SESLHD GUIDELINE COVER SHEET

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KEY TERMS	Assisted vaginal birth, vacuum, forceps, adequately credentialed clinician, supervision.
SUMMARY	This guideline outlines the procedure and the key safety aspects of an assisted vaginal birth, with an emphasis on adequate credentialing and supervision of operators to enhance safety for women and their babies.

Feedback about this document can be sent to SESLHD-ExecutiveServices@health.nsw.gov.au

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Health
South Eastern Sydney
Local Health District

Assisted Vaginal Birth Guideline

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Section 1 – Background

Instrumental assisted vaginal delivery is required in approximately 15% of births. The aim is to achieve a successful assisted vaginal birth with a single instrument and minimal/no maternal or fetal trauma.

Section 2 – Principles

2.1 Indications for assisted birth

The indication for assisted birth should be individualised, but will include:

- Inadequate progress in the second stage of labour in the presence of adequate contractions
- Abnormal fetal heart rate (FHR) pattern or abnormal fetal scalp sample in the second stage of labour
- To reduce the effects of the second stage of labour on maternal medical conditions, or other conditions resulting in the woman's inability to actively push
- Malposition of the fetal head.

2.2 Contraindications to assisted birth

- Fetal bleeding disorders (relative)
- Fetal tendency to bone fracture (relative)
- <34 weeks gestation for vacuum extractors. Use vacuum extractor with caution between 34 and 36 weeks
- Maternal blood-borne viral infection, if difficult assisted vaginal births anticipated
- Fetal malpresentation (breech, and face) with vacuum extractor
- Cervical dilation <10cm
- > 1/5 of the fetal head palpable abdominally.

2.3 Attendance and supervision

- All instrumental births should be undertaken or supervised by an obstetric specialist or appropriately credentialed medical officer
- All trials of assisted birth in operating theatre must be discussed with the on-call obstetric consultant
- Attendance by the obstetric consultant or senior registrar/fellow is required for a level 1-4 obstetric registrar for all trial of forceps in the operating theatre
- At some sites, RANZCOG credentialed level 4 registrars who are comfortable to carry out less complex trial of instruments in theatre, can do so unsupervised.

2.4 Preparation for instrumental birth

- Consider undertaking the procedure in the operating theatre if:
  - Maternal BMI >35
  - Estimated fetal weight over 4000g or a clinically macrosomic fetus
  - Occipito-transverse or posterior position, especially for nulliparous woman
  - Likelihood of a successful vaginal birth is uncertain
- Request the attendance of paediatric/neonatal staff
- Perform abdominal and vaginal examinations and document lie, presentation, engagement and position, contraction characteristics, dilation of cervix, station and position of fetal head, presence of caput and/or moulding and the colour of the liquor
- Confirm fetal position with ultrasound for:

  - Mid cavity births if time allows
  - Low cavity/outlet births if clinical doubt about position
- Plan mode of delivery, location of birth and need for supervision
- Undertake appropriate explanation, provide information to the woman and obtain verbal consent
- Arrange adequate analgesia as appropriate
- Ensure that the bladder is empty
- Confirm full cervical dilation and ensure the membranes are ruptured
- Place the woman in the lithotomy position
- Assess the fetal heart rate (FHR) after every contraction or continuously if clinically indicated
- Record findings on the partogram
- The choice of instrument should be appropriate to the clinical circumstances and the operator's level of skill.

2.5 Vacuum assisted birth

- Recommend application of warm packs to the perineum during procedure
- Apply the vacuum cup to the flexion point. The flexion point is 3cm anterior to the posterior fontanelle in the mid line
- Sweep a finger around the cup to ensure no maternal tissue is trapped beneath the cup
- Increase pressure of the vacuum device to between 40 and 60 mms of Hg
- Apply traction during contractions at right angles to the plane of the cup
- An episiotomy should be performed for nulliparous woman when the fetal head distends the perineum. This should be performed at 60 degrees from the fourchette. An episiotomy may not be required for multiparous woman
- Consider abandoning the procedure:
  - When the cup is detached three times
  - When no bony descent is occurring with each traction
  - When birth is not imminent after three contractions or within 15 minutes of the initial application of the cup
- Seek advice from obstetric consultant when procedure needs to be abandoned
- If delivery fails, consider gentle elevation of the head back up into the vagina and consider tocolysis if fetal compromise suspected or present
- Depending on fetal condition, arrange a category one or two urgent caesarean section (ensure familiarity with C/S categorisation systems of each individual unit as there is variation)
- Document clinical events on instrumental birth record and in medical record.

2.6 Forceps birth

- Recommend application of warm packs to the perineum during procedure
- Lubricate the blades
- Apply blades between contractions
- Ensure midline location of the sagittal suture
- Horizontal plane of the forceps no more than one centimetre below the fontanelle
- No more than one finger can be inserted into the fenestrations on either side
- Apply steady traction in the axis of the pelvis
- Halt traction in between contractions (except where immediate delivery is required)
- Perform episiotomy, at 60 degrees from fourchette, as the fetal head distends the perineum
- Consider abandoning the procedure:
  - When no bony descent is occurring with each traction

  - When birth is not imminent after three tractions or within 15 minutes of the initial application of the forceps
- Seek advice from obstetric consultant when procedure needs to be abandoned
- If delivery fails:
  - consider gentle elevation of the head back up into the vagina and consider tocolysis if fetal compromise suspected or present.
  - attempt to elevate the head in the case of deep impaction only with the use of a cupped hand exerting an upward flexing action. Avoid using one or two fingers to exert upward pressure on the fetal head
  - Depending on fetal condition, arrange urgent category one or two caesarean section (ensure familiarity with C/S categorisation systems of each individual unit as there is variation)
- Avoid forceps after vacuum cup detachment, unless fetal head can confidently be delivered with the next contraction
- Document clinical events on instrumental birth record and in medical record.

2.7 Post-delivery

- Paired umbilical cord blood samples should be collected for fetal blood gas analysis
- Examine cervix, vagina and perineum for trauma post-procedure and repair as required. This examination should be performed by 2 experienced clinicians and include a PR inspection prior to repair
- Offer analgesia (paracetamol and non-steroidal anti-inflammatory drug e.g. diclofenac or ibuprofen, unless contraindicated)
- Monitor for and document the timing of the first maternal void of urine after the birth
- Examine baby for birth trauma
- Complete SEI 060.425 form – *Assisted Vaginal Birth Report To Be Completed By Operator*
- Arrange neonatal observations for subgaleal haemorrhage as per: SESLHDPR/414 - Neonatal Observations for Subgaleal Haemorrhage following vaginal application of vacuum or forceps
- Debrief the woman about the birth and implications for next birth, ideally by the Accoucheur.

Section 3 - Definitions

Classification of Instrumental Delivery:

- ***Mid-cavity*** - The head is no more than 1/5 palpable abdominally and the leading edge of the skull is between the level of the ischial spines and 2cm below the ischial spines
- ***Low-cavity*** - The leading edge of the fetal skull is at least 2cm below the ischial spines (station +2) but not on the pelvic floor
- ***Outlet forceps or Vacuum*** - The fetal scalp has reached the pelvic floor and is visible at the introitus without separating the labia
- ***Rotational delivery*** - The fetal head is rotated at more than 45% from the occipito-anterior position. This includes the occipito-posterior position.

Section 4 - Responsibilities

Employees and Medical Staff will:

- Ensure familiarity with the procedures and any related local business rules
- Hold appropriate hospital credentialing/supervision prior to commencing the procedure
- Ensure junior medical officers (JMOs) are responsible for informing the on-call specialist obstetrician of their supervision requirements when relevant, and for the specialist obstetrician to comply with that minimum level of supervision.

Network Managers/Service Managers and Line Managers will:

- Ensure that staff are familiar with SESLHD policies and procedures and are aware of the requirement to adhere to these
- Undertake periodic review of governance and compliance.

Section 5 – Educational Notes

- Assisted vaginal birth is associated with higher maternal and neonatal morbidity than spontaneous vaginal birth. Measures to reduce the rate of instrumental birth may include:
  - continuous intrapartum midwifery support
  - lateral or upright positions in the second stage of labour
  - use of oxytocin in the second stage of labour in a nulliparous woman
  - allowing a passive second stage of labour in the presence of epidural anaesthesia
- Compared to forceps, the use of a vacuum extractor is associated with a higher risk of failure, more cephalohaematoma, subgaleal haemorrhage and retinal haemorrhages but less use of regional anaesthesia and less maternal genital tract trauma
- Correct application of the vacuum cup promotes flexion of the fetal head when traction is being applied and allows the smallest diameter of the fetal head to present
- Generally, the vacuum cup (soft and rigid) places less force to the fetal head, teaches the operator to follow the pelvic curve and requires less anaesthesia. Cup detachment may occur in up to 4% of cases for a variety of reasons
- Fetal injury increases significantly between 11-20 minutes duration as compared to < 10 minutes
- The use of an axis traction handle during forceps delivery facilitates traction in the direction of the pelvic curve. Pajot's manoeuvre consists of applying traction in the same direction that the forceps handles extend, outward and away from the woman, whilst the other hand applies downward traction on the shanks of the forceps. These opposing forces will bring the head down under the symphysis pubis following the pelvic curve
- Caution should be used in attempting a forceps birth after an unsuccessful vacuum extraction, although in some circumstances this may be preferable and safer than proceeding to an emergency caesarean section with an impacted fetal head
- Forceps can allow a more rapid delivery than the vacuum extractor. This may be important when birth needs to occur quickly
- Women who have a successful assisted vaginal delivery should be encouraged to aim for a spontaneous vaginal birth during future pregnancies as there is a high incidence of success (over 80%).

Section 6 – Documentation

- Medical Records – paper and electronic
- SEI 060.425 form - Assisted Vaginal Birth Report to be completed by the operator
- Partogram
- Obstetric database e.g. eMaternity.

Section 7 – References

- RCOG 2011. Operative Vaginal delivery. Green top Guideline 26
- Bahl R, Strachan B, Murphy DJ. Outcome of subsequent pregnancy three years after previous operative delivery in the second stage of labour: cohort study. BMJ 2004; 328:311–4.
- RANZCOG (March 2016) Instrumental Vaginal Birth. Clinical Guideline
- SESLHDPD/273 - Maternity Services Escalation Policy
- SESLHDPR/414 - Neonatal Observations for Subgaleal Haemorrhage following vaginal application of vacuum or forceps
- SESLHDPR/399 - Credentialing in Obstetric Procedures for Junior Medical Officers/Fellows
- SESLHD Safety Notice - 016/09 Safe Instrumental Birth
- WHA Collaborative Reducing the Incidence of Preventable 3rd & 4th Degree Tears 2018.

Section 8 – Revision and Approval History

This document replaces: SESLHD PD/141 Instrumental Vaginal Delivery Policy, SGSHHS LBRs Instrumental (Assisted) vaginal birth, RHW LOP Instrumental Vaginal Delivery Guideline 2009.

Date	Revision no:	Author and approval
November 2016	Draft	Director Women and Children's Stream
February 2017	0	Approved by Clinical and Quality Council
May 2019	1	Minor review. Further information added to 2.5, 2.6 and 2.7 in line with WHA Guideline on 3rd and 4th degree tears. Approved by Director of Women's and Children's Clinical Stream. Formatted by Executive Services prior to publishing.
September 2019	2	Minor review conducted by Sarah Clements, Rahul Sen, Wendy Hawke, Trent Miller, Andrew Bisits, Andrew Zuschmann Daniel Challis. Information added regarding application of hot packs to perineum during assisted birth procedures. Angle of episiotomy and extra detail to clinical practice post birth. Approved by Director of Women's and Children's Clinical Stream. Formatted by Executive Services prior to publishing.