



**OBSTETRICS AND GYNAECOLOGY**  
**Clinical Practice Guideline**

# Operative vaginal birth

(previously known as Instrumental Vaginal Delivery)

This document should be read in conjunction with this [Disclaimer](#)

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**Scope:** This guideline contains information on operative vaginal [forceps](#) and [vacuum](#) births, and [pudendal nerve block](#).

## Operative vaginal birth- QRG

### Operative Vaginal Birth QRG

#### Preparation:

1. Prepare [equipment](#), **explain** the procedure to the woman, gain **consent**, assess [analgesia](#) requirements, check [contraindications](#), & **empty** the woman's **bladder**.
2. **Notify** Labour Birth Suite Midwifery Coordinator & advise Neonatologist to attend birth.
3. Perform an [abdominal palpation](#) and [vaginal examination](#) & **position** the woman in dorsal lithotomy.
4. Monitor [fetal heart rate](#) during procedure.
5. Proceed with *either* forceps or vacuum procedure below. Evaluate for **episiotomy** during procedure.

#### Forceps:

- a. Consider trial of forceps **in theatre** if high risk of failure.
- b. **Insert** the left **blade** into the left side of vagina while guarding the vaginal tissue with other hand; insert the right blade with right hand. **Note the time** of forceps application.
- c. **Assess the blades** to ensure correct application & lock the blades together when positioned correctly.
- d. **Apply traction** during a contraction while the woman bears down (unless contraindicated), following the pelvic curve. The dominant hand gives outward pull while the other hand gives continuous downward pressure.
- e. **Remove forceps** in opposite order to the application. **Note time** forceps removed.

#### Vacuum:

- a. **Apply vacuum** cup with centre at or behind the flexion point over the sagittal suture. The flexion point is 3cm in front of the posterior fontanelle. **Check vacuum position / application** & no cervical or vaginal tissue is in the cup.
- b. **Apply traction.** Only obstetric medical staff [competent](#) in assisted birth are to undertake or supervise the procedure.
  - **Note the time** the cup is applied / traction initiated & **turn on suction** pressure as per medical practitioner (up to max. 80kPa). Chignon is formed after 1-2 minutes.
  - **During a contraction** & with maternal expulsive effort (unless contraindicated), apply gentle steady **traction** at right angles to the cup, with the axis of traction following pelvic curve during the contraction. **Note the time** of each traction pull.
  - [Abandon the procedure](#) if difficult application, no progressive descent, not imminent birth within 3 pulls, cup detachment 3 times, or >15-20 minutes since cup application.
- c. **Cease suction & remove** vacuum cup when the jaw is visible, birth the baby.

#### Post procedure

6. **Document** procedure in the woman's medical record, MR275 Operative Vaginal Delivery & MR230.01 Labour and Birth Summary including when the attempt has been unsuccessful. \*If adverse outcome or unsuccessful assisted vaginal birth complete Clinical Incident Form.
7. **Assess & repair vagina** trauma (as required). Provide **bladder care**, **analgesia** & measures to reduce perineum pain & swelling (if trauma occurred). Recommend intravenous (IV) [antibiotic prophylaxis](#) within 6 hours of birth where appropriate- see [section for criteria and administration](#).
8. Prior to hospital discharge **medical staff to counsel** the woman about the indication for operative birth, management of complications & prognosis for future births.

Note: This flowchart represents minimum care & should be read in conjunction with the following full guideline & [disclaimer](#). Additional care should be individualised as needed.

# Forceps birth and vacuum extraction birth

## Key points

The following key points are separated into [General](#), [Forceps](#) and [Vacuum](#) points.

### General

1. Obtain informed consent and document in the medical record, including for episiotomy if required.
2. **Competency:** Obstetric medical practitioners performing operative vaginal births should have the knowledge, experience and skills necessary, or an appropriate supervisor present,<sup>1</sup> to assess the woman, complete the procedure and manage any complications that may occur.<sup>2</sup>
  - An obstetric trainee should be supervised by an accredited operator with expertise in the chosen procedure and should demonstrate competency before conducting unsupervised births.<sup>1,2</sup>
  - Trainees are to receive appropriate training in vacuum and forceps birth, including theoretical knowledge, simulation and clinical training under direct supervision.<sup>2</sup>
3. The choice of instrument used for an operative vaginal birth is determined by the judgement of the operator (e.g. clinician's skill, available choices) and the clinical circumstance.<sup>1,3</sup>
4. The **threshold for abandoning** an operative vaginal birth differs between clinicians and clinical situations.<sup>1</sup> Operative vaginal birth should be abandoned if:
  - Difficulty in applying the instrument,<sup>4</sup>
  - No evidence of progressive descent with each pull<sup>1</sup>
  - No evidence of imminent birth following three pulls of a correctly placed instrument by an experienced operator<sup>2</sup>
  - Birth is not imminent within a reasonable period of time (e.g. 15-20 minutes)<sup>4</sup>
  - See also [points for rotational forceps](#) below
5. Sequential instrumentation should not be used if any of the indications for abandonment are present from the first unsuccessful attempt at birