Patient Safety Unit

Report on the Obstetric VLAD Indicator Review

Summary of Activity

February 2014
PART 1
EXECUTIVE SUMMARY
This executive summary presents a high-level overview of the changes to the obstetric indicator definitions as recommended by the Queensland Health Obstetric VLAD Indicator Working Group. The report is a final report; reflecting revisions to existing indicators and outlining the work that was undertaken to explore the possible introduction of new indicators. More detail on what was considered in the review is found within the report. The main differences between the specifications of the old and new indicator definitions are found on page 5.

The existing VLAD obstetric indicators are:
- Selected Primiparae Induction of Labour
- Selected Primiparae Caesarean Section (Public/Private)
- Selected Primiparae Third and Fourth Degree Perineal Tears
- Selected Primiparae Episiotomy (Public/Private)
- Selected Primiparae Instrumental Delivery (Public/Private)

RECOMMENDATIONS FROM THE WORKING GROUP
The Working Group considered the existing indicators, the potential inclusion and exclusion criteria and risk adjustment co-morbidities with particular reference to:
- Current recommended practice
- Clinical relevance
- Differences in rates of practices for public and private patients

The Working Group agreed that, wherever possible, the new VLAD indicator definitions should align to the ACHS definitions for Obstetric practice.

The group made 16 recommendations.

Recommendation 1
The Working Group recommends that the definition of normal gestation continues as 37 weeks and 0 days to 40 weeks and 6 days.

Recommendation 2
The Working Group recommends that the Selected Primiparae Instrumental Delivery (Public/Private) indicator continues unchanged.

Recommendation 3
The Working Group recommends that the Selected Primiparae Induction of Labour Indicator is split by private patients and public patients.

Recommendation 4
The Working Group recommends that the VLAD indicators report Caesarean Section rates by:
- Public patient at public facility
- Private patient at public facility
- Private patient at private facility.

Recommendation 5
The Working Group recommends a revised indicator for assisted births in public hospitals will monitor episiotomies and / or third and fourth degree tears with risk adjustment for vacuum delivery / forceps delivery.
Supportive charts will be available with data breaking down by episiotomy and by third and fourth degree tears.

Recommendation 6
The Working Group recommends that unassisted births in public hospitals are monitored for a combined episiotomies and / or third and fourth degree perineal tears
indicator, with supportive charts available breaking down the data by episiotomy and by third and fourth degree tears.

Recommendation 7
The Working Group recommends that for private facilities, monitoring for unassisted births has one combined indicator for episiotomies and/or third and fourth degree perineal tears.

Recommendation 8
The VLAD committee is asked to support not introducing Admissions to Special Care Nursery or NICU as a new indicator but establish an alternative way for a regular statewide review of the ACHS data on Admission to SCN and NICU to occur.

Recommendation 9
The Working Group recommends that shoulder dystocia is an exclusion criterion for episiotomy and/or third and fourth degree tears for both assisted birth indicators and unassisted birth indicators.

Recommendation 10
The Working Group recommends the risk adjustment factors for episiotomy and/or third and fourth degree tears only for unassisted births to include; baby weight by grouping; underweight mother i.e. a pre pregnancy BMI of less than 18.5; mothers’ age; fetal distress.

Recommendation 11
The Working Group recommends the risk adjustment factors for episiotomy and/or third and fourth degree tears only for assisted births to include; baby weight by grouping; forceps delivery.

Recommendation 12
The Working Group recommends that for the Selected Primiparae Induction of Labour indicator, obstetric cholestasis be continued to be used as an exclusion criterion.

Recommendation 13
The Working Group recommends the risk adjustment factors for the Selected Primiparae Induction of Labour indicator are to include; Antepartum haemorrhage; BMI of greater than or equal to 30; Diabetes - split by method of control; Hypertensive disorders; Intrauterine growth retardation; Premature rupture of membranes; and Signs of fetal hypoxia.

Recommendation 14
The Working Group recommends that for the Selected Primiparae Caesarean Section (Public/Private) indicator, placenta praevia is to be used as an exclusion criterion.

Recommendation 15
The Working Group recommends the risk adjustment factors for the Selected Primiparae Caesarean Section (Public/Private) indicator are to include; Anogenital herpes viral infection; BMI of greater than or equal to 30; Diabetes – split by method of control; and Hypertensive disorders.
**Recommendation 16**
The Working Group recommends that risk adjustment factors for the Selected Primiparae Instrumental Delivery indicator are to include; Fetal distress; and Shoulder dystocia.

**SUMMARY**
The main changes recommended by the Working Group are given in the table below.

<table>
<thead>
<tr>
<th>Old Indicator</th>
<th>Change</th>
<th>New Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Primiparae Induction of Labour</td>
<td>Split by public and private patients</td>
<td>Selected Primiparae Induction of Labour (Public/Private)</td>
</tr>
<tr>
<td>Selected Primiparae Caesarean Section (Public/Private)</td>
<td>Split into 3: 1. Public patients at public facility; 2. Private patients at public facility; 3. Private patients at private facility</td>
<td>Selected Primiparae Caesarean Section (Public/Private at Public/Private)</td>
</tr>
<tr>
<td>Selected Primiparae Third and Fourth Degree Perineal Tears &amp; Selected Primiparae Episiotomy (Public/Private)</td>
<td>Combine episiotomies with 3rd and 4th degree tears and split both by assisted or unassisted birth, and by public and private facility</td>
<td>Selected Primiparae Combined Third and Fourth Degree Perineal Tears and Episiotomies for Unassisted births (Public/Private)</td>
</tr>
<tr>
<td>Selected Primiparae Instrumental Delivery (Public/Private)</td>
<td>No change</td>
<td>Selected Primiparae Instrumental Delivery (Public/Private)</td>
</tr>
</tbody>
</table>

In summary:

The proposed revised Obstetric Indicators are:
- Selected Primiparae Induction of Labour (Public/Private)
- Selected Primiparae Caesarean Section (Public/Private at Public/Private)
- Selected Primiparae Combined Episiotomy and or Third and Fourth Degree Perineal Tears and Episiotomies - Unassisted births (Public/Private)
- Selected Primiparae Episiotomy and or Third and Fourth Degree Perineal Tears - Assisted births (Public)
- Selected Primiparae Instrumental Delivery (Public/Private)

The revised indicators will be implemented on 1st January 2014.
PART 2
DETAILED REVIEW

BACKGROUND
The Variable Life Adjusted Display (VLAD) monitoring methodology was introduced in Queensland Health in 2007. The initial suite of clinical indicators included two Obstetric Indicators:

- Selected Primiparae Caesarean Sections (Public/Private)
- Selected Primiparae Induced Births

These indicators were reviewed and in 2009, three additional indicators were developed:

- Selected Primiparae Third and Fourth Degree Perineal Tears
- Selected Primiparae Episiotomy (Public/Private)
- Selected Primiparae Instrumental Delivery (Public/Private)

Obstetric Indicator Working Group
In December 2012, the Obstetric VLAD Indicator Working Group was re-formed to review the current Obstetric Indicators for ongoing relevance. An Expression of Interest to join the Working Group was distributed to VLAD stakeholders across Queensland. These stakeholders included: members of the previous group; Statewide Maternity and Neonatal Clinical Network; Queensland Maternal and Perinatal Quality Council; and, HHS and the Office of the Chief Nursing and Midwifery Officer. All staff that expressed interest were accepted to participate in the Working Group. Membership included Directors of Obstetrics & Gynaecology (x4); Clinical Midwives (x6); a Manager of Coding Services; a Director of Nursing & Midwifery; and, representatives of the Patient Safety Unit. The Working Group first met in March 2013. See Appendix A for a listing of the meeting attendances.

This document outlines the review of the VLAD obstetric indicators undertaken by the Working Group.

INDICATOR REVIEW PROCESS
The review involved an iterative process of statistical and clinical debate and discussion. Using the indicator selection criteria, the existing indicators were rigorously evaluated.

Indicator Selection Criteria
The criteria used to evaluate the clinical indicators throughout the review process were:

- Clinical significance: The significance in terms of burden to the health system and individual patients, and recognised best clinical practice.
- Volume: Sufficiency of patient numbers to provide a statistically reliable measure
- Indicator clarity: The indicator definition must be clearly defined and reliable
- Responsive potential: The disease, condition or procedure type has to be able to be systematically improved
- Systematic Data Collection: The data used to derive the indicators must be collected systematically across hospitals e.g. Queensland Hospital Admitted Patient Data Collection
- Distinction between women presenting as public and as private patients

RATIONALE
The Working Group considered the existing VLAD indicators in the context of:

- Other current maternity indicator reporting in Australia (see appendix B for a summary of the National indicators)
- History of flagging
- Current inclusion and risk adjustment criteria
- Suggestions on changes required
- Suggestions on new indicators

Reflecting the National indicators, The Working Group then considered aligning the VLAD definitions with those used by the Australian Council of Healthcare Standards. The group
also considered suggestions to combine episiotomy and tear indicators, separating public and private patients, only looking at fourth degree tears and widening risk adjustment factors. Five possible new indicators were also considered, namely:

- Admissions to special care baby nursery or NICU
- Vaginal Birth following Caesarean Section (VBAC)
- Post Partum Haemorrhage
- Epidural
- Apgar <at 5 minutes
- Post Caesarean Infection

**PART 3**

**INDICATOR DEFINITION**

The Working Group considered the criteria used in defining Selected Primparae. The discussion is summarised in the table below.
### Selected Primiparae - Definition

#### Table 1: Differences between old and new Selected Primiparae definitions

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Criteria</th>
<th>Discussion</th>
<th>Decision/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td><strong>Mother’s age group</strong> 20-34 years</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>All</td>
<td><strong>Previous deliveries</strong> No previous deliveries</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>All</td>
<td><strong>Plurality</strong> Singleton birth</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>All</td>
<td><strong>Completed weeks of gestation</strong> 37 weeks and 0 days to 40 weeks and 6 days</td>
<td>The Working Group had agreed at their first meeting to alter the definition of Selected Primiparae for the purposes of the obstetric indicators by extending the upper limit on a baby’s gestational age (from 40 weeks and 6 days to 41 weeks and 6 days) to align with the ACHS definition. It has since been discovered that this does <strong>not</strong> match the ACHS definition. The ACHS Obstetrics Indicators, Clinical Indicator User Manual, Version 7.2 uses an upper limit on a baby’s gestational age of 40 weeks and 6 days (the same as the obstetric indicators current definition). The group considered the impact of using 40 weeks and 6 days as the upper limit on a baby’s gestational age versus 41 weeks and 6 days when defining selected primiparae. It was noted that there was minimal impact on numbers of flags generated by the indicators; 40 weeks and 6 days is consistent with state and national guidelines; and ensures the Induction of Labour indicator only considers pregnancies where an induction is not clinically indicated.</td>
<td>Continue with the definition of gestation as 37 weeks and 0 days to 40 weeks and 6 days.</td>
</tr>
<tr>
<td>All</td>
<td><strong>Presentation at birth</strong> Cephalic</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Indicator</td>
<td>Criteria</td>
<td>Discussion</td>
<td>Decision/Action</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Currently NOT in VLAD definition</td>
<td>Conditions which ACHS(V7.1) would preclude a woman being a Selected Primipara If a woman contracts one of those conditions listed that have a statement in parentheses about the condition requiring hospital admission, then that woman should be excluded from being a selected primipara.</td>
<td>The group recommended not to align with the ACHS on this criteria. If the conditions outlined in the ACHS v7.1 were excluded, this would remove a significant number of women from the sample of interest. In examining these conditions, it was also determined that the majority of them should not impact on the outcome of the woman or the decision to undertake a procedure and therefore should not be excluded. If there are any specific conditions that impact on the indicators then they can be excluded or risk adjusted for.</td>
<td>No change</td>
</tr>
</tbody>
</table>
The group considered changing the definition criteria and agreed to aligning gestation to the ACHS definition i.e. the current definition of gestation in completed weeks is 37 weeks and 0 days to 40 weeks and 6 days.

Recommendation 1
The Working Group recommends that the definition of normal gestation continues as 37 weeks and 0 days to 40 weeks and 6 days.

PART 4
REVIEW OF EXISTING INDICATORS

The Working Group considered all of the existing indicators with regard to:
- Current recommended practice
- Clinical relevance
- Differences in rates of practices for public and private patients

The discussion for each indicator is summarised below.

Selected Primiparae Instrumental Delivery - Definition

<table>
<thead>
<tr>
<th>Discussion</th>
<th>Decision/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Working Group considered the feedback received and agreed that there is clinical value in continuing the monitoring of this indicator. Individual aspects of the definition will be considered, including risk adjustment factors, to assess whether improvements can be made.</td>
<td>Continue to monitor this indicator in VLAD.</td>
</tr>
</tbody>
</table>

Recommendation 2
The Working Group recommends that the Selected Primiparae Instrumental Delivery (Public/Private) indicator continues unchanged.
As this still has the potential to identify patient safety and quality issues.

Selected Primiparae Induction of Labour - Definition

This is currently reported as a joint VLAD for public and private patients. There are recognised differences in the respective rates of induction; as such the group agreed to have one indicator for patients and another indicator for public patients

Recommendation 3
The Working Group recommends that the Selected Primiparae Induction of Labour Indicator is split by private patients and public patients.
### Selected Primiparae Caesarean Section (Public / Private) - Definition

<table>
<thead>
<tr>
<th>Discussion</th>
<th>Decision/Action</th>
</tr>
</thead>
</table>
| **Yearly counts for women having Caesarean Section, for the past 4 years, were presented. The figures were shown by:**  
  • Public patient at public facility  
  • Private patient at public facility  
  • Private patient at private facility  
  
  These show a consistently higher rate of caesarean section for private patients then public patients, in either facility. | **Where there are sufficient numbers, the VLAD indicators will report Caesarean Section rates by:**  
  • Public patient at public facility  
  • Private patient at public facility  
  • Private patient at private facility  
  
  Where the number of private patients at public facilities is too low, these patients will be excluded from the VLAD. |

#### Recommendation 4

The Working Group recommends that the VLAD indicators report Caesarean Section rates by:

• Public patient at public facility  
• Private patient at public facility  
• Private patient at private facility.

Where the number of private patients at public facilities is too low, these patients will be excluded from the VLAD.

### Selected Primiparae Episiotomy and 3\textsuperscript{rd} / 4\textsuperscript{th} degree Perineal Tears (Public / Private) - Definition

The Working Group confirmed the indicator required for unassisted births for public facilities is one combined indicator for episiotomy and / or third and fourth degree tears. Supplementary charts giving the performance for episiotomy only and another chart for third and fourth degree tears only, without any control (or flagging) levels, will be provided if the indicator has flagged. These will clearly state that the additional charts are for information only. For unassisted births in private facilities, the indicator will also be one combined indicator for episiotomy and / or third and fourth degree tears. The rates for private facilities are too low to provide the supplementary graphs.

The Working Group had previously proposed an indicator for assisted births in public hospitals, only monitoring for third and fourth degree tears. There is concern that by only monitoring assisted births for third and fourth degree tears, those who prefer not to routinely perform episiotomies for forceps deliveries may argue their position is the primary factor when responding to VLAD flags.

The separation of episiotomy rates from 3\textsuperscript{rd} and 4\textsuperscript{th} degree tears was felt to be unhelpful and the group recommend amalgamating the two indicators with one new indicator covering all significant perineal damage. Conversely the current reporting regardless of method of birth was felt to disguise differences in rates and practice. The numbers of assisted births in private hospitals is too low to allow an indicator to be developed. Three changes to the current Selected Primiparae Third and Fourth Degree Perineal Tears Indicator & Selected Primiparae Episiotomy (Public/Private) Indicators are recommended.

The Working Group debated the different approaches to using episiotomy for forceps delivery versus allowing third and fourth degree tears. The group accepts that there are
different views on this. The group considered trying one combined indicator with supplementary graphs available for information and to aid investigations. The group also considered reporting on vacuum births only, especially as these are increasing in prevalence. The group also considered if it may be possible to risk adjust for forceps versus vacuum deliveries. In this case, the probability would be given for a woman having an episiotomy or third/ fourth degree tear based on the method of assisted birth. It may be possible to have a separate indicator for vacuum deliveries only but it is thought that the number of forceps deliveries alone is too small to allow an indicator to be developed.

The Working Group considered 3 options for a new indicator:
1. One indicator for all assisted births for episiotomies and/or third and fourth degree tears (previously presented)
2. One indicator for vacuum deliveries for episiotomy and/or third and fourth degree tears
3. One indicator for assisted births for episiotomies and/or third and fourth degree tears risk adjusted for vacuum delivery / forceps delivery.

The group decided on option 3, one indicator for assisted births for episiotomies and/or third and fourth degree tears risk adjusted for vacuum delivery / forceps delivery.

Recommendation 5
The Working Group recommends a revised indicator for assisted births in public hospitals will monitor episiotomies and/or third and fourth degree tears with risk adjustment for vacuum delivery / forceps delivery.

Recommendation 6
The Working Group recommends that unassisted births in public hospitals are monitored for a combined episiotomy and/or third or fourth degree perineal tears indicator, with supportive charts available breaking down the data by episiotomy and by 3rd / 4th degree tears.

Recommendation 7
The Working Group recommends that for private facilities, monitoring for unassisted births has one combined indicator for episiotomy and/or third and fourth degree perineal tears.

Where private patients are using public facilities, the figures will be included within the public figures. HHSs may wish to review this locally and the next review of the Obstetric VLADs in 2015 may reconsider the state-wide figures.

PART 5
NEW INDICATOR DEVELOPMENT

Following a request for suggestions, six potential new indicators were considered. These were:
- Admissions to Special Care Nursery or NICU
- Vaginal Birth following Caesarean Section (VBAC)
- Post Partum Haemorrhage
- Epidural
- Apgar <7 at 5 minutes
- Post Caesarean Infection

The rate and counts for each potential new indicator was considered by The Working Group. The detail can be found in appendix D.

The table below summarises the discussion for the potential new indicators.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Results</th>
<th>Decision/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions to Special Care Nursery or NICU</td>
<td>The rate was presented and the team confirmed that a VLAD can be produced.</td>
<td>To be developed as a new VLAD. Definitions and risk factors to be presented to The Working Group.</td>
</tr>
<tr>
<td>Vaginal Birth following Caesarean Section (VBAC)</td>
<td>The rate was presented and the team confirmed that a VLAD can be produced.</td>
<td>To be considered for a new VLAD. Definitions and risk factors to be presented to The Working Group.</td>
</tr>
<tr>
<td>Post Partum Haemorrhage</td>
<td>The figures for were too small to produce a VLAD.</td>
<td>Accepted by the group.</td>
</tr>
<tr>
<td>Epidural</td>
<td>The rate was presented and the team confirmed that a VLAD can be produced.</td>
<td>The group agreed this should be considered for a VLAD at a subsequent review.</td>
</tr>
<tr>
<td>Apgar &lt;7 at 5 minutes</td>
<td>The figures for were too small to produce a VLAD.</td>
<td>Accepted by the group.</td>
</tr>
<tr>
<td>Post Caesarean Infection</td>
<td>Work has commenced on analysing the rate, and further work can be undertaken if required by the group.</td>
<td>No further work required at this time.</td>
</tr>
</tbody>
</table>

The two new indicators were agreed for further work: Admissions to Special Care Nursery or NICU and Vaginal Birth following Caesarean Section (VBAC).

**New indicator definitions**

**Possible New Indicator – Admission to Special Care Baby Nursery (SCN) or NICU**

The Working Group considered this as a possible new indicator. The definition was confirmed as: *Term babies transferred or admitted to a Neonatal Intensive Care Nursery (NICN) or Special Care Nursery (SCN) for reasons other than congenital anomaly. Term refers to gestation of equal or greater than 37° weeks gestation.*

The group debated whether the admission should be for a minimum period, for example 8 hours. The group agreed to seek expert input from a neonatologist out of session and take their advice. A neonatologist was contacted and advised The Working Group that there is no standardisation of criteria for admission to Special Care Nursery or NICU and some units admit babies with respiratory transient illness after caesarean section for a 2 hour (or so) period of observation. Other units recover the mother and baby together and don't admit for this. Again he says there is no one standard on this. His view is that if we were to go for a minimum time period for admissions, say 8 hours, we would miss most of the babies admitted for all reasons. He suggested looking at all admissions, but being mindful of the units that do the 2 hour observations period.

The Working Group accepted the recommendation to have not time restriction to the new indicator. The group agreed there should be 2 new indicators for admission to Special Care Baby Nursery or NICU; one applied to private hospitals and one applied to public hospitals

Recommendation 8 initially suggested that two new indicators are introduced:
- Admissions to Special Care Nursery or NICU for public facilities
- Admissions to Special Care Nursery or NICU for private facilities.

The working group has reconsidered this recommendation. At the February 2014 meeting, the working group considered the analysis of results for admission to NICU or SCN.
Comments from a consultant neonatologist who was not able to attend the meeting in person were also presented. The working group identified a number of concerns with introducing the proposed new indicator. These included:

1. A lack of clarity of the purpose of the new indicator.
2. The new indicator would not be able to detect differences in clinical practices as it would be heavily influenced by different processes between hospitals, for example some hospitals admit babies to NICU or SCN for the insertion of IV an cannula whilst in other hospitals this is undertaken in the maternity suite.
3. There would be duplication of reporting as this information is already collected under the ACHCS scheme.
4. The indicator would need to have consideration of the impact of inter-hospital transfers.

The conclusion of the group was that this was not a good indicator to introduce.

A summary of the working group discussions were relayed by phone call to two Consultant Obstetricians. Both support the working groups view to not proceed with the VLAD for admission. One noted that the ACHS data is provided to HHSs where they can see their own performance however this was not reviewed at a state-wide level. It was suggested that the Chair of the state-wide neonatal group (SMNCN) is approached and asked to look at this across Queensland. This proposal will be presented to the VLAD committee and if they are supportive, the Patient Safety Board are asked to consider and approach the SMNCN.

**Recommendation 8**
The VLAD committee is asked to support not introducing this new indicator but establish an alternative way for a regular state-wide review of the ACHS data on Admission to SCN and NICU to occur.

**New Indicator – Vaginal birth following caesarean section (VBAC)**

Whilst initially The Working Group had asked for this to be a new indicator, and the VLAD team confirmed this was feasible, there is still some debate as to the clinical benefits and drawbacks of this. The group debated the different views, the influence of recognising the mother’s choice, practitioners’ preferences, and the reason for the initial decision for caesarean section. It was felt that there were many variables in deciding whether VBAC should be attempted and there is no standardised practice between clinicians. In the absence of clear clinical evidence for or against VBCS it was agreed that this should not be introduced as a new indicator.

The group considered whether HHS’s could be provided with figures on these rates. It was noted that the ACHS provides figures on VBAC on a monthly basis to HHS from the Health Statistics Unit data. As such, the group agreed that this was not a role for VLADs. The 2013 QMPQC report will also include a section of feedback which HHSs may utilise as a source of data on their VBAC rates and see how these compare with similar sized services. ACHS reports also include.

The Working Group agreed that VBAC will not be developed as new indicator.

**PART 6**
**RISK ADJUSTMENT FACTORS FOR NEW INDICATOR**

**Admission to Special Care Baby Nursery or NICU –risk adjustment and exclusion criteria**

The Working Group agreed the indicator should reflect babies with a low birth weight. This could be quantified as 2.5 kg or under or 2.0 kg or under and both were considered. The group agreed explore the use of 2.0 kg or less as risk adjustment criteria.
The Working Group also considered the following risk adjustment criteria and agreed these should not be included:

- Hydrocephalous (if known will be captured as a congenital anomaly)
- Fetal Alcohol Syndrome (not able to be diagnosed accurately at birth)
- High jaundice (not able to quantify the level of bilirubin at birth and the numbers of severe rhesus disease are thought to be low. The VLAD team will confirm these numbers and feedback to the group)
- Mother in intensive care not thought to be sufficient numbers to risk adjusted for and as such could be a factor in investigating a flag but not a risk adjustment criteria
- Eclampsia might be a reason for the mother to be in Critical Care but alone is not a determinant of the baby requiring special care

The group considered if any exclusion criteria and risk adjustment factors should apply. It was felt that known congenital anomaly as the reason for admission to SCBN or NICU should be considered as a possible exclusion criteria. This has been confirmed as one of the ACHS exclusion criteria, and as such the group agreed it should also be an exclusion criterion from the indicator as well. The VLAD team will explore the feasibility of capturing this data and will inform The Working Group of the outcome.

The Working Group considered if diabetes should be risk adjusted for. The opinion of a neonatologist was that this is a contributory factor especially for gestational diabetes. He suggested this is included as risk adjustment criteria.

**PART 7**

**RISK ADJUSTMENT FACTORS FOR EXISTING INDICATORS**

The current risk adjustment factors and potential new factors were considered for each existing indicator. Full details of the analysis undertaken and presented to The Working Group can be found in Appendix D. This appendix also gives further detail of the odds ratios and the rates for each category.

The following tables summarises the risk factors considered for each indicator.
### EPISIOTOMY / TEARS (UNASSISTED/ASSISTED BIRTHS/PUBLIC/PRIVATE)

<table>
<thead>
<tr>
<th>Condition/patient characteristic</th>
<th>ICD 10-AM codes/categories</th>
<th>Episiotomy/Tears</th>
<th>Episiotomy</th>
<th>3rd/4th degree Tears</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public facilities - Unassisted vaginal births</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby weight</td>
<td>&lt; 3.5 kg, 3.5 - 4 kg, &gt; 4 kg</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>Underweight</td>
<td>BMI of &lt; 18.5</td>
<td>Significant</td>
<td>Significant</td>
<td>NOT significant</td>
</tr>
<tr>
<td>Mother's age</td>
<td>20-24 years, 25 – 29 years, 30-34 years</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>Shoulder dystocia</td>
<td>O66.0</td>
<td>Patients with shoulder dystocia are excluded from this indicator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal distress(^\text{a})</td>
<td>O68</td>
<td>Significant</td>
<td>Significant</td>
<td>NOT significant</td>
</tr>
<tr>
<td><strong>Public facilities - Assisted vaginal births</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby weight</td>
<td>&lt; 3.5 kg, 3.5 - 4 kg, &gt; 4 kg</td>
<td>Significant</td>
<td>Significant</td>
<td>NOT significant</td>
</tr>
<tr>
<td>Underweight</td>
<td>BMI of &lt; 18.5</td>
<td>NOT significant</td>
<td>NOT significant</td>
<td>NOT significant</td>
</tr>
<tr>
<td>Mother's age</td>
<td>20-24 years, 25 – 29 years, 30-34 years</td>
<td>NOT significant</td>
<td>NOT significant</td>
<td>NOT significant</td>
</tr>
<tr>
<td>Shoulder dystocia</td>
<td>O66.0</td>
<td>Insufficient numbers (patients with shoulder dystocia are excluded from this indicator)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal distress</td>
<td>O68</td>
<td>NOT significant</td>
<td>NOT significant</td>
<td>NOT significant</td>
</tr>
<tr>
<td>Forceps delivery</td>
<td></td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td><strong>Private Facilities - Unassisted vaginal births</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby weight</td>
<td>&lt;3.5 kg, 3.5 - 4 kg, &gt;4 kg</td>
<td>NOT significant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>BMI of &lt; 18.5</td>
<td>Significant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother's age</td>
<td>20-24 years, 25 – 29 years, 30-34 years</td>
<td>NOT significant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder dystocia</td>
<td>O66.0</td>
<td>Insufficient numbers (patients with shoulder dystocia are excluded from this indicator)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal distress</td>
<td>O68</td>
<td>NOT significant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SELECTED PRIMIPARAE INDUCTION OF LABOUR (PUBLIC/PRIVATE)

<table>
<thead>
<tr>
<th>Condition/patient characteristic</th>
<th>ICD 10-AM codes</th>
<th>Type</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antepartum haemorrhage, NEC</td>
<td>O46</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Fetal demise</td>
<td>O36.4</td>
<td>Current</td>
<td>Insufficient numbers</td>
</tr>
<tr>
<td>Gestational diabetes</td>
<td>O24.42, O24.43, O24.44, O24.49</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Gestational diabetes – insulin dependant</td>
<td>O24.42</td>
<td>Suggested</td>
<td></td>
</tr>
<tr>
<td>Hypertensive disorders (including chronic renal disease)</td>
<td>O10, O11, O13, O14, O15, O16</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Condition/patient characteristic</td>
<td>ICD 10-AM codes</td>
<td>Type</td>
<td>Outcome</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Intrauterine growth retardation</td>
<td>O36.5</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Obstetric cholestasis</td>
<td>K83.1, O26.6</td>
<td>Suggested</td>
<td>Greater than 80% of women with this condition are induced, use as an exclusion criteria</td>
</tr>
<tr>
<td>Premature rupture of membranes</td>
<td>O42</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Signs of fetal hypoxia</td>
<td>O36.3, O68, O69.0 – O69.2 (excluding P20)</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Body mass index &gt;= 30</td>
<td></td>
<td>Suggested</td>
<td>Significant</td>
</tr>
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</table>

### CAESAREAN SECTION

<table>
<thead>
<tr>
<th>Condition/patient characteristic</th>
<th>ICD 10-AM codes</th>
<th>Type</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anogenital herpesviral [herpes simplex] infection</td>
<td>A60, N77.0</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Compound presentation</td>
<td>O64.5</td>
<td>Suggested</td>
<td>Insufficient numbers</td>
</tr>
<tr>
<td>Gestational diabetes</td>
<td>O24.42, O24.43, O24.44, O24.49</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Gestational diabetes – insulin dependant</td>
<td>O24.42</td>
<td>Suggested</td>
<td>Significant</td>
</tr>
<tr>
<td>Hypertensive disorders (including chronic renal disease)</td>
<td>O10, O11, O13, O14, O15, O16</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Placenta praevia</td>
<td>O44</td>
<td>Current</td>
<td>Patients with this condition is excluded from this indicator</td>
</tr>
<tr>
<td>Body mass index &gt;= 30</td>
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</table>

### INSTRUMENTAL DELIVERY

<table>
<thead>
<tr>
<th>Condition/patient characteristic</th>
<th>ICD 10-AM codes</th>
<th>Type</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal distress</td>
<td>O68</td>
<td>Current</td>
<td>Significant</td>
</tr>
<tr>
<td>Shoulder dystocia</td>
<td>O66.0</td>
<td>Current</td>
<td>Significant</td>
</tr>
</tbody>
</table>
Episiotomy and 3rd and 4th degree tears - Risk adjustment and exclusion factors

The Working Group requested further analysis of data on mothers with a BMI above 30 and link with for episiotomy, episiotomy combined with tears and for 3rd / 4th degree tears only.

