

Maternity Care Survey 2017

Technical Supplement
October 2018

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

The NSW Patient Survey Program

The New South Wales (NSW) Patient Survey Program began surveying patients in NSW public hospitals from 2007. From 2007 to mid-2012, the program was coordinated by the NSW Ministry of Health using questionnaires obtained under license from NRC Picker. Ipsos Social Research Institute Ltd (Ipsos) was contracted to manage the logistics of the survey program. Responsibility for the Patient Survey Program was transferred from the Ministry of Health to the Bureau of Health Information (BHI) in November 2012.

The aim of the survey program is to measure and report on patients' experiences of care in public hospitals in NSW, on behalf of the Ministry of Health and the local health districts (LHDs). The results are used as a source of performance measurement for individual hospitals, LHDs and the state.

This document outlines the sampling methodology, data management and analysis of the 2017 Maternity Care Survey.

The Maternity Care Survey 2017 was the second maternity survey conducted, with the first survey in 2015. For information on changes to the questionnaire between 2017 and 2015, please refer to the *Development Report – Maternity Care Survey 2017*.

For more information on how to interpret results and whether differences in the results between public hospitals, LHDs, and public hospitals and LHDs compared with NSW are statistically different, please refer to BHI's *Guide to Interpreting Survey Differences* at bhi.nsw.gov.au/nsw_patient_survey_program

Organisational roles in producing survey samples

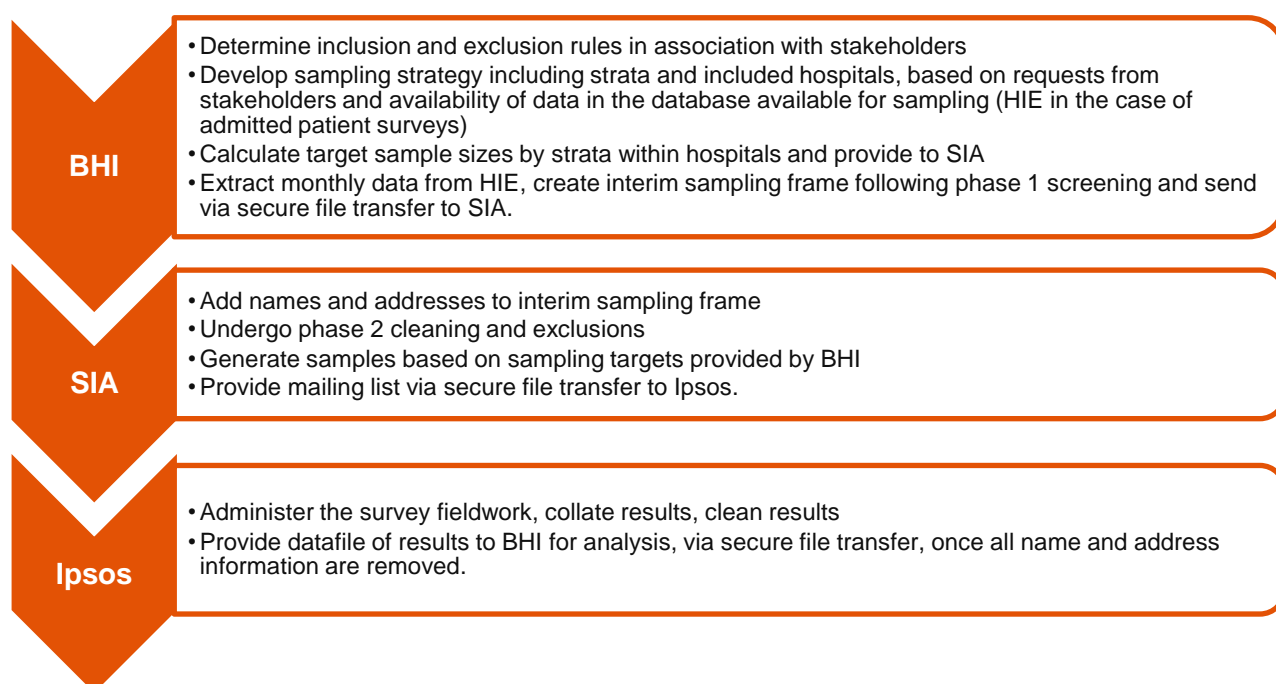
The survey program assures patients that their responses will be confidential and that staff at hospitals will not be able to determine who gave which response. BHI does this through a number of mechanisms, including:

- Data suppression (results for fewer than 30 responses are suppressed)
- Reporting aggregated results
- Anonymisation of patient comments
- Segregation of roles when constructing the survey samples (see below).

The sampling method for the survey program is a collaboration between BHI, Ipsos and the NSW Ministry of Health's Health Systems Information and Performance Reporting Branch (SIA) (see Figure 1). All surveys of admitted patients use data from the Health Information Exchange (HIE).

BHI has access to de-identified unit record hospital data from selected tables of the HIE database. Use of an encrypted patient number allows deduplication of patients within a hospital. For the Maternity Care Survey, sampling frames are defined separately for each month, with the date at discharge used to define eligible records. Sample sizes for each included hospital are calculated in advance, as defined later in this report.

Figure 1 Organisational responsibilities in sampling and survey processing, Maternity Care Survey, 2017



Inclusion criteria

Phase 1 screening

Admitted patient data pass through two phases of screening to create a sample frame of patient eligibility to participate in the Maternity Care Survey. Phase 1 screening is conducted by BHI to create an interim sample frame.

Inclusions

- Admitted patients aged 18 years and older
- Patients who gave birth during their admission (ICD-10 Z37.0, Z37.2, O80-O84, or procedure codes of 90467, 90468, 90469, 90470 or 16520) at a hospital where there were 100 or more births in the previous 12 months.

Exclusions

- Hospitals where there were fewer than 100 births in the previous 12 months
- Patients who died during their hospital admission – mode of separation of 6 (Death with autopsy) or 7 (Death without autopsy)
- Patients receiving Acute and Post-Acute Care (APAC) services
- Patients who are not receiving either acute or rehabilitation care in hospital (Episode of care types 1 and 2)
- Patients who were admitted to a psychiatric unit during the hospital stay
- Patients with a personal history of self-harm (ICD-10 Z91.5) or who have intentionally self-harmed (ICD-10 X60-X84, Y87.0, Y34)
- Patients with a family history of mental or behavioural disorders (ICD-10 Z81.8) and patients who have expressed suicidal ideation (ICD-10 R45.81)
- Patient recorded with maltreatment syndromes (ICD-10 T74) in any diagnosis field, including neglect or abandonment, physical abuse, sexual abuse, psychological abuse, other maltreatment syndromes and maltreatment syndrome, unspecified
- Patients who experienced a stillbirth (ICD-10 Z37.1, Z37.3, Z37.4, Z37.6, Z37.7)
- Patients who experienced pregnancy with an abortive outcome (ICD-10 O00-O08)
- Patients admitted for a termination of pregnancy procedure (ICD-10 35643-03, 35640-03)
- Patients admitted for same-day haemodialysis – code 13100-00 in any procedure fields
- Same day patients who stayed for less than three hours
- Same day patients transferred to another hospital
- Patients recorded as receiving contraceptive management (ICD-10 Z30) in any diagnosis field, including general counselling and advice on contraception, surveillance of contraceptive drugs, surveillance of contraceptive device, other contraceptive management and contraceptive management, unspecified.

Phase 2 screening

BHI provides the interim sampling frame to SIA, who add patient name and address information. Data then undergo a second phase of screening. This review results in exclusions for administrative/logistical reasons, or where death had been recorded after discharge for the stay used for sample selection, but before the final sampling frame is prepared.

Exclusions

Patients meeting the following exclusion criteria are removed in this phase:

- Invalid address (including those with addresses listed as hotels, motels, nursing homes, community services, Mathew Talbot Hostel, 100 William Street, army quarters, jails, “unknown”)
- Invalid name (including twin, baby of)
- Invalid date of birth
- On the ‘do not contact’ list
- Sampled in the previous six months for any BHI patient survey currently underway
- Recorded as deceased according to the NSW Birth Deaths and Marriages Registry and/or Agency Performance and Data Collection, prior to the sample being provided to Ipsos.

The data following these exclusions are defined by BHI as the final sampling frame.

Drawing of the sample

Survey design

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 to be mailed a survey.

Calculation of sample sizes and reporting frequency

Monthly sample sizes were determined prior to the commencement of the survey year. These calculations were based on data extracted from the HIE for the previous 12-month period, using the inclusion and exclusion criteria described in section Phase 1 screening (see page 3).

All hospitals were sampled on the basis of annual reporting. Included hospitals are shown later in the report (Table 2).

Equation 1 was used to estimate the sample size per year:

$$s_i = \frac{\chi^2 NP(1-P)}{d^2(N_i-1) + \chi^2 P(1-P)} \times R_i \quad (1)$$

Where:

s_i = desired sample size for hospital i

χ^2 = tabulated value of chi-squared with one degree of freedom at 5% level of significance (3.841)

N_i = patient population of hospital i

P = expected proportion giving positive response to the question on satisfaction with overall care (0.8), based on previous levels of response to patient surveys

d = degree of accuracy of the 95% confidence interval expressed as a proportion (± 0.07)

R_i = number of reporting periods per year for hospital i .

Sample sizes were inflated to account for expected response rates to ensure a sufficient number of patients participated from each hospital. For this survey, the expected response rate was 40%.

Monthly survey targets were provided to SIA after dividing the inflated sample size evenly by 12, and applying a minimum monthly target of at least six per hospital to account for the potential of variable numbers of eligible patients by month in hospitals with low numbers of births. For each month of sampling, SIA randomly selects patients within each hospital, with the aim of achieving the targets provided by BHI.

