	10	1.0
	Grenfell Multipurpose Service	178	41	23	1.0
	Molong Multipurpose Service	178	45	25	1.0
	Oberon Multipurpose Service	298	56	19	1.0
	Parkes Hospital	567	77	14	1.0
	Peak Hill Multipurpose Service	97	10	10	1.0
	Rylstone Multipurpose Service	258	53	21	1.0

Appendix 2

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

Table 5 Unweighted percentage of missing and ‘Don’t know/Can’t remember’ responses, by question, Rural Hospital Emergency Care Patient Survey 2023

Question number	Question text	Missing (%)	Don't know/Can't remember' (%)	Missing + 'Don't know/Can't remember' (%)
1	Was the signposting directing you to the ED easy to follow?	1.4		1.4
2	Were the ED staff you met on your arrival polite and welcoming?	1.1	1	2.1
3	Did the ED staff give you enough information about what to expect during your visit?	0.9	3.1	4
4	Did the ED staff tell you how long you might have to wait for treatment?	1.4	5.2	6.6
5	While you were waiting to be treated, did the ED staff check on your condition?	2	2.4	4.4
6	Did the ED health professionals who treated you introduce themselves to you?	0.9	2.8	3.7
7	Did the ED health professionals explain things in a way you could understand?	1.2		1.2
8	Did you have enough time to discuss your health or medical problem with the ED health professionals?	1.2	1.9	3.1
9	During your ED visit, how much information about your condition or treatment was given to you?	1.4		1.4
10	Were you involved, as much as you wanted to be, in decisions about your care and treatment?	1.2		1.2
11	Did the ED health professionals listen carefully to any views or concerns you had?	1.4		1.4
12	If your family members or someone else close to you wanted to talk to the ED health professionals, did they get the opportunity to do so?	1.7	2.2	3.9
13	How would you rate how well the ED health professionals worked together as a team?	1.7		1.7
14	Did you have confidence and trust in the ED health professionals treating you?	1.3		1.3
15	Overall, how would you rate the ED health professionals who treated you?	1.4		1.4
16	Did you ever receive contradictory information about your condition or treatment from the ED health professionals?	2.2		2.2

Question number	Question text	Missing (%)	Don't know/Can't remember' (%)	Missing + 'Don't know/Can't remember' (%)
17	Were the ED health professionals kind and caring towards you?	1.2		1.2
18	Were you treated with respect and dignity while in the ED?	1.1		1.1
19	Were you given enough privacy during your visit to the ED?	1.2		1.2
20	Did the ED health professionals give you the support you needed to help with any worries or fears related to your care and treatment?	1.5		1.5
21	Were you ever in pain while in the ED?	2.2		2.2
22	Do you think the ED health professionals did everything they could to help manage your pain?	1		1
23	How clean was the treatment area in the ED?	1.7		1.7
24	While you were in the ED, did you feel threatened by other patients or visitors?	1.7		1.7
25	What happened at the end of your ED visit?	3		3
26	Did you feel involved in decisions about your discharge from the ED?	0.9		0.9
27	Thinking about when you left the ED, were you given enough information about how to manage your care at home?	1.2		1.2
28	Was your family and home situation taken into account when you were discharged?	1.3	3.1	4.4
29	Were you told who to contact if you were worried about your condition or treatment after you left the ED?	1.6	6.7	8.3
30	Were you told about what signs or symptoms, related to your illness or treatment, to watch out for after you went home?	2.1		2.1
31	Did you receive a document summarising your hospital care (e.g. a digital or physical copy of the letter to your GP or a discharge summary)?	2.6	16.1	18.7
32	Overall, how would you rate the care you received while in the ED?	1.7		1.7
33	If asked about your experience in the ED by friends and family, how would you respond?	1.8		1.8
34	Did the care and treatment received in the ED help you?	1.9		1.9
35	Did you need to return to this or any other ED within 48 hours of discharge?	2.1	1.1	3.2
36	What was your main form of transport to the clinic?	2.3		2.3
37	How far, roughly, did you travel to the ED you visited?	2.4		2.4
38	Was this the nearest ED?	1.7		1.7