The Working Group asked if female genital mutilation (FGM) had been considered as a risk factor for either assisted or unassisted births. It was agreed that as the numbers are small, this could be included as a relevant factor in an investigation if a flag has been raised.

The Working Groups considered the impact of shoulder dystocia on episiotomy and third and fourth degree tears. The group noted that since the low numbers mean shoulder dystocia cannot be used as a risk adjustor factor for third and fourth degree perineal tear for unassisted births, it should be an exclusion criterion. This should apply for both unassisted and assisted births and in both private and public facilities.

The Working Group considered the impact of the baby’s weight on method of delivery and likely perineal damage. The Working Group agreed that this should be included as risk adjustment criteria, by groupings of baby weight.

Recommendation 9
The Working Group recommends that shoulder dystocia is an exclusion criterion for episiotomy and third and fourth degree tears for both assisted birth indicators and unassisted birth indicators.

Recommendation 10
The Working Group recommends the risk adjustment factors for episiotomy and / or third and fourth degree tears only for unassisted births to include; baby weight by grouping; underweight mother i.e. a pre pregnancy BMI of less than 18.5; mothers’ age; fetal distress.

Recommendation 11
The Working Group recommends the risk adjustment factors for episiotomy and / or third and fourth degree tears only for assisted births to include; baby weight by grouping; forceps delivery.

Selected Primiparae Induction of Labour - Risk adjustment and exclusion factors

The numbers of cases of fetal demise were too low to be risk adjusted for the induction of labour indicator.

As over 80% of cases of obstetric cholestasis have an induction it was agreed that this should be an exclusion criteria.

Analysis of the impact of having diabetes on the likelihood of a woman having an induction was discussed. The impact of gestational diabetes, split into non-insulin dependent and insulin dependant, was presented.

Further discussion followed on the need to break this down into the following:
- Non diabetic
- Diabetic (non gestational)
- Diet controlled gestational diabetics
- Tablet controlled gestational diabetics
- Insulin controlled gestational diabetics

The Working Group considered the current definitions, inclusion and exclusion criteria and the risk adjustment criteria for Selected Primiparae Induction of Labour. The group agreed to the following changes to the selected co-morbidities used for the risk adjustment
Criteria:
- Add mothers body mass index (less than 30 or 30 and greater)
- Revise diabetes (no diabetes; diabetes, other treatment; diabetes, oral hypoglycaemic therapy; and diabetes, insulin treated) co-morbidities within the risk adjustment model
- Remove fetal demise
- Correct the wording of Intrauterine Growth Retardation to Intrauterine Growth Restriction

Recommendation 12
The Working Group recommends that for the Selected Primiparae Induction of Labour Indicator, obstetric cholestasis to be continued to be used as an exclusion criterion.

Recommendation 13
The Working Group recommends the risk adjustment factors for the Selected Primiparae Induction of Labour indicators are to include; Antepartum haemorrhage; BMI of greater than or equal to 30; Diabetes – split by method of control; Hypertensive disorders; Intrauterine growth restriction; Premature rupture of membranes; and Signs of fetal hypoxia.

Selected Primiparae Caesarean Section - Risk adjustment and exclusion factors.

The inclusion and exclusion criteria for Selected Primiparae Caesarean Section indicator were each reviewed by The Working Group.

It was decided at meeting 2 to continue to use placenta praevia in the list of risk adjustment criteria and not as an exclusion, even though the rates of Caesarean Section for mothers with Placenta praevia was high. However, after further analysis, It was found that the risk adjustment model was not consistently able to be calculated when using placenta praevia in the list of risk adjustment criteria. This was due to the Caesarean Section rates increasing over time to near 100% for mothers with placenta praevia recorded.

As the more severe the grade of placenta praevia the more likely a Caesarean Section is require, it is possible that by not recording grade for placenta praevia we are not able to target exclusion from this indicator. It is suggested that the use of placenta praevia as an exclusion criterion be revisited in future reviews of this indicator. If the grade is recorded, it may be possible to better cater for the condition when calculating the risk adjustment model

The group agreed to use placenta praevia as an exclusion criterion now and to include this as a consideration for future reviews of the indicator risk adjustment criteria.

Recommendation 14
The Working Group recommends that for the Selected Primiparae Caesarean Section (Public/Private at public/Private) indicator, placenta praevia is to be used as an exclusion criterion.

The group also agreed to alter the risk adjustment criteria by:
- Removing premature rupture of membranes
- Adding mother's body mass index (less than 30 or 30 and greater)
- Revising diabetes to 4 categories of diabetes; diabetes, other treatment; diabetes oral hypoglycaemic therapy; and diabetes, insulin treated.

The group considered the risk adjustment the factors for caesarean section conditions and agreed to include:
- Anogenital herpes
- Hypertensive disorders
- Placenta previa – (as it is not possible to breakdown the grade of placenta previa through coding, it was agreed this should be a risk factor and if a flag is raised,
investigation of cases by HHS would identify if there was a high number of grade 3 & 4s)
- BMI >= 30

The numbers of compound presentation were too low to be included as risk factors.

Analysis of the impact of having diabetes on the likelihood of a woman having a caesarean section was considered and the group agreed on the need to break this down into the following:
- Non diabetic
- Diabetic (non gestational)
- Diet controlled gestational diabetics
- Tablet controlled gestational diabetics
- Insulin controlled gestational diabetics

Data on analysis of the breakdown for each type of diabetes will be circulated to the group Working Group will then consider breakdown for each type of diabetes then decide upon risk adjustment.

Recommendation 15
The Working Group recommends the risk adjustment factors for the Selected Primiparae Caesarean Section (Public/Private at Public/Private) indicator are to include; Anogenital herpesviral infection; BMI of greater than or equal to 30; Diabetes – split by method of control; and Hypertensive disorders.

Selected Primiparae Instrumental Delivery - Risk adjustment and exclusion factors

The Working Group considered the impact of shoulder dystocia on method of delivery and likely perineal damage. The group also confirmed that fetal distress should be a risk adjustment factor.

Recommendation 16
The Working Group recommends that risk adjustment factors for the Selected Primiparae Instrumental Delivery indicator are to include; Fetal distress and Shoulder dystocia.

PART 8
AGREING VLAD CONTROL LIMITS / FLAGGING LEVELS

The VLAD flagging levels are based on percentage of variation from state average – the lower the state average for an outcome, the more sensitive the indicator. The reverse of this also applies; that is, the higher the state average for an outcome, the less sensitive the indicator.

A part of the indicator review is to check if the VLAD flagging levels are still appropriate considering the state average rate under the suggested definition. A new rate that differs from the old rate may require action on the flagging levels to use.

Table below provides the variation from the state average currently being used for the existing obstetric indicators. It also contains actual flag trigger rate that would be used under the suggested definition and (where possible) the number of flags that were raised for the 2011 and 2012 calendar years. This additional information provides a measure of how many investigations may be required if the flagging levels remain based on the current percentage of variation from the state average.
<table>
<thead>
<tr>
<th>Flag level</th>
<th>% variation</th>
<th>Trigger rate</th>
<th>Lower flags</th>
<th>Trigger rate</th>
<th>Lower flags</th>
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<td>Selected Primiparae Inductions of Labour indicator</td>
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<td></td>
<td></td>
<td></td>
</tr>
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</tr>
<tr>
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<td>75</td>
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<tr>
<td>Public</td>
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<table>
<thead>
<tr>
<th>Flag level</th>
<th>% variation</th>
<th>Trigger rate</th>
<th>Lower flags</th>
<th>Trigger rate</th>
<th>Lower flags</th>
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<tbody>
<tr>
<td>Existing episiotomy indicator</td>
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<td></td>
</tr>
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<td>11</td>
<td>34.5</td>
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</tr>
<tr>
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<td>75</td>
<td>21</td>
<td>9</td>
<td>39</td>
<td>4</td>
</tr>
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<table>
<thead>
<tr>
<th>Flag level</th>
<th>% variation</th>
<th>Trigger rate</th>
<th>Lower flags</th>
<th>Trigger rate</th>
<th>Lower flags</th>
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</thead>
<tbody>
<tr>
<td>Combined Public / Private</td>
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<td>Existing 3rd/4th degree tears for combined public and private</td>
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<td>Private</td>
<td>Private at public facilities</td>
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</table>

<table>
<thead>
<tr>
<th>Flag level</th>
<th>% variation</th>
<th>Trigger rate</th>
<th>Lower flags</th>
<th>Trigger rate</th>
<th>Lower flags</th>
</tr>
</thead>
<tbody>
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<td>Selected Primiparae Caesarean Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
<td>50</td>
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<table>
<thead>
<tr>
<th>Flag level</th>
<th>% variation</th>
<th>Trigger rate</th>
<th>Lower flags</th>
<th>Trigger rate</th>
<th>Lower flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Primiparae Instrumental Delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50</td>
<td>37.5</td>
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<td>100</td>
<td>50</td>
<td>2</td>
<td>80</td>
<td>1</td>
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</tbody>
</table>
The Working Group considered the information on flagging levels including:

- Where an outcome is very small; as in an the outcome rate of 3rd/4th degree perineal tears which is less than 5%; the percentage of variation for the flagging limits is larger otherwise the flagging is sensitive.

- The trigger rates between the levels are not wide enough for 3rd/4th degree perineal tears. The trigger rate for a lower level 2 flag is 11% and a lower level 3 flag is 12%. The absolute difference in the trigger rates between levels 1 and 2 is 1%.

- The Working Group considered whether a wider trigger rate (e.g., level 1: 100%, level 2: 125%, and level 3: 175%) should apply for 3rd and 4th degree perineal tears.

- The trigger rate for episiotomy indicator for private facilities of 44.6% for a lower level 3 flag is very high.

The group considered flagging levels, for the combined indicator, Episiotomy and/or third and fourth degree Perineal Tears for unassisted births in public facilities, the number of flags within the percentage of variation from the average were acceptable for Level 1, at 50% variation from average; Level 2, 75% variation and Level 3, 100% variation. The Working Group agreed to adopt these limits for public hospitals indicators.

The group considered the flagging levels for the combined indicator of Episiotomy and/or third and fourth degree Perineal Tears for unassisted births in private facilities, where the rates are higher and different flagging levels are required to be sensitive to this. The number of flags within the percentage of variation from the average were acceptable for Level 1, at 30% variation from average; Level 2, 50% variation and Level 3, 75% variation. The Working Group agreed to adopt these limits for private hospitals indicators.

- The current indicator for selected Primipara Caesarean Sections does not discern between public patients and private patients at public facilities. The suggested indicator will split public and private facilities as well as private patients at public facilities. This means it will be possible to apply a different percentage variation to a state average for each of these groups. The group considered whether it is appropriate for each group should to be aiming to achieve differing targets, although it may be more appropriate to apply different limits to public facilities and all private patients (at a private facility or at a public facility).

- Applying the same percentage variation to all private patients (regardless of place of treatment) then the trigger rates for private patients at public facilities would be 60, 70 and 80% for lower 1, 2 and 3 flags. Given the current rate of Caesarean Sections for private patients at public facilities (approximately 30%) this could lead to less lower level flags being requested for this group.

The group considered the flagging levels. The current limits are thought to be too generous given the high rates of Caesarean Sections at both public and private facilities. The current limits in place are: Level 1, 50% variation from average; Level 2, 75% variation and Level 3, 100% variation.

The Working Group agreed that the limits should be revised downward to make them more sensitive. The new limits will be changed to the following:

- Level 1: 30 %
- Level 2: 50 %
- Level 3: 75 %
The grouping of private patients in public facilities is new so no comparison with historical flagging patterns can be made. The Working Group agreed that the control limits for this indicator should apply equally to each of the 3 groupings.

• The current indicator - Selected Primiparae Inductions of Labour- does not discern between public and private facilities and therefore would have applied the same percentage of variation to an overall state average when determining past flags. This would have under produced lower flags at public facilities and over produced lower flags at private facilities. The suggested indicator will split public and private facilities, thus it will be possible to apply type of facility specific percentage variation being applied to a type of facility specific state average.

The group considered the impact of different flagging levels and discussed the need to provide a balanced flagging pattern and the opportunity provided by splitting the indicator into public patients and private patients. The group agreed this split of the indicator by facility type will provide more useful comparisons.

As flags are based on state averages that only include the facilities from the relevant sector, this can be more sensitive to the different rates in each sector. It is felt that the current limits are too generous given the high rates of Inductions of Labour at both public and private facilities. The current limits in place are: Level 1, 50% variation from average; Level 2, 75% variation and Level 3, 100% variation. The group decided to revise the flags downward to make them more sensitive. The new limits will be:

- Level 1: 30 %
- Level 2: 50 %
- Level 3: 75 %

• The current indicator does not discern between public patients and private patients at public facilities. The suggested indicator will split public and private facilities as well as private patients at public facilities. This means it will be possible to apply a different percentage variation to a state average for each of these groups. This may be appropriate if it is felt that each group should be aiming to achieve differing targets, although it may be more appropriate to apply different limits to public facilities and all private patients (at a private facility or at a public facility).

• If it was felt that applying the same percentage variation to all private patients (regardless of place of treatment) then the trigger rates for private patients at public facilities would be 60, 70 and 80% for lower 1, 2 and 3 flags. Given the current rate of Caesarean Sections for private patients at public facilities (approximately 30%) this could lead to less lower level flags being requested for this group.

PART 9
SUMMARY OF RECOMMENDED CHANGES TO OBSTETRIC INDICATORS

The changes recommended by The Working Group are summarised in the table below.

<table>
<thead>
<tr>
<th>OLD INDICATOR</th>
<th>CHANGE</th>
<th>NEW INDICATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Primiparae Induction of Labour</td>
<td>Split by public and private patients</td>
<td>Selected Primiparae Induction of Labour (Public/Private).</td>
</tr>
<tr>
<td>Selected Primiparae Caesarean Section (Public/Private)</td>
<td>Split into 3: 1. Public patients at public facility; 2. Private patients at public facility; 3. Private patients at private facility</td>
<td>Selected Primiparae Caesarean Section – (Public/ Private at Public/Private facility)</td>
</tr>
<tr>
<td>private facility</td>
<td>Selected Primiparae Third and Fourth Degree Perineal Tears &amp; Selected Primiparae Episiotomy (Public/Private)</td>
<td>Combine episiotomies with 3rd and 4th degree tears and split both by assisted or unassisted birth, and by public and private facility</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Selected Primiparae Instrumental Delivery (Public/Private)</td>
<td>No change</td>
<td>Selected Primiparae Instrumental Delivery (Public/Private)</td>
</tr>
<tr>
<td>None</td>
<td>New</td>
<td>Admissions to Special Care Nursery or NICU</td>
</tr>
</tbody>
</table>
Appendix A – Working Group Members and Meeting Attendance:

Membership & attendance (meeting 1 – 21 March 2013)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Michael Humphrey</td>
<td>Clinical Adviser, Rural &amp; Remote Clinical Support Unit</td>
</tr>
<tr>
<td>Dr Marc Miller</td>
<td>Director of Obstetrics &amp; Gynaecology, Nambour General Hospital</td>
</tr>
<tr>
<td>Dr Tom McHattie</td>
<td>Director of Obstetrics &amp; Gynaecology, Bundaberg Hospital</td>
</tr>
<tr>
<td>Mary Weber</td>
<td>Clinical Midwife/Acting as a Nurse Unit Manager, Longreach Hospital</td>
</tr>
<tr>
<td>Sandy Plowman</td>
<td>Director of Nursing &amp; Midwifery / Division of Family Women’s and Children’s Health, Gold Coast Hospital</td>
</tr>
<tr>
<td>Alicia Hyland</td>
<td>Clinical Midwife/Birth Suite Team Leader, Gold Coast Hospital</td>
</tr>
<tr>
<td>Sue Hampton</td>
<td>Clinical Midwife Consultant, RBWH</td>
</tr>
<tr>
<td>Suzanne Bunker</td>
<td>CNC Safety &amp; Quality, Safety and Quality Unit, RBWH</td>
</tr>
<tr>
<td>Tracey Matthies</td>
<td>Manager, Coding Services, HIMS, Nambour General Hospital</td>
</tr>
<tr>
<td>Colleen Morris</td>
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<tr>
<td>Dr Belinda Maier</td>
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<tr>
<td>Kirstine Sketcher-Baker</td>
<td>Executive Director, PSU</td>
</tr>
<tr>
<td>Di O’Kane</td>
<td>A/Director, PSU</td>
</tr>
<tr>
<td>Graham Hall</td>
<td>Manager, Patient Safety Reporting , PSU</td>
</tr>
<tr>
<td>Michelle Dinh</td>
<td>Principal Data Analyst, PSU</td>
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<tr>
<td>Brendan Farthing</td>
<td>Senior Data Analyst, PSU</td>
</tr>
<tr>
<td>Dr John Hall</td>
<td>Medical Superintendent, Oakey Health Service</td>
</tr>
<tr>
<td>Dr Anne Sneddon</td>
<td>Clinical Director in Obstetrics &amp; Gynaecology, Gold Coast Hospital</td>
</tr>
<tr>
<td>Dr Tania Widmer</td>
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<tr>
<td>Dr Mahilal Ratnapala</td>
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<tr>
<td>Judith Hunter</td>
<td>Clinical Patient Safety Officer, Mater</td>
</tr>
<tr>
<td>Name</td>
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<tr>
<td>-------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dr Pádraig Ó Lúanaigh</td>
<td>Nursing &amp; Midwifery Director, Nursing and Midwifery Office</td>
</tr>
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**Membership & attendance (meeting 2 –19th June 2013)**

### Present

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Professor Michael Humphrey</td>
<td>Clinical Adviser, Rural &amp; Remote Clinical Support Unit</td>
</tr>
<tr>
<td>Dr Marc Miller</td>
<td>Director of Obstetrics &amp; Gynaecology, Nambour General Hospital</td>
</tr>
<tr>
<td>Dr Belinda Maier</td>
<td>Midwife, Nursing and Midwifery Office</td>
</tr>
<tr>
<td>Alicia Hyland</td>
<td>Clinical Midwife / Birth Suite Team Leader, Gold Coast Hospital</td>
</tr>
<tr>
<td>Sue Hampton</td>
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<tr>
<td>Di O’Kane</td>
<td>Acting Director, PSU</td>
</tr>
<tr>
<td>Graham Hall</td>
<td>Manager, PSU</td>
</tr>
<tr>
<td>Catriona Calvert</td>
<td>Principal Project Officer, PSU</td>
</tr>
<tr>
<td>Michelle Dinh</td>
<td>Principal Data Analyst, PSU</td>
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<tr>
<td>Brendan Farthing</td>
<td>Senior Data Analyst, PSU</td>
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### Not Present

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Dr Tom McHattie</td>
<td>Director of Obstetrics &amp; Gynaecology, Bundaberg Hospital</td>
</tr>
<tr>
<td>Dr Mahilal Ratnapala</td>
<td>Director Department of Obstetrics &amp; Gynaecology, Caboolture Hospital</td>
</tr>
<tr>
<td>Dr Anne Sneddon</td>
<td>Clinical Director in Obstetrics &amp; Gynaecology, Gold Coast Hospital</td>
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<tr>
<td>Dr Tania Widmer</td>
<td>Staff Specialist, Obstetrics &amp; Gynaecology, Gold Coast Hospital</td>
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<tr>
<td>Dr Pádraig Ó Lúanaigh</td>
<td>Nursing &amp; Midwifery Director, Nursing and Midwifery Office</td>
</tr>
<tr>
<td>Sandy Plowman</td>
<td>Director of Nursing &amp; Midwifery, Gold Coast Hospital</td>
</tr>
<tr>
<td>Valerie Slavin</td>
<td>Clinical Midwife, Gold Coast Hospital / Research Midwife, Griffith University</td>
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<td>Mary Weber</td>
<td>Clinical Midwife / Acting Nurse Unit Manager, Longreach Hospital</td>
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<tr>
<td>Tracey Matthies</td>
<td>Manager Coding Services, Nambour General Hospital</td>
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<tr>
<td>Suzanne Bunker</td>
<td>Clinical Nurse Consultant, RBWH</td>
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<tr>
<td>Colleen Morris</td>
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## Membership & attendance (meeting 3 - 25th September 2013)

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<tr>
<td>Professor Michael Humphrey</td>
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<tr>
<td>Sue Hampton</td>
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<td>Kirstine Sketcher-Baker</td>
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<td>Catriona Calvert</td>
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<td>Michelle Dinh</td>
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<td>Michael Findlay</td>
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<tr>
<td>Chris Galvin</td>
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<tr>
<td></td>
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</tr>
<tr>
<td><strong>Not Present</strong></td>
<td></td>
</tr>
<tr>
<td>Dr Marc Miller</td>
<td>Director of Obstetrics &amp; Gynaecology, Nambour General Hospital</td>
</tr>
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<td>Alicia Hyland</td>
<td>Clinical Midwife / Birth Suite Team Leader, Gold Coast Hospital</td>
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<tr>
<td>Dr Belinda Maier</td>
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<tr>
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<tr>
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<td>Clinical Director in Obstetrics &amp; Gynaecology, Gold Coast Hospital</td>
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<tr>
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<tr>
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</tr>
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### Membership & attendance (meeting 4 –4th February 2014)

<table>
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<tr>
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</tr>
<tr>
<td>Suzanne Bunker</td>
<td>Clinical Nurse Consultant, RBWH</td>
</tr>
<tr>
<td>Louise O’Berne</td>
<td>For Sue Hampton, Clinical Midwife Consultant, RBWH</td>
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<tr>
<td>Colleen Morris</td>
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</tbody>
</table>
Appendix B – Summary of maternity related factors in current use in Australia

Current maternity indicator reporting in Australia
A number of jurisdictions and professional organisations currently report on maternity services using clinical or performance indicators. This section provides an overview of that reporting (Table 1).

Australian Council on Healthcare Standards
The Australian Council on Healthcare Standards (ACHS) provides performance and outcomes services to health-care providers, and 700 health-care organisations participate in its Clinical Indicator Program in any 6-month period. Since 1989, the ACHS has been involved in developing clinical indicators in collaboration with Australian and New Zealand medical colleges, associations and societies, including the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (ACHS 2010). Table 1 lists the 10 obstetric indicators reported by the ACHS.

Women's Healthcare (formerly Hospitals) Australasia
Women’s Healthcare Australasia (WHA) is a multidisciplinary professional organisation for member hospitals and health services caring for women and babies in Australia and New Zealand. The WHA has been collecting and collating clinical indicator data from member hospitals and providing deidentified benchmarking reports, Benchmarking Maternity Care, since 1997. This report benchmarks clinical care processes and outcomes with peer hospitals in Australia and New Zealand and is distributed annually to members. Table 1 summarises the current maternity indicators produced by the WHA.

State government
In 2001, the Victorian Government released the report Measuring maternity care comprising a set of performance indicators for the hospital-based maternity services that span a range of domains of care, and include both process and outcome measures of the three phases of maternity care: antenatal, intrapartum and postnatal maternity care (VDHS 2009). Since 2003, all Victorian public hospitals that provide maternity care have been reporting yearly against a set of performance indicators, using data from the Victorian Perinatal Data Collection Unit, the Victorian Admitted Episodes Data Set and data provided directly from Victorian public hospitals to the Department of Human Services (VDHS 2009). Importantly, trend data have demonstrated change in the desired direction in some key indicators. Reporting annually maintains the focus on important aspects of the safety and quality of maternity care (VDHS 2009). The indicators are listed in Table 1.

National core maternity indicators are central to the policy framework developed in 2007 and implemented in Western Australia (DoHWA 2007). One objective of the framework is to report the national core maternity indicators across Western Australia (Joyce 2012).

National Healthcare Agreement
In November 2008, the Council of Australian Governments (COAG) endorsed a new Intergovernmental Agreement (IGA) on Federal Financial Relations that was subsequently reaffirmed in July 2011 (COAG 2009, COAG 2011). The IGA incorporates a number of National Agreements, which include the National Healthcare Agreement (NHA). Each National Agreement has a performance reporting framework that all jurisdictions are required to report against. The NHA includes three maternity indicators for which the data are derived from the Perinatal National Minimum Data Set (NMDS) (see Table 1). An annual report has been prepared since 2009 and initially reported on births that occurred in 2007. The most recent report is on births that occurred in 2009.

National Indigenous Reform Agreement
The IGA includes the National Indigenous Reform Agreement (NIRA). The NIRA has three maternity indicators that are reported for all jurisdictions (see Table 1). The data for indicator reporting are derived from the Perinatal NMDS. An annual report has been prepared since 2009, initially reporting on births that occurred in 2007. The most recent report is on births that occurred in 2009.
Report on Government Services
The Report on Government Services (RoGS) was commissioned in 1993 by Heads of Government (now COAG) to help improve the efficiency and effectiveness of government services. The RoGS is a tool for government and is now in its seventeenth year of annual reporting. The framework for performance indicators reported in the RoGS provides comparative information on efficiency, equity and effectiveness and distinguishes the outputs and outcomes of maternity services (SCRGSP 2012). The data for indicator reporting are derived from the state and territory perinatal data collections. Table 1 summarises the current maternity indicators produced for the RoGS.
### Table 1: Summary of maternity-related indicators in current use in Australia

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>RoGS(1)</th>
<th>NIRA(2)</th>
<th>NHA(3)</th>
<th>ACHS(4)</th>
<th>WHA(5)</th>
<th>YDHS(6)</th>
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<tbody>
<tr>
<td>1</td>
<td>Caesarean section rate</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>(WHA—Caesarean section rate for (a) all women who give birth; (b) selected primiparas only)</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2</td>
<td>Vaginal birth after caesarean section (VBAC) rate</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
|     | (WHA—for VBAC-eligible women (a) vaginal birth following previous primary caesarean section
|     | (b) pre-labour caesarean section following previous primary caesarean section) |         |         |        | ✔      | ✔      | ✔       |
|     | Selected primipara—intervention                                           | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 3   | a) Spontaneous vaginal birth                                              |         |         | ✔      | ✔      | ✔      | ✔       |
| 4   | b) Induction of labour                                                    |         |         | ✔      | ✔      | ✔      | ✔       |
| 5   | c) Instrumental vaginal birth                                              |         |         | ✔      | ✔      | ✔      | ✔       |
| 6   | d) Caesarean section                                                      |         |         | ✔      | ✔      | ✔      | ✔       |
| 7   | General anaesthesia for caesarean section                                 | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 8   | Unassisted vaginal birth following spontaneous onset of labour            | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 9   | Teenage birth rate                                                        | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 10  | Episiotomy and third and fourth degree perineal tears                     | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | a) Episiotomy—all women who give birth vaginally                          | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | b) 3rd or 4th degree perineal tear—all women who give birth vaginally     | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | c) Episiotomy—selected primiparas who give birth vaginally                | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | d) 3rd or 4th degree perineal tear—selected primiparas who give birth vaginally | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 11  | Selected primipara—perineal injury                                        | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | a) Intact perineum                                                        | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | b) Episiotomy and no perineal tear                                        | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | c) Perineal tear and no episiotomy                                        | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | d) Episiotomy and perineal tear                                           | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | e) Surgical repair of perineum for third degree tear                      | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | f) Surgical repair of perineum for fourth degree tear                     | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 12  | Postpartum haemorrhage and transfusion                                    | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 13  | Degree of damage to lower genital tract                                   | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 14  | Induction of labour                                                       | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
|     | (WHA—selected primiparas only)                                            | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 15  | Proportion of babies born of low birthweight                              | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 16  | Apgar score at 5 minutes                                                  | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 17  | Transfers/admissions to special care nursery or neonatal intensive care unit for reasons other than birth defect | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 18  | Administration of antenatal corticosteroids to women delivered or transferred prior to 34 weeks | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 19  | Birthweight standardised perinatal/infant mortality                        | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |
| 20  | Provision of appropriate breastfeeding support or advice                   | ✔       | ✔       | ✔      | ✔       | ✔      | ✔       |

(continued)
<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>RACS</th>
<th>NIIRA</th>
<th>NHA</th>
<th>ACHS</th>
<th>WHA</th>
<th>VDHS</th>
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<td>Women who gave birth with at least one antenatal visit in the first trimester of pregnancy</td>
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<td>Women who gave birth where 5 or more antenatal visits were reported</td>
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<td>✓</td>
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<td>The rate of women receiving timely hospital antenatal clinic services—women who wait more than 30 minutes for hospital antenatal clinical service</td>
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<td></td>
<td>✓</td>
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<td>The rate of women who receive appropriate interpreter services</td>
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<td>Assessed for interpreter requirements</td>
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<td>Provided appropriate interpreter services</td>
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<td></td>
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<td>✓</td>
<td></td>
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<td>Tobacco smoking during pregnancy</td>
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<td>Antibiotic prophylaxis at time of caesarean section</td>
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<td>Thromboprophylaxis</td>
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<td>Blood transfusion</td>
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<td>31</td>
<td>Instrumental vaginal births (WHA—of forceps birth—all women who give birth vaginally (b) Vacuum extraction birth—all women who give birth vaginally (c) Forceps birth—selected primiparas who give birth vaginally only (d) Vacuum extraction birth—selected primiparas who give birth vaginally only)</td>
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<td>Epidural for pain relief in labour—vaginal births</td>
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<td>All women who give birth vaginally</td>
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<td>Selected primiparas who give birth vaginally</td>
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<td>Hypoxic Ischaemic Encephalopathy rate</td>
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<td>Review of adverse events</td>
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<td>Separation rates for maternal services</td>
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<td>Mother's average length of stay</td>
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Notes:
5. Women’s Healthcare Australia (WHA 2011)
6. Victorian Department of Human Services (VDHS 2009)