

# **Technical Supplement: Maternity Care Patient Survey, 2015**

January 2017

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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](http://bhi.nsw.gov.au) for any amendments.

# The NSW Patient Survey Program

The NSW Patient Survey Program began surveying patients in NSW public facilities 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 NSW Ministry of Health to the Bureau of Health Information (BHI) in July 2012.

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

This document outlines the sampling methodology, data management and analysis of the 2015 Maternity Care Patient Survey (MCPS).

For information on the development of this questionnaire, please refer to the *MCPS Development Report* at [bhi.nsw.gov.au/nsw\\_patient\\_survey\\_program](http://bhi.nsw.gov.au/nsw_patient_survey_program)

For more information on how to interpret results and whether differences in the results between hospitals, LHDs or NSW are statistically different, please refer to the *BHI Guide to Interpreting Survey Differences* at [bhi.nsw.gov.au/nsw\\_patient\\_survey\\_program](http://bhi.nsw.gov.au/nsw_patient_survey_program)

# Organisational roles in producing survey samples

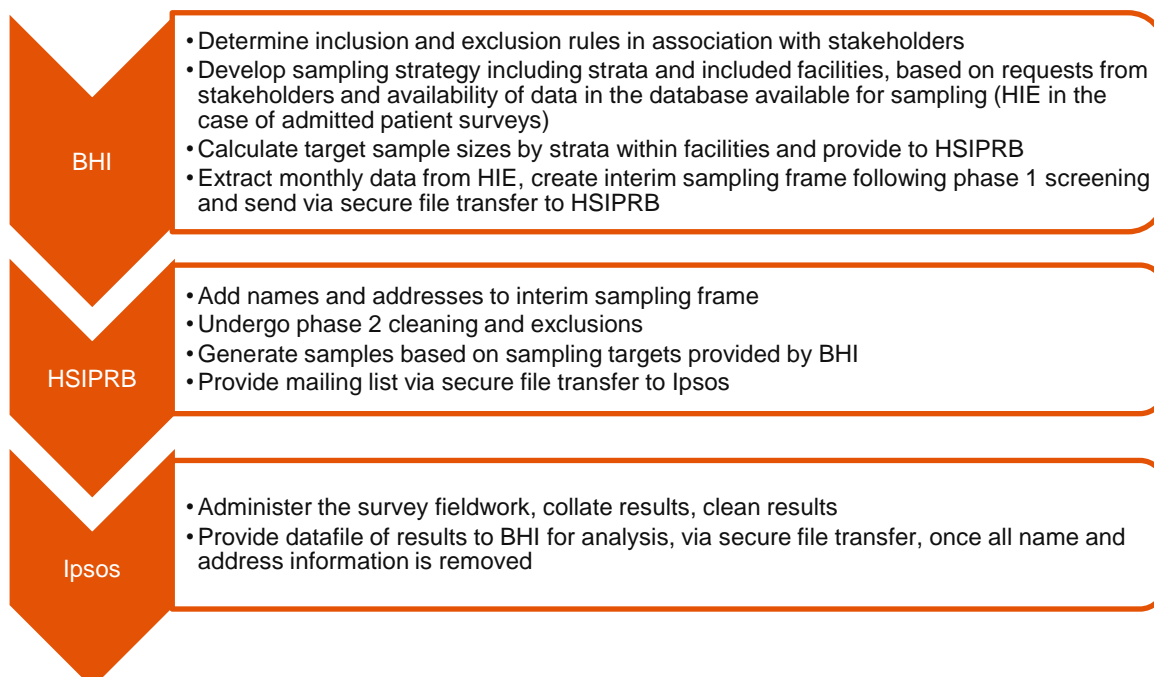
The survey program assures patients that their responses will be confidential and that staff at hospitals will not be able to determine who gave which response. BHI does this through a number of mechanisms, including:

- 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 System Information and Performance Reporting Branch (HSIPRB) (see Figure 1). All surveys of admitted patients use data from the Health Information Exchange (HIE).

BHI has access to de-identified unit record data from selected tables of the HIE database. Use of an encrypted patient number allows deduplication of patients within a hospital. For the MCPS, 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 Patient Survey, 2015



# Inclusion criteria

## Phase 1 screening

Admitted patient data pass through two phases of screening. Phase 1 screening is conducted by BHI.

### Inclusions

- Admitted patients aged 18 years and older
- Patients who gave birth at a facility with a peer group classification of:
  - A1: Principal referral
  - A3: Ungrouped acute – tertiary referral
  - B: Major hospitals group 1
  - C1: District group 1
  - C2: District group 2.

### Exclusions

- Facilities where there were fewer than 100 admissions 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 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 HSIPRB, 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 facility defined as a stratum. Simple random sampling without replacement was applied within each stratum.

### 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 facilities were sampled on the basis of annual reporting. Included facilities 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 facility  $i$

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

$N_i$  = patient population of facility  $i$

$P$  = 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 ( $\pm 0.07$ )

$R_i$  = number of reporting periods per year for facility  $i$ .

Sample sizes were allocated proportionately across each stratum of age group and stay type.

Sample size was adjusted to account for the expected response rate. For this survey, the expected response rate was 40%.

Monthly survey targets were provided to HSIPRB after dividing the inflated sample size evenly by 12, and applying a minimum monthly sample size of at least four to each sampling stratum. For each month of sampling, HSIPRB randomly selects patients within each facility and stratum, 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 from the dataset. Also, all text entry fields are checked for potential identifiers (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, who analyse 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

## 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, 87 out of the 94 of the non-text questions. Over 95% of respondents answered at least 90 questions.

## Response rate

The overall response rate was 36%. At the LHD level, this ranged from 30% to 50%; at the facility level, this ranged from 17% to 59%. Response rates at the LHD and facility level are provided in Tables 1 and 2 respectively, later in the document.

## Weighting of data

Responses from the survey were weighted to ensure that results from respondents are representative of the overall patient population. At the LHD and NSW level, weights also ensure that the different sampling proportions used at the facility level are accounted for, so that LHD results are not unduly influenced by small facilities that had larger sampling proportions.

For each reporting period, responses were weighted to match patient volumes at the facility level. Weights were calculated as follows.

An initial weight was calculated for respondents in each stratum 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  $i^{th}$  stratum

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

## 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 facility).

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 facilities 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 facility that is sampled has sufficient sample size to allow facility-level reporting. In addition, the estimates at the LHD level have appropriate distribution of respondents between large and small facilities. The DEFFs are shown by LHD and for NSW in Table 1.

**Table 1 Sample size, response rates and design effects (DEFF), by LHD and overall, MCPS, January to December 2015**

| <b>LHD</b>            | <b>Surveys mailed</b> | <b>Survey responses</b> | <b>Response rate (%)</b> | <b>DEFF</b> |
|-----------------------|-----------------------|-------------------------|--------------------------|-------------|
| Central Coast         | 433                   | 153                     | 35                       | 1.5         |
| Far West              | 63                    | 21                      | 33                       | N/A         |
| Hunter New England    | 2,110                 | 704                     | 33                       | 2.0         |
| Illawarra Shoalhaven  | 576                   | 187                     | 32                       | 1.2         |
| Mid North Coast       | 729                   | 234                     | 32                       | 1.1         |
| Murrumbidgee          | 768                   | 267                     | 35                       | 1.2         |
| Nepean Blue Mountains | 668                   | 243                     | 36                       | 2.3         |
| Northern NSW          | 866                   | 316                     | 36                       | 1.1         |
| Northern Sydney       | 1,243                 | 619                     | 50                       | 1.3         |
| South Eastern Sydney  | 888                   | 337                     | 38                       | 1.1         |
| South Western Sydney  | 1,421                 | 425                     | 30                       | 1.3         |
| Southern NSW          | 957                   | 370                     | 39                       | 1.0         |
| Sydney                | 588                   | 205                     | 35                       | 1.0         |
| Western NSW           | 1,101                 | 372                     | 34                       | 1.4         |
| Western Sydney        | 900                   | 286                     | 32                       | 1.0         |
| <b>NSW</b>            | <b>13,311</b>         | <b>4,739</b>            | <b>36</b>                | <b>1.7</b>  |

**Table 2 Sample size and response rates, by facility, MCPS, January to December 2015**

| Facility name                                   | Reporting period | Surveys mailed | Survey responses | Response rate (%) |
|---|------------------|----------------|------------------|-------------------|
| Armidale and New England Hospital               | Annually         | 202            | 72               | 36                |
| Auburn Hospital                                 | Annually         | 288            | 78               | 27                |
| Bankstown/Lidcombe Hospital                     | Annually         | 300            | 52               | 17                |
| Bathurst Base Hospital                          | Annually         | 252            | 107              | 42                |
| Bega District Hospital                          | Annually         | 184            | 75               | 41                |
| Blacktown Hospital                              | Annually         | 300            | 104              | 35                |
| Blue Mountains District Anzac Memorial Hospital | Annually         | 194            | 98               | 51                |
| Bowral and District Hospital                    | Annually         | 233            | 102              | 44                |
| Broken Hill Base Hospital                       | Annually         | 63             | 21               | 33                |
| Campbelltown Hospital                           | Annually         | 300            | 102              | 34                |
| Canterbury Hospital                             | Annually         | 288            | 80               | 28                |
| Coffs Harbour Base Hospital                     | Annually         | 276            | 91               | 33                |
| Cooma Health Service                            | Annually         | 122            | 49               | 40                |
| Cowra District Hospital                         | Annually         | 106            | 35               | 33                |
| Deniliquin Health Service                       | Annually         | 93             | 33               | 35                |
| Dubbo Base Hospital                             | Annually         | 288            | 78               | 27                |
| Fairfield Hospital                              | Annually         | 288            | 82               | 28                |
| Forbes District Hospital                        | Annually         | 85             | 28               | 33                |
| Gosford Hospital                                | Annually         | 300            | 93               | 31                |
| Goulburn Base Hospital                          | Annually         | 204            | 80               | 39                |
| Grafton Base Hospital                           | Annually         | 234            | 67               | 29                |
| Griffith Base Hospital                          | Annually         | 252            | 89               | 35                |
| Gunnedah District Hospital                      | Annually         | 89             | 31               | 35                |
| Hornsby and Ku-Ring-Gai Hospital                | Annually         | 288            | 143              | 50                |
| Inverell District Hospital                      | Annually         | 161            | 41               | 25                |
| John Hunter Hospital                            | Annually         | 300            | 113              | 38                |
| Kempsey Hospital                                | Annually         | 189            | 52               | 28                |
| Lismore Base Hospital                           | Annually         | 273            | 107              | 39                |
| Lithgow Health Service                          | Annually         | 174            | 62               | 36                |
| Liverpool Hospital                              | Annually         | 300            | 87               | 29                |
| Maitland Hospital                               | Annually         | 288            | 102              | 35                |
| Manly District Hospital                         | Annually         | 276            | 139              | 50                |
| Manning Base Hospital                           | Annually         | 264            | 87               | 33                |
| Mona Vale and District Hospital                 | Annually         | 264            | 118              | 45                |
| Moree District Hospital                         | Annually         | 143            | 45               | 31                |
| Moruya District Hospital                        | Annually         | 207            | 57               | 28                |
| Mudgee District Hospital                        | Annually         | 135            | 52               | 39                |
| Murwillumbah District Hospital                  | Annually         | 83             | 34               | 41                |
| Muswellbrook District Hospital                  | Annually         | 159            | 56               | 35                |
| Narrabri District Hospital                      | Annually         | 94             | 27               | 29                |
| Nepean Hospital                                 | Annually         | 300            | 83               | 28                |

| Facility name                         | Reporting period | Surveys mailed | Survey responses | Response rate (%) |
|---------------------------------------|------------------|----------------|------------------|-------------------|
| Orange Health Service                 | Annually         | 140            | 44               | 31                |
| Parkes District Hospital              | Annually         | 95             | 28               | 29                |
| Port Macquarie Base Hospital          | Annually         | 264            | 91               | 34                |
| Queanbeyan Health Service             | Annually         | 240            | 109              | 45                |
| Royal Hospital for Women              | Annually         | 300            | 123              | 41                |
| Royal North Shore Hospital            | Annually         | 300            | 151              | 50                |
| Royal Prince Alfred Hospital          | Annually         | 300            | 125              | 42                |
| Ryde Hospital                         | Annually         | 115            | 68               | 59                |
| Shoalhaven District Memorial Hospital | Annually         | 276            | 91               | 33                |
| Singleton District Hospital           | Annually         | 137            | 50               | 36                |
| St George Hospital                    | Annually         | 300            | 94               | 31                |
| Sutherland Hospital                   | Annually         | 288            | 120              | 42                |
| Tamworth Base Hospital                | Annually         | 273            | 80               | 29                |
| The Tweed Hospital                    | Annually         | 276            | 108              | 39                |
| Tumut Health Service                  | Annually         | 50             | 17               | 34                |
| Wagga Wagga Base Hospital             | Annually         | 264            | 86               | 33                |
| Westmead Hospital                     | Annually         | 312            | 104              | 33                |
| Wollongong Hospital                   | Annually         | 300            | 96               | 32                |
| Wyong Hospital                        | Annually         | 133            | 60               | 45                |
| Young Health Service                  | Annually         | 109            | 42               | 39                |

### Comparing weighted and unweighted patient characteristics

One of the aims of weighting 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 to survey, MCPS, January to December 2015**

| <b>Demographic variable</b> | <b>Sub-group</b>                         | <b>% in patient population</b> | <b>% in eligible population</b> | <b>% in respondents (unweighted)</b> | <b>% in respondents (weighted)</b> |
|-----------------------------|--|--------------------------------|---------------------------------|--------------------------------------|------------------------------------|
| <b>LHD</b>                  | Central Coast                            | 4                              | 4                               | 3                                    | 4                                  |
|                             | Far West                                 | <1                             | <1                              | <1                                   | <1                                 |
|                             | Hunter New England                       | 13                             | 13                              | 15                                   | 13                                 |
|                             | Illawarra Shoalhaven                     | 5                              | 5                               | 4                                    | 5                                  |
|                             | Mid North Coast                          | 3                              | 3                               | 5                                    | 3                                  |
|                             | Murrumbidgee                             | 3                              | 2                               | 6                                    | 2                                  |
|                             | Nepean Blue Mountains                    | 7                              | 7                               | 5                                    | 7                                  |
|                             | Northern NSW                             | 3                              | 3                               | 7                                    | 3                                  |
|                             | Northern Sydney                          | 9                              | 9                               | 13                                   | 9                                  |
|                             | South Eastern Sydney                     | 12                             | 12                              | 7                                    | 12                                 |
|                             | South Western Sydney                     | 17                             | 17                              | 9                                    | 17                                 |
|                             | Southern NSW                             | 2                              | 2                               | 8                                    | 2                                  |
|                             | Sydney                                   | 7                              | 7                               | 4                                    | 7                                  |
|                             | Western NSW                              | 4                              | 4                               | 8                                    | 4                                  |
| Western Sydney              | 10                                       | 10                             | 6                               | 10                                   |                                    |
| <b>Peer group</b>           | A1                                       | 46                             | 47                              | 21                                   | 47                                 |
|                             | A3                                       | 6                              | 6                               | 3                                    | 6                                  |
|                             | B  | 38                             | 38                              | 42                                   | 38                                 |
|                             | C1                                       | 5                              | 4                               | 15                                   | 4                                  |
|                             | C2                                       | 6                              | 5                               | 19                                   | 5                                  |
| <b>Age stratum</b>          | 18–24                                    | 18                             | .                               | 10                                   | 9                                  |
|                             | 25–29                                    | 30                             | .                               | 30                                   | 29                                 |
|                             | 30–34                                    | 32                             | .                               | 37                                   | 39                                 |
|                             | 35–39                                    | 16                             | .                               | 18                                   | 18                                 |
|                             | 40–44                                    | 4                              | .                               | 4                                    | 5                                  |
|                             | 45+                                      | <1                             | .                               | <1                                   | <1                                 |
| <b>Aboriginal status</b>    | 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 2015 combined. Analysis was undertaken in SAS V9.4 using the SURVEYFREQ procedure, with facility as strata. Results were weighted for all questions, with the exception of questions related to socio-demographic characteristics and self-reported health.

To ensure that respondents are not identifiable, BHI only publishes results that include a minimum of 30 respondents. For facilities or LHDs where there were too few respondents, results are suppressed.

Levels of reporting are shown in Table 4.

**Table 4 Levels of reporting, MCPS, January to December 2015**

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

Note: Only for facilities that were sampled on the basis of quarterly reporting and where at least six quarters of unsuppressed results were available

# 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](http://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 can be displayed in 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 facilities may be due to differences in the demographic profile of patients attending those facilities. BHI is currently developing methods to standardise survey results in order to account for differences in patient mix and to optimise direct comparisons.

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 and ‘Don’t know’ responses, by question, MCPS, January to December 2015**

| 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?   | 3.5            | 0.5         | 4.0                       |
| 2 Who provided most of your antenatal care?  |                | 4.2         | 4.2                       |
| 3 Was this antenatal care provided by the hospital named on the cover of this booklet?   |                | 1.9         | 1.9                       |
| 4 How long did you usually have to travel (one way) for antenatal care check-ups during your pregnancy?                                      | 0.2            | 0.9         | 1.1                       |
| 5 How long did you usually spend at your antenatal check-ups between the time you arrived and when you left?                                 | 0.3            | 1.3         | 1.6                       |
| 6 How much of this time did you usually spend waiting to be seen? [at antenatal check-ups]   | 0.3            | 1.3         | 1.6                       |
| 7 How well organised was the antenatal care you received at your check-ups?  |                | 0.7         | 0.7                       |
| 8 Did the health professionals providing your antenatal care explain things in a way you could understand?                                   |                | 0.8         | 0.8                       |
| 9 Did you have confidence and trust in the health professionals providing your antenatal care?   |                | 0.8         | 0.8                       |
| 10 Were the health professionals providing your antenatal care polite and courteous?   |                | 0.9         | 0.9                       |
| 11 Was there any time when the health professionals needed access to your medical history and it was not available? [at antenatal check-ups] | 10.3           | 0.9         | 11.2                      |
| 12 Were you provided with a personal antenatal card (e.g. a Yellow Card), where information about your antenatal check-ups was recorded?     | 1.1            | 0.8         | 1.9                       |
| 13 Did the health professionals update your personal antenatal card at every check-up?   | 0.5            | 0.7         | 1.2                       |
| 14 Did the health professionals give you advice about the risks of consuming alcohol while pregnant?   | 7.7            | 0.8         | 8.4                       |
| 15 Did the health professionals give you advice about the risks of exposure to tobacco smoke while pregnant?                                 | 7.0            | 0.8         | 7.8                       |
| 16 Were you told about programs you could join or take part in to stop smoking? [at antenatal check-ups]                                     | 1.0            | 1.1         | 2.1                       |
| 17 Did the health professionals discuss the importance of healthy weight gain with you? [at antenatal check-ups]                             | 8.6            | 1.0         | 9.7                       |
| 18 Did the health professionals ask you how you were feeling emotionally during your pregnancy?  | 2.1            | 0.9         | 2.9                       |
| 19 Did you have worries or fears about your pregnancy or the birth? [during antenatal period]  |                | 0.9         | 0.9                       |
| 20 Did the health professionals discuss your worries or fears with you? [at antenatal check-ups]   |                | 0.3         | 0.3                       |
| 21 Where did you get information about pain relief options for this birth?   |                | 2.6         | 2.6                       |
| 22 Overall, how would you rate the antenatal care you received during your pregnancy?  |                | 1.0         | 1.0                       |
| 23 Did you give birth to a single baby or multiple babies (twins, triplets or more)?   |                | 0.1         | 0.1                       |



| Question text   | Don't know (%) | Missing (%) | Missing + Don't know (%)* |
|---|----------------|-------------|---------------------------|
| 24 How many weeks pregnant were you when your baby was born?  |                | 0.3         | 0.3                       |
| 25 What type of birth did you have?   |                | 0.2         | 0.2                       |
| 26 Why was your baby born by caesarean section?   | 0.4            | 0.2         | 0.6                       |
| 27 Was your labour induced?   |                | 1.9         | 1.9                       |
| 28 During your labour, were you able to move around and choose the position that made you most comfortable?   |                | 1.5         | 1.5                       |
| 29 Were you offered the option of being in a bath during labour?  | 2.9            | 1.7         | 4.6                       |
| 30 Did you have enough say about your pain relief during your labour and birth?   |                | 0.7         | 0.7                       |
| 31 Do you think the midwives or doctors did everything reasonable to help you manage your pain during your labour and birth?  |                | 0.6         | 0.6                       |
| 32 Had you previously met any of the midwives or doctors who cared for you during your labour and birth?  | 1.6            | 0.4         | 2.0                       |
| 33 Did the midwives or doctors who you did not already know, introduce themselves to you during your labour and birth?  | 3.6            | 0.4         | 3.9                       |
| 34 Were you able to get assistance from midwives or doctors when you needed it? [during labour and birth]   |                | 0.2         | 0.2                       |
| 35 During your labour and birth, did the midwives or doctors explain things in a way you could understand?  |                | 0.1         | 0.1                       |
| 36 Did midwives or doctors ever give you conflicting information during your labour and birth?  |                | 0.5         | 0.5                       |
| 37 Were you involved, as much as you wanted to be, in decisions during your labour and birth?   |                | 0.3         | 0.3                       |
| 38 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?          | 0.5            | 0.1         | 0.7                       |
| 39 Did you have confidence and trust in the midwives or doctors taking care of you during your labour and birth?  |                | 0.3         | 0.3                       |
| 40 Were the midwives or doctors kind and caring towards you? [during labour and birth]  |                | 0.2         | 0.2                       |
| 41 Did you have worries or fears during your labour and birth?  |                | 0.4         | 0.4                       |
| 42 Did a midwife or doctor discuss your worries or fears with you? [during labour and birth]  |                | 0.5         | 0.5                       |
| 43 Did you feel you were treated with respect and dignity during your labour and birth?   |                | 0.4         | 0.4                       |
| 44 Were you given enough privacy in the birth room or theatre?  |                | 0.4         | 0.4                       |
| 45 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?              |                | 0.4         | 0.4                       |
| 46 Overall, how would you rate the care you received in the hospital during your labour and birth?  |                | 1.3         | 1.3                       |
| 47 How would you describe your health immediately after the birth?  |                | 0.2         | 0.2                       |
| 48 Shortly after the birth, did a health professional talk to you about how the birth had gone?   | 14.8           | 0.2         | 15.0                      |
| 49 After the birth of your baby, did the health professionals explain things in a way you could understand?   |                | 0.3         | 0.3                       |
| 50 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)?        |                | 0.3         | 0.3                       |
| 51 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                       |

| Question text  | Don't know (%) | Missing (%) | Missing + Don't know (%)* |
|--|----------------|-------------|---------------------------|
| 52 After the birth of your baby, did you ever receive conflicting information from health professionals about how to care for yourself or your baby? |                | 0.3         | 0.3                       |
| 53 Were you ever in any pain after the birth of your baby?   |                | 0.4         | 0.4                       |
| 54 Do you think the health professionals did everything they could to help you manage your pain after the birth of your baby?                        |                | 0.7         | 0.7                       |
| 55 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                       |
| 56 After the birth of your baby, were the health professionals taking care of you kind and caring?   |                | 0.1         | 0.1                       |
| 57 How clean were the wards or rooms you stayed in after the birth of your baby?   |                | 0.5         | 0.5                       |
| 58 How clean were the toilets and bathrooms you used after the birth of your baby?   |                | 0.5         | 0.5                       |
| 59 Did you see the health professionals wash their hands, or use hand gel to clean their hands, before touching you or your baby?                    | 10.8           | 0.4         | 11.2                      |
| 60 During your stay in hospital, were you ever bothered by any of the following?   |                | 1.5         | 1.5                       |
| 61 Did you have any hospital food during this stay?  |                | 0.3         | 0.3                       |
| 62 How would you rate the hospital food?   |                | 0.3         | 0.3                       |
| 63 Did you have any special dietary needs (e.g. vegetarian, diabetic, food allergies, religious, cultural, or related to your treatment)?            |                | 0.3         | 0.3                       |
| 64 Was the hospital food suitable for your dietary needs?  | 0.6            | 0.3         | 0.8                       |
| 65 Did the hospital provide access to food when you needed it?   | 5.8            | 0.5         | 6.3                       |
| 66 Were your decisions about how you wanted to feed your baby respected by the health professionals?   |                | 0.4         | 0.4                       |
| 67 Did you ever receive conflicting advice about feeding your baby from the health professionals?  |                | 0.5         | 0.5                       |
| 68 Did you try to breastfeed your baby?  |                | 0.4         | 0.4                       |
| 69 How long did you breastfeed your baby for?  |                | 0.1         | 0.1                       |
| 70 Did midwives in the hospital work with you to show you a good position for breastfeeding your baby?   |                | 0.4         | 0.4                       |
| 71 Did you feel involved in decisions about your discharge from hospital?  |                | 0.4         | 0.4                       |
| 72 Looking back, do you feel that the length of your stay in hospital was...?  |                | 0.3         | 0.3                       |
| 73 Before leaving hospital, were you given enough information about caring for yourself and your baby at home?                                       |                | 0.4         | 0.4                       |
| 74 Did hospital staff tell you who to contact if you were worried about your health or your baby's health after you left hospital?                   | 4.9            | 0.3         | 5.1                       |
| 75 Overall, how would you rate the care you received in the hospital after your baby was born?   |                | 0.5         | 0.5                       |
| 77 Was the impact of this complication or problem ...?   |                | 0.6         | 0.6                       |
| 78 In the first two weeks after arriving home, did you have a follow-up appointment with a midwife or nurse?   |                | 0.5         | 0.5                       |
| 79 During a follow-up appointment, did a midwife or nurse ask you how you were feeling emotionally?  | 2.3            | 0.2         | 2.5                       |
| 80 In general, did you feel that the midwife or nurse listened to you? [at follow-up appointment]  |                | 0.2         | 0.2                       |

| Question text  | Don't know (%) | Missing (%) | Missing + Don't know (%)* |
|--|----------------|-------------|---------------------------|
| 81 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                       |
| 82 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                       |
| 83 If friends and family asked about your maternity experience at the hospital where you gave birth, how would you respond?            |                | 0.5         | 0.5                       |
| 85 Apart from this recent birth, have you given birth before?  |                | 0.2         | 0.2                       |
| 86 Highest level of education completed  |                | 0.2         | 0.2                       |
| 87 In general, how would you rate your health?   |                | 0.3         | 0.3                       |
| 88 Which, if any, of the following long-standing conditions do you have (including age related conditions)?                            |                | 1.8         | 1.8                       |
| 89 Language mainly spoken at home  |                | 0.5         | 0.5                       |
| 90 Did you need, or would you have liked, to use an interpreter at any stage while you were in hospital?                               |                | 0.3         | 0.3                       |
| 91 Was an interpreter provided when you needed one?  |                | 1.4         | 1.4                       |
| 92 Aboriginal and/or Torres Strait Islander  |                | 0.2         | 0.2                       |
| 93 Who completed this survey?  |                | 0.1         | 0.1                       |
| 94 Do you give permission for the Bureau of Health Information to link your answers from this survey to health records related to you? |                | 0.5         | 0.5                       |

\* 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 Patient Survey questionnaire 2015**

| Derived measure  | Actual question text   | Derived measure categories     | Actual question responses   |
|--|--|--------------------------------|---|
| Received antenatal care  | Q1. How many weeks pregnant were you when you had your first appointment for antenatal care?                             | • Received care                | <ul style="list-style-type: none"> <li>• Less than 14 weeks pregnant</li> <li>• 14–19 weeks pregnant</li> <li>• 20–28 weeks pregnant</li> <li>• More than 28 weeks pregnant</li> <li>• Don't know/can't remember</li> </ul> |
|  |  | • Didn't receive care          | <ul style="list-style-type: none"> <li>• I didn't receive antenatal care</li> </ul>   |
| Received most antenatal care in a public hospital                          | Q2. Was this antenatal care provided by the hospital named on the cover of this booklet?                                 | • Most care in public hospital | <ul style="list-style-type: none"> <li>• Public hospital midwife/midwives</li> <li>• Public hospital obstetrician</li> </ul>  |
|  |  | • Most care elsewhere          | <ul style="list-style-type: none"> <li>• GP/family doctor</li> <li>• Private midwife/midwives</li> <li>• Private obstetrician</li> <li>• Other</li> </ul>   |
| Smoking status during time received antenatal care                         | Q16. Were you told about programs you could join or take part in to stop smoking?  | • Smoker                       | <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Don't know/can't remember</li> </ul>  |
|  |  | • Non-smoker                   | <ul style="list-style-type: none"> <li>• Not applicable, I don't smoke</li> </ul>   |
| Needed information about pain relief options for the birth                 | Q21. Where did you get information about pain relief options for this birth?   | • Needed information           | <ul style="list-style-type: none"> <li>• Antenatal check-ups</li> <li>• Birthing classes</li> <li>• Online (websites or apps)</li> <li>• Other</li> </ul>   |
|  |  | • Didn't need information      | <ul style="list-style-type: none"> <li>• I did not need this information</li> </ul>   |
| Type of birth  | Q25. What type of birth did you have?  | • Vaginal birth                | <ul style="list-style-type: none"> <li>• Vaginal birth</li> <li>• Assisted vaginal birth (with vacuum extraction or forceps)</li> </ul>   |
|  |  | • Caesarean section            | <ul style="list-style-type: none"> <li>• Caesarean section after going into labour (emergency)</li> <li>• Caesarean section before going into labour (planned)</li> </ul>   |
| Knew all the midwives or doctors who provided care during labour and birth | Q33. Did the midwives or doctors who you did not already know, introduce themselves to you during your labour and birth? | • Already knew them            | <ul style="list-style-type: none"> <li>• I already knew all the staff who cared for me</li> </ul>   |
|  |  | • Didn't know them             | <ul style="list-style-type: none"> <li>• Yes, always</li> <li>• Yes, sometimes</li> <li>• No</li> </ul>   |

| Derived measure  | Actual question text  | Derived measure categories  | Actual question responses  |
|--|---|---|--|
| Needed assistance from midwives or doctors during labour and birth                     | Q34. Were you able to get assistance from midwives or doctors when you needed it?   | <ul style="list-style-type: none"> <li>• Needed assistance</li> <li>• Didn't need assistance</li> </ul>       | <ul style="list-style-type: none"> <li>• Yes, always</li> <li>• Yes, sometimes</li> <li>• No</li> <li>• I did not need assistance</li> </ul>   |
| Wanted to be involved in decisions about the labour and birth                          | Q37. Were you involved, as much as you wanted to be, in decisions during your labour and birth?   | <ul style="list-style-type: none"> <li>• Wanted involvement</li> <li>• Didn't want involvement</li> </ul>     | <ul style="list-style-type: none"> <li>• Yes, definitely</li> <li>• Yes, to some extent</li> <li>• No</li> <li>• I did not want or need to be involved</li> </ul>                          |
| Needed information about how to care for self after the birth                          | Q50. 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)?        | <ul style="list-style-type: none"> <li>• Needed information</li> <li>• Not applicable to situation</li> </ul> | <ul style="list-style-type: none"> <li>• Yes, completely</li> <li>• Yes, to some extent</li> <li>• No</li> <li>• Not applicable to my situation</li> </ul>                                 |
| Needed information about how to care for the baby after the birth                      | Q51. 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)? | <ul style="list-style-type: none"> <li>• Needed information</li> <li>• Not applicable to situation</li> </ul> | <ul style="list-style-type: none"> <li>• Yes, completely</li> <li>• Yes, to some extent</li> <li>• No</li> <li>• Not applicable to my situation</li> </ul>                                 |
| After the birth, needed assistance or advice from health professionals in the hospital | Q55. After the birth of your baby, were you able to get assistance or advice from health professionals when you needed it?  | <ul style="list-style-type: none"> <li>• Needed assistance</li> <li>• Didn't need assistance</li> </ul>       | <ul style="list-style-type: none"> <li>• Yes, always</li> <li>• Yes, sometimes</li> <li>• No</li> <li>• I did not need assistance or advice</li> </ul>                                     |
| Made decisions about feeding the baby  | Q66. Were your decisions about how you wanted to feed your baby respected by the health professionals?  | <ul style="list-style-type: none"> <li>• Made decisions</li> <li>• Not applicable to situation</li> </ul>     | <ul style="list-style-type: none"> <li>• Yes, always</li> <li>• Yes, sometimes</li> <li>• No</li> <li>• Not applicable to my situation</li> </ul>  |
| Received advice about feeding the baby from health professionals in the hospital       | Q67. Did you ever receive conflicting advice about feeding your baby from the health professionals?   | <ul style="list-style-type: none"> <li>• Received advice</li> <li>• Not applicable to situation</li> </ul>    | <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Not applicable to my situation</li> </ul>  |
| Wanted to be involved in decisions about their discharge from hospital                 | Q71. Did you feel involved in decisions about your discharge from hospital?   | <ul style="list-style-type: none"> <li>• Wanted involvement</li> <li>• Didn't want involvement</li> </ul>     | <ul style="list-style-type: none"> <li>• Yes, definitely</li> <li>• Yes, to some extent</li> <li>• No, I did not feel involved</li> <li>• I did not want or need to be involved</li> </ul> |
| Needed information about caring for self and baby at home                              | Q73. Before leaving hospital, were you given enough information about caring for yourself and your baby at home?  | <ul style="list-style-type: none"> <li>• Needed information</li> <li>• Didn't need information</li> </ul>     | <ul style="list-style-type: none"> <li>• Yes, completely</li> <li>• Yes, to some extent</li> <li>• No</li> <li>• I did not need this information</li> </ul>                                |

| Derived measure   | Actual question text  | Derived measure categories   | Actual question responses  |
|---|---|--|--|
| Experienced complication or problem during or shortly after hospital stay                     | Q76. During your hospital stay or soon afterwards, did you experience any of the following complications or problems? | <ul style="list-style-type: none"> <li>Experienced complication</li> </ul> | <ul style="list-style-type: none"> <li>An infection</li> <li>Excessive bleeding/haemorrhage</li> <li>A negative reaction to medication</li> <li>Complications as a result of an operation or surgical procedure</li> <li>Complications as a result of test, X-rays or scans</li> <li>A blood clot in the leg/DVT</li> <li>A fall</li> <li>Any other complication or problem</li> </ul>                                 |
|   |   | <ul style="list-style-type: none"> <li>None reported</li> </ul>            | <ul style="list-style-type: none"> <li>None of these</li> <li>Missing</li> </ul>   |
| In the first 2 weeks after arriving home, had a follow-up appointment with a midwife or nurse | Q78. In the first 2 weeks after arriving home, did you have a follow-up appointment with a midwife or nurse?          | <ul style="list-style-type: none"> <li>Had follow-up</li> </ul>            | <ul style="list-style-type: none"> <li>Yes, with a midwife at home</li> <li>Yes, with a nurse at home</li> <li>Yes, with a midwife or nurse at a clinic</li> </ul>   |
|   |   | <ul style="list-style-type: none"> <li>Didn't have follow-up</li> </ul>    | <ul style="list-style-type: none"> <li>No</li> </ul>   |
| Long-standing health conditions   | Q88. Which, if any, of the following long-standing conditions do you have (including age related conditions)?         | <ul style="list-style-type: none"> <li>Has condition/s</li> </ul>          | <ul style="list-style-type: none"> <li>Deafness or severe hearing impairment</li> <li>Blindness or partially sighted</li> <li>A long-standing illness (e.g. cancer, HIV, diabetes, chronic heart disease)</li> <li>A long-standing physical condition</li> <li>A learning disability</li> <li>A mental health condition (e.g. depression)</li> <li>A neurological condition (e.g. Alzheimer's, Parkinson's)</li> </ul> |
|   |   | <ul style="list-style-type: none"> <li>None reported</li> </ul>            | <ul style="list-style-type: none"> <li>None of these</li> <li>Missing</li> </ul>   |