Question number	Question text	Missing (%)	Don't know/Can't remember' (%)	Missing + 'Don't know/Can't remember' (%)
39	How difficult was it to get to the ED?	2		2
40	Do you think you received safe, high-quality care in the ED?	1.7		1.7
41	Were you transferred from this ED to another hospital for further treatment?	3		3
42	Were you given enough information about your transfer?	3.6		3.6
43	In what ways did the transfer affect you?	5		5
44	During your ED visit or soon after, did you experience any problem related to your care and treatment?	2.4		2.4
45	Was the impact of this problem…?	5.3		5.3
46	Were the health professionals open with you about this problem?	5.7		5.7
47	Were the health professionals responsive in addressing this problem?	6.5		6.5
48	Did you receive any follow-up care from a hospital specialist, general practitioner (GP) or other healthcare provider?	3.9		3.9
49	How did you access the follow-up care?	2.3		2.3
50	Was the follow-up care well coordinated between the health professionals involved?	2.4		2.4
51	Was your visit to the ED for a condition that, at the time, you thought could have been treated by a GP or other health professional?	4		4
52	Why didn’t you see a GP or other health professional about that condition?	7.1		7.1
53	What year were you born?	2.3		2.3
54	How do you describe your gender?	1.9		1.9
55	What is the highest level of education you have completed?	4.6		4.6
56	Which language do you mainly speak at home?	2		2
57	Are you of Aboriginal origin, Torres Strait Islander origin, or both?	3.1		3.1
58	Which, if any, of the following longstanding health conditions do you have (including age-related conditions)?	4.2		4.2
59	Does this condition(s) cause you difficulties with your day-to-day activities?	3.1		3.1
60	Do you give permission for BHI to link your answers from this survey to health records related to you (the patient)?	3		3

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.

Derived measures involve the grouping together of more than one response option to a question. The derived measure 'Quintile of disadvantage' is an exception to this rule. For more information on this, please refer to the Data Dictionary: Quintile of disadvantage on BHI's website at bhi.nsw.gov.au/__data/assets/pdf_file/0016/300616/Quintile_of_Disadvantage.pdf

Statistical methods

Results are expressed as the percentage of respondents who chose a specific response option or options for a question. The reported percentage is calculated as the numerator divided by the denominator (see definitions below). Results are weighted as described in this report.

Numerator

The number of survey respondents who selected a specific response option/s to a certain question, minus exclusions.

Denominator

The number of survey respondents who selected any of the response options to a certain question, minus exclusions.

Exclusions

For derived measures, the following are usually excluded:

- Response: 'Don't know/Can't remember' or similar non-committal response
- Response: invalid (i.e. respondent was meant to skip a question but did not)
- Response: missing (with the exception of questions that allow multiple responses or a 'none of these' option, for which the missing responses are combined to create a 'none reported' variable).

Interpretation of indicator

The higher the percentage, the more respondents fall into that response category.

The table below shows the questions and responses used in the construction of the derived measures.

Table 6 Derived measures for Rural Hospital Emergency Care Patient Survey 2023

Derived Measure	Question	Derived measure categories	Original question responses
Needed directions to the ED	Q1. Was the signposting directing you to the ED easy to follow?	Needed directions	Yes, definitely
			Yes, to some extent
			No
		Not applicable	Not applicable
Needed to wait for treatment	Q4. Did the ED staff tell you how long you might have to wait for treatment?	Needed to wait	Yes
			No
		Didn't need to wait	I didn't need to wait for treatment
Needed information about condition or treatment	Q9. During your ED visit, how much information about your condition or treatment was given to you?	Needed information	Not enough
			The right amount
			Too much
		Not applicable	Not applicable
Wanted or needed to be involved in decisions about care and treatment	Q10. Were you involved, as much as you wanted to be, in decisions about your care and treatment?	Wanted or needed involvement	Yes, definitely
			Yes, to some extent
			No
		Didn't want or need involvement	I didn't want or need to be involved
Had views or concerns	Q11. Did the ED health professionals listen carefully to any views or concerns you had?	Had views or concerns	Yes, definitely
			Yes, to some extent
			No
		Didn't have views or concerns	I didn't have any views or concerns
Family members or someone else close wanted to talk to the ED health professionals	Q12. If your family members or someone else close to you wanted to talk to the ED health professionals, did they get the opportunity to do so?	Wanted to talk to ED health professionals	Yes, definitely
			Yes, to some extent
			No
			Don't know/can't say
		Not applicable	Not applicable

Derived Measure	Question	Derived measure categories	Original question responses
Discharged from the ED at end of visit	Q25. What happened at the end of your ED visit?	Admitted or transferred	I was admitted to the same hospital
			I was transferred to a different hospital or healthcare facility
		Discharged	I went home or to stay with a friend, relative, or elsewhere
Wanted involvement in decisions about discharge	Q26. Did you feel involved in decisions about your discharge from the ED?	Wanted or needed involvement	Yes, definitely
			Yes, to some extent
			No
		Didn't want or need involvement	I didn't want or need to be involved
Needed information about how to manage care at home	Q27. Thinking about when you left the ED, were you given enough information about how to manage your care at home?	Needed information	Yes, definitely
			Yes, to some extent
			No
		Not applicable	Not applicable
Had family or home situation to consider upon discharge	Q28. Was your family and home situation taken into account when you were discharged?	Had situation to consider	Yes, definitely
			Yes, to some extent
			No
		Not applicable	Not applicable

References

1. Spiegelhalter DJ, Funnel plots for comparing institutional performance, Stat Med 2005, 24(8): 1185-202.