Data management

Data collection

Upon completion of a survey questionnaire, the respondent either mails a paper-based questionnaire or submits the survey responses online to Ipsos. If a paper form is returned, Ipsos scans in the answers electronically and manually enters free text fields.

Once all data are collated into a single dataset, names and addresses are removed. Also, all text entry fields are checked for potential identifiers (e.g. names of patients, names of doctors, telephone numbers, etc.) and any that are found are replaced with 'XXXX'.

Following this, each record is checked for any errors in completion. Where necessary, adjustments are made, such as removing responses where the patient has not correctly followed questionnaire instructions or where the respondent has provided multiple answers to a single response question.

At the end of this process, Ipsos uses a secure NSW Ministry of Health system to transfer the data from their servers to BHI's secure servers, all of which are password protected with limited staff access.

At no stage does BHI, which analyses the data, have access to the names and contact details of respondents. This ensures that respondent answers remain confidential and identifying data can never be publicly released.

Data analysis

For the Maternity Care Survey 2017, there were 13,811 surveys mailed and 4,787 responses.

Completeness of survey questionnaires

Survey completeness is a measure of how many questions each respondent answered as a proportion of all questions in the questionnaire. The level of survey completeness was high overall, with respondents answering, on average, 91 out of the 99 of the non-text questions. Over 90% of respondents answered at least 88 questions.

Response rate

The overall response rate was 35%. At the LHD level, this ranged from 24% to 48%; at the hospital level, this ranged from 18% to 60%. Response rates at LHD and hospital level are provided in Tables 1 and 2 respectively.

Weighting of data

Responses from the survey were weighted to optimise the degree to which results from respondents are representative of the experiences and outcomes of the overall patient population. At the LHD and NSW level, sample weights also ensure that the different sampling proportions used at the hospital level are accounted for, so that LHD and NSW-level results are not unduly influenced by small hospitals that had larger sampling proportions.

For each reporting period, responses were weighted to match the eligible population by hospital. Weights were calculated as follows.

At the hospital level, respondent weights were calculated using Equation 2:

$$w_i = \frac{N_i}{n_i} \quad (2)$$

where:

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

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

Assessment of weights

Weights were assessed to ensure that undue emphasis is not applied to individual responses. The design effect (DEFF) estimates the increase in the variance of estimates due to the complex sample design over that of a simple random sample. It is estimated as $(1 + \text{coefficient of variance (weights)}^2)$. Sample sizes and response rates are shown in Table 1 (by LHD and NSW) and Table 2 (by hospital).

A DEFF of two indicates that the variance of estimates will be double the sample variance that would have been obtained if simple random sampling had been done. Generally speaking, LHDs with the largest DEFFs are those that have the greatest range in patient volumes across the hospitals within the LHD. The standard errors at the LHD level are fairly small because of the sample sizes at that level. Therefore the increase in standard errors caused by the survey design (and leading to a larger DEFF at LHD level) is more than offset by the fact that each hospital that is sampled has sufficient sample size to allow hospital-level reporting. In addition, the estimates at the LHD level have appropriate distribution of respondents between large and small hospitals.

Table 2 also shows the Maternity Service Level of each of the hospitals included in the survey. These levels were obtained from the NSW Maternity and Neonatal Service Capability Framework (https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2016_018.pdf). Maternity service levels range from no planned service, Level 1 to Level 6. Level 6 maternity care is provided in tertiary perinatal centres.

Table 1 Sample size, response rates and design effects (DEFF), by LHD and overall, Maternity Care Survey, January to December 2017

LHD	Surveys mailed	Survey responses	Response rate (%)	DEFF
Central Coast	392	146	37	1.3
Far West	147	36	24	1.0
Hunter New England	2,138	691	32	2.0
Illawarra Shoalhaven	573	190	33	1.3
Mid North Coast	792	277	35	1.1
Murrumbidgee	864	307	36	1.3
Nepean Blue Mountains	890	309	35	2.3
Northern NSW	878	307	35	1.2
Northern Sydney	1,223	589	48	1.4
South Eastern Sydney	887	341	38	1.2
South Western Sydney	1,428	391	27	1.3
Southern NSW	843	339	40	1.0
Sydney	587	214	36	1.1
Western NSW	1,274	405	32	1.2
Western Sydney	895	245	27	1.1
NSW	13,811	4,787	35	1.8

Table 2 Sample size, response rates and design effects (DEFF), by hospital, Maternity Care Survey, January to December 2017

Hospital name	Maternity Service Level	Surveys mailed	Survey responses	Response rate (%)
Armidale Hospital	3	228	90	39
Auburn Hospital	4	288	51	18
Bankstown-Lidcombe Hospital	4	300	64	21
Bathurst Health Service	3	240	77	32
Blacktown Hospital	5	302	92	30
Blue Mountains District Anzac	3	179	81	45
Bowral and District Hospital	3	240	93	39
Broken Hill Health Service	3	147	36	24
Byron Central Hospital	N/A	106	40	38
Campbelltown Hospital	4	300	78	26
Canterbury Hospital	4	288	77	27
Coffs Harbour Health Campus	5	276	98	36
Cooma Hospital and Health Service	3	85	39	46
Cootamundra District Hospital	3	46	18	39
Cowra Health Service	3	118	36	31
Deniliquin Hospital and Health	3	77	25	32
Dubbo Base Hospital	5	264	83	31
Fairfield Hospital	4	288	74	26
Glen Innes Hospital	2	40	12	30
Gloucester Soldier's Memorial	2	4	1	25
Gosford Hospital	5	299	105	35
Goulburn Base Hospital and Health	4	195	80	41
Grafton Base Hospital	4	152	48	32
Griffith Base Hospital	4	239	82	34
Gunnedah Hospital	3	109	33	30
Hawkesbury District Health	4	264	98	37
Hornsby Ku-ring-gai Hospital	4	288	144	50
Inverell Hospital	3	171	55	32
John Hunter Hospital	6	307	103	34
Kempsev District Hospital	3	195	65	33
Lachlan Health Service - Forbes	3	130	42	32
Lachlan Health Service - Parkes	3	77	23	30
Leeton Health Service	3	7	2	29
Lismore Base Hospital	5	275	97	35
Lithgow Hospital	3	147	46	31
Liverpool Hospital	6	300	82	27
Macksville District Hospital	2	57	20	35
Maitland Hospital	5	288	90	31
Manly Hospital	4	276	132	48
Manning Hospital	4	252	73	29

Hospital name	Maternity Service Level	Surveys mailed	Survey responses	Response rate (%)
Milton Ulladulla Hospital	2	1	1	100
Mona Vale Hospital	4	264	113	43
Moree Hospital	3	143	39	27
Moruya District Hospital	3	188	60	32
Mudgee Health Service	3	169	54	32
Murwillumbah District Hospital	3	57	20	35
Muswellbrook Hospital	3	105	39	37
Narrabri Hospital	3	72	15	21
Nepean Hospital	6	300	84	28
Orange Health Service	4	276	90	33
Port Macquarie Base Hospital	5	264	94	36
Queanbevan Hospital and Health	3	199	98	49
Royal Hospital for Women	6	300	113	38
Royal North Shore Hospital	6	300	143	48
Royal Prince Alfred Hospital	6	299	137	46
Ryde Hospital	2	95	57	60
Scott Memorial Hospital - Scone	3	28	10	36
Shoalhaven District Memorial	3	273	93	34
Singleton Hospital	2	116	47	41
South East Regional Hospital	3	176	62	35
St George Hospital	5	299	101	34
Sutherland Hospital	4	288	127	44
Tamworth Hospital	4	275	84	31
Temora District Hospital	3	71	39	55
The Tweed Hospital	5	288	102	35
Tumut Health Service	3	47	20	43
Wagga Wagga Rural Referral	5	276	88	32
Westmead Hospital	6	305	102	33
Wollongong Hospital	5	299	96	32
Wvona Hospital	2	93	41	44
Young Health Service	3	101	33	33

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 patient population.

Table 3 shows the demographic characteristics of respondents against the patient population. The four columns denote:

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

Table 3 Demographic characteristics of patient population vs respondents, Maternity Care Survey, January to December 2017

Demographic variable	Sub-group	% in patient population	% in eligible population	% in respondents (unweighted)	% in respondents (weighted)
LHD	Central Coast	4	4	3	4
	Far West	0	0	1	0
	Hunter New England	12	12	14	12
	Illawarra Shoalhaven	5	5	4	5
	Mid North Coast	3	3	6	3
	Murrumbidgee	3	3	6	3
	Nepean Blue Mountains	7	7	6	7
	Northern NSW	4	4	6	4
	Northern Sydney	8	9	12	9
	South Eastern Sydney	11	11	7	11
	South Western Sydney	16	16	8	16
	Southern NSW	2	2	7	2
	Sydney	10	10	4	10
	Western NSW	4	4	8	4
	Western Sydney	11	11	5	11
Peer group	A1	48	48	21	48
	A3	6	5	2	5
	B	37	36	40	36
	C1	5	5	16	5
	C2	5	4	18	4
	D	1	1	3	1
Age stratum	18-24	16	.	10	9
	25-29	29	.	28	26
	30-34	33	.	38	40
	35-39	18	.	19	20
	40-44	4	.	4	4
	45+	0	.	0	0
Aboriginal status	Not Aboriginal	95	.	98	98
	Aboriginal and/or Torres Strait Islander	5	.	2	2

Reporting

Statistical analysis

Data were analysed for the period from January to December 2017. Analysis was undertaken in SAS V9.4 using the SURVEYFREQ procedure, with hospital, age groups and stay type as strata. Results were weighted for all questions, with the exception of questions related to socio-demographic characteristics and self-reported health.

BHI only publishes results that include a minimum of 30 respondents for any question at reporting level (hospital or LHD or NSW). This is to ensure there are enough respondents for reliable estimates to be calculated. This also ensures that confidentiality and privacy are protected. For hospitals or LHDs where there were too few respondents, results are suppressed.

Levels of reporting are shown in Table 4.

Table 4 Levels of reporting, Maternity Care Survey, January to December 2017

Grouping	NSW	Peer group	LHD	Hospital
All patients	✓	✓	✓	✓
Age group: self-reported – administrative data used where question on year of birth was missing or invalid	✓	✓	✓	
Education: response ‘Still at secondary school’ was combined with ‘Less than Year 12’	✓	✓	✓	
Main language spoken at home	✓	✓	✓	
Rurality of hospital: based on ARIA+ [#] category of hospital location – outer regional, remote and very remote combined	✓			
Long-standing health conditions	✓	✓	✓	
Self-reported health status	✓	✓	✓	
Quintile of disadvantage: based on the Australian Bureau of Statistics Index of Relative Socio-demographic Disadvantage	✓	✓	✓	
Country of birth: from administrative data	✓	✓	✓	
Rurality of patient residence: based on ARIA+ [#] category of postcode of respondent residence – outer regional, remote and very remote combined	✓	✓	✓	
Given birth before	✓	✓	✓	
Type of birth	✓	✓	✓	

[#] Accessibility/Remoteness Index of Australia is the standard Australian Bureau of Statistics measure of remoteness. For more information refer to www.abs.gov.au/websitedbs/d3310114.nsf/home/remoteness+structure

Unless otherwise specified, missing responses and those who responded 'Don't know/can't remember' to questions were excluded from analysis. For a detailed breakdown of the amount of missing or 'Don't know' responses by question, refer to Appendix 1. Typically, performance-type questions exclude missing values and 'Don't know/can't remember'-type responses. The exception is for 'Don't know/can't remember' responses for questions that ask about a third party (e.g. if family had enough opportunity to talk to doctor) or that are over 10%. Meanwhile, questions that are not related to hospital performance include results for people who responded 'Don't know/can't remember', who selected a 'Not applicable'-type response, and those who should have answered the question but did not (a 'missing response').

Confidence intervals are displayed in BHI's interactive data portal, Healthcare Observer, for both annual and quarterly results for all performance-type questions. The BHI document, *Guide to Interpreting Survey Differences*, provides information for comparing results. However, some differences in results between hospitals may be due to differences in the socio-demographic profile of patients attending those hospitals. BHI is currently developing methods to standardise survey results in order to account for differences in patient mix and to further ensure fair comparisons between hospitals and LHDs.

Some results are calculated indirectly from respondents' answers to a survey question. See Appendix 2 for details on how response options were grouped for each of these derived measures.

Appendix 1: Percentage of missing and ‘Don’t know’ responses

These percentages are unweighted.

Table 5 Proportion of missing responses ‘don’t know’ responses for questions in the MCPS 2017

Question text	Don't know (%)	Missing (%)	Missing + Don't know (%)*
1 How many weeks pregnant were you when you had your first appointment for antenatal care?	3.8	0.7	4.5
2 Was your antenatal care provided using a Shared Care model, i.e. some care provided by a GP and some by a hospital?		1.8	1.8
3 Who provided most of your antenatal care?		4.2	4.2
4 Was this antenatal care provided by the hospital named on the cover of this booklet?		2.5	2.5
5 How long did you usually have to travel (one way) for antenatal care check-ups during your pregnancy?	0.3	1.1	1.3
6 How long did you usually spend at your antenatal check-ups between the time you arrived and when you left?	0.4	1.7	2.1
7 How much of this time did you usually spend waiting to be seen? [at antenatal check-ups]	0.4	1.5	1.9
8 Do you think the amount of time you waited was...? [at antenatal check-ups]	0.6	1.3	1.8
9 How well organised was the antenatal care you received at your check-ups?		0.9	0.9
10 Did the health professionals providing your antenatal care explain things in a way you could understand?		0.8	0.8
11 Did you have confidence and trust in the health professionals providing your antenatal care?		0.9	0.9
12 Were the health professionals providing your antenatal care polite and courteous?		1.1	1.1
13 Was there any time when the health professionals needed access to your medical history and it was not available? [at antenatal check-ups]	10.0	1.1	11.1
14 Were you provided with a personal antenatal card (e.g. a Yellow Card), where information about your antenatal check-ups was recorded?	1.7	1.0	2.7
15 Did the health professionals update your personal antenatal card at every check-up?	0.3	1.0	1.2
16 Did the health professionals give you advice about the risks of consuming alcohol while pregnant?	6.6	1.2	7.9
17 Did the health professionals give you advice about the risks of exposure to tobacco smoke while pregnant?	6.0	1.2	7.2
18 Did the health professionals discuss the importance of healthy weight gain with you? [at antenatal check-ups]	6.5	1.2	7.7
19 Did the health professionals ask you how you were feeling emotionally during your pregnancy?	2.3	1.2	3.5
20 Did you have worries or fears about your pregnancy or the birth? [during antenatal period]		1.2	1.2
21 Did the health professionals discuss your worries or fears with you? [at antenatal check-ups]		0.9	0.9
22 Did you receive enough information about pain relief options prior to the birth?		1.4	1.4
23 Overall, how would you rate the antenatal care you received during your pregnancy?		1.5	1.5

Question text	Don't know (%)	Missing (%)	Missing + Don't know (%)*
24 Did you give birth to a single baby or multiple babies (twins, triplets or more)?		0.3	0.3
25 How many weeks pregnant were you when your baby was born?		0.3	0.3
26 How much did your baby weigh at birth? (If you gave birth to more than one baby, please answer for the lightest baby)	0.8	0.5	1.3
27 In the two weeks following the birth, did your baby spend any time being cared for in a neonatal intensive care unit (NICU) or similar unit?	0.6	0.3	0.8
28 What type of birth did you have?		0.5	0.5
29 Was your labour induced?		1.4	1.4
30 During your labour, were you able to move around and choose the position that made you most comfortable?		1.0	1.0
31 Were you offered the option of being in a bath during labour?	2.5	1.4	3.9
32 Did you have enough say about your pain relief during your labour and birth?		0.7	0.7
33 Do you think the midwives or doctors did everything reasonable to help you manage your pain during your labour and birth?		0.8	0.8
34 Had you previously met any of the midwives or doctors who cared for you during your labour and birth?	1.2	0.5	1.7
35 Did the midwives or doctors who you did not already know, introduce themselves to you during your labour and birth?	2.5	0.8	3.3
36 Were you able to get assistance from midwives or doctors when you needed it? [during labour and birth]		0.3	0.3
37 During your labour and birth, did the midwives or doctors explain things in a way you could understand?		0.3	0.3
38 Did midwives or doctors ever give you conflicting information during your labour and birth?		0.6	0.6
39 Were you involved, as much as you wanted to be, in decisions during your labour and birth?		0.5	0.5
40 During your labour and birth, was your birthing companion (e.g. your partner, the baby's father, doula or family member) involved as much as they wanted to be?	0.4	0.3	0.7
41 Did you have confidence and trust in the midwives or doctors taking care of you during your labour and birth?		0.4	0.4
42 Were the midwives or doctors kind and caring towards you? [during labour and birth]		0.4	0.4
43 Did you have worries or fears during your labour and birth?		0.3	0.3
44 Did a midwife or doctor discuss your worries or fears with you? [during labour and birth]		0.9	0.9
45 Did you feel you were treated with respect and dignity during your labour and birth?		0.3	0.3
46 Were you given enough privacy in the birth room or theatre?		0.5	0.5
47 Did you have skin to skin contact with your baby (that means that your baby was naked, and placed directly on your chest or tummy) shortly after the birth?		0.5	0.5
48 Overall, how would you rate the care you received in the hospital during your labour and birth?		0.5	0.5
49 Shortly after the birth, did a health professional talk to you about how the birth had gone?	10.4	0.2	10.6
50 After the birth of your baby, did the health professionals explain things in a way you could understand?		0.3	0.3

Question text	Don't know (%)	Missing (%)	Missing + Don't know (%)*
51 After the birth, did the health professionals give you enough information about how to care for yourself (e.g. how to go to the toilet, how to sit and lie down)?		0.2	0.2
52 After the birth, did the health professionals give you enough information about how to care for your baby (e.g. how to hold your baby, how to put a nappy on your baby)?		0.4	0.4
53 After the birth of your baby, did you ever receive conflicting information from health professionals about how to care for yourself or your baby?		0.4	0.4
54 Were you ever in any pain after the birth of your baby?		0.2	0.2
55 Do you think the health professionals did everything they could to help you manage your pain after the birth of your baby?		0.9	0.9
56 After the birth of your baby, were you able to get assistance or advice from health professionals when you needed it?		0.2	0.2
57 After the birth of your baby, were the health professionals taking care of you kind and caring?		0.1	0.1
58 Were the visiting times convenient for your friends and family?		0.3	0.3
59 How clean were the wards or rooms you stayed in after the birth of your baby?		0.8	0.8
60 How clean were the toilets and bathrooms you used after the birth of your baby?		0.6	0.6
61 Did you see the health professionals wash their hands, or use hand gel to clean their hands, before touching you or your baby?	10.0	0.4	10.4
62 During your stay in hospital, were you ever bothered by any of the following?		1.7	1.7
63 Did you have any hospital food during this stay?		0.5	0.5
64 How would you rate the hospital food?		0.4	0.4
65 Did you have any special dietary needs (e.g. vegetarian, diabetic, food allergies, religious, cultural, or related to your treatment)?		0.3	0.3
66 Was the hospital food suitable for your dietary needs?	0.1	0.1	0.2
67 Did the hospital provide access to food when you needed it?	4.4	0.6	5.1
68 Were your decisions about how you wanted to feed your baby respected by the health professionals?		0.4	0.4
69 Did you ever receive conflicting advice about feeding your baby from the health professionals?		0.5	0.5
70 Did you try to breastfeed your baby?		0.3	0.3
71 How long did you breastfeed your baby for?		0.3	0.3
72 Did midwives in the hospital work with you to show you a good position for breastfeeding your baby?		0.4	0.4
73 Did you feel involved in decisions about your discharge from hospital?		0.5	0.5
74 Looking back, do you feel that the length of your stay in hospital was...?		0.6	0.6
75 Before leaving hospital, were you given enough information about caring for yourself and your baby at home?		0.7	0.7
76 Did hospital staff tell you who to contact if you were worried about your health or your baby's health after you left hospital?	4.1	0.3	4.3
77 Overall, how would you rate the care you received in the hospital after your baby was born?		0.4	0.4

Question text	Don't know (%)	Missing (%)	Missing + Don't know (%)*
78 During your hospital stay or soon afterwards, did you experience any of the following complications or problems?		1.2	1.2
79 Was the impact of this complication or problem ...?		0.6	0.6
80 In your opinion, were members of the hospital staff open with you about this complication or problem?		0.4	0.4
81 In the first 2 weeks after arriving home, did you have a follow-up appointment with a midwife or nurse?		0.3	0.3
82 During a follow-up appointment, did a midwife or nurse ask you how you were feeling emotionally?	1.9	0.3	2.2
83 In general, did you feel that the midwife or nurse listened to you? [at follow-up appointment]		0.2	0.2
84 In general, did you have enough time with the midwife or nurse to ask questions or discuss any concerns? [at follow-up appointment]		0.2	0.2
85 At any point during your pregnancy or after the birth, were you shown or given information about safe sleeping for your baby?		0.6	0.6
86 Overall, how would you rate the care you received in the first two weeks after arriving home from the hospital?		0.5	0.5
87 If friends and family asked about your maternity experience at the hospital where you gave birth, how would you respond?		0.8	0.8
88 What year were you born?		0.8	0.8
89 Apart from this recent birth, have you given birth before?		0.2	0.2
90 Highest level of education completed		0.4	0.4
91 In general, how would you rate your health?		0.5	0.5
92 Which, if any, of the following long-standing conditions do you have (including age related conditions)?		2.5	2.5
93 Language mainly spoken at home		0.8	0.8
94 Did you need, or would you have liked, to use an interpreter at any stage while you were in hospital?		0.5	0.5
95 Did the hospital provide an interpreter when you needed one?		0.6	0.6
96 Aboriginal and/or Torres Strait Islander		0.6	0.6
97 How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy?		0.6	0.6
98 Who completed this survey?		0.3	0.3
99 Do you give permission for the Bureau of Health Information to link your answers from this survey to health records related to you?		0.7	0.7

* 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 2: 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 the array of 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 see the *Data Dictionary: Quintile of disadvantage*).

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 or specific response options 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 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, to 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 following questions and responses were used in the construction of the derived measures.

Table 6 Derived measures for the Maternity Care Survey questionnaire 2017

Derived Measure	Original Question	Derived Measure Categories	Original Question Responses
Received antenatal care	Q1. How many weeks pregnant were you when you had your first appointment for antenatal care?	Didn't receive care	I didn't receive antenatal care
		Received care	Less than 14 weeks pregnant
			14-19 weeks pregnant
			20-28 weeks pregnant
			More than 28 weeks pregnant
			Don't know/can't remember
Received most antenatal care in a public hospital	Q3. Was this antenatal care provided by the hospital named on the cover of this booklet?	Most care elsewhere	GP/family doctor
			Private midwife/midwives
			Private obstetrician
			Other
		Most care in public hospital	Public hospital midwife/midwives
			Public hospital obstetrician
Needed information about pain relief options for the birth	Q22. Did you receive enough information about pain relief options prior to the birth?	Did not need information	I did not need information about pain relief options
		Needed information	Yes, definitely
			Yes, to some extent
			No
Number of weeks pregnant when baby was born	Q25. How many weeks pregnant were you when your baby was born?	32 or more weeks	32 - 36 weeks
			37 - 41 weeks
			42 or more weeks
		Less than 32 weeks	Less than 32 weeks
Type of birth	Q28. What type of birth did you have?	Vaginal birth	Vaginal birth
			Assisted vaginal birth (with vacuum extraction or forceps)
		Caesarean section	Caesarean section after going into labour (emergency)
			Caesarean section before going into labour (planned)
Knew all the midwives or doctors who provided care during labour and birth	Q35. Did the midwives or doctors who you did not already know, introduce themselves to you during your labour and birth?	Already knew them	I already knew all the staff who cared for me
		Didn't know them	Yes, always
			Yes, sometimes
			No
Needed assistance from midwives or doctors during labour and birth	Q36. Were you able to get assistance from midwives or doctors when you needed it?	Didn't need assistance	I did not need assistance
		Needed assistance	Yes, always
			Yes, sometimes
			No
Wanted to be involved in decisions about the labour and birth	Q39. Were you involved, as much as you wanted to be, in decisions during your labour and birth?	Didn't want involvement	I did not want or need to be involved

		Wanted involvement	Yes, definitely
			Yes, to some extent
			No
Needed information about how to care for self after the birth	Q51. After the birth, did the health professionals give you enough information about how to care for yourself (e.g. how to go to the toilet, how to sit and lie down)?	Needed information	Yes, completely
			Yes, to some extent
			No
		Not applicable to situation	Not applicable to my situation
Needed information about how to care for the baby after the birth	Q52. After the birth, did the health professionals give you enough information about how to care for your baby (e.g. how to hold your baby, how to put a nappy on your baby)?	Needed information	Yes, completely
			Yes, to some extent
			No
		Not applicable to situation	Not applicable to my situation
After the birth, needed assistance or advice from health professionals in the hospital	Q56. After the birth of your baby, were you able to get assistance or advice from health professionals when you needed it?	Didn't need assistance	I did not need assistance or advice
		Needed assistance	Yes, always
			Yes, sometimes
			No
Had visitors following the birth while in hospital (derived version)	Q58. Were the visiting times convenient for your friends and family?	Did not have visitors	I did not have any visitors
		Had visitors	Yes, definitely
			Yes, to some extent
			No
Bothered by noise, lack of privacy, lack of security or lighting during stay in hospital	Q62. During your stay in hospital, were you ever bothered by any of the following?	Not bothered	None of the above
		Was bothered	Noise from other people's babies
			Noise from patients
			Noise from hospital staff
			Noise from other people's visitors
			Lack of privacy
			Lack of security for your belongings
			Lighting
Made decisions about feeding the baby	Q68. Were your decisions about how you wanted to feed your baby respected by the health professionals?	Made decisions	Yes, always
			Yes, sometimes
			No
		Not applicable to situation	Not applicable to my situation
Received advice about feeding the baby from health professionals in the hospital	Q69. Did you ever receive conflicting advice about feeding your baby from the health professionals?	Not applicable to situation	Not applicable to my situation
		Received advice	Yes
			No
Wanted to be involved in decisions about their discharge from hospital	Q73. Did you feel involved in decisions about your discharge from hospital?	Didn't want involvement	I did not want or need to be involved
		Wanted involvement	Yes, definitely
			Yes, to some extent
			No, I did not feel involved

Needed information about caring for self and baby at home	Q75. Before leaving hospital, were you given enough information about caring for yourself and your baby at home?	Didn't need information	I did not need this information
		Needed information	Yes, completely
			Yes, to some extent
Experienced complication or problem during or shortly after hospital stay	Q78. During your hospital stay or soon afterwards, did you experience any of the following complications or problems?	Experienced complication	No
			An infection
			Excessive bleeding/haemorrhage
			Perineal/vaginal tear
			Complications as a result of an operation or surgical procedure
			A negative reaction to medication
			A bed sore or pressure wound
			A blood clot in the leg/DVT
			Any other complication or problem
		None reported	None of these
Complication or problem occurred during hospital stay	Q80. In your opinion, were members of the hospital staff open with you about this complication or problem?	Occurred after left	Not applicable, as it happened after I left
		Occurred in hospital	Yes, completely
			Yes, to some extent
In the first 2 weeks after arriving home, had a follow-up appointment with a midwife or nurse	Q81. In the first 2 weeks after arriving home, did you have a follow-up appointment with a midwife or nurse?	Had follow-up	No
			Yes, with a midwife at home
			Yes, with a nurse at home
			Yes, with a midwife or nurse at a clinic
At any point during your pregnancy or after the birth, were you shown or given information about safe sleeping for your baby?	Q85. At any point during your pregnancy or after the birth, were you shown or given information about safe sleeping for your baby?	No	No, I was not given this information
		Yes, given information	Yes, written information
			Yes, verbal information
Highest level of education completed	Q90. What is the highest level of education you have completed?	Has university degree/s	Yes, the midwives or doctors showed me how to put my baby to sleep
		No university degree	University degree
			Post graduate/higher degree
			Less than Year 12 or equivalent
			Completed Year 12 or equivalent
			Trade or technical certificate or diploma

Long-standing health conditions	Q92. Which, if any, of the following long-standing conditions do you have (including age related conditions)?	Has condition/s	Deafness or severe hearing impairment
			Blindness or partially sighted
			A long-standing illness (e.g. cancer, HIV, diabetes, chronic heart disease)
			A long-standing physical condition
			A learning disability
			A mental health condition (e.g. depression)
			A neurological condition (e.g. Alzheimer's, Parkinson's)
Aboriginal and/or Torres Strait Islander	Q96. Are you of Aboriginal origin, Torres Strait Islander origin, or both?	None reported	Missing
			None of these
		Aboriginal	Yes, Aboriginal
			Yes, Torres Strait Islander
			Yes, both Aboriginal and Torres Strait Islander
		Non-Aboriginal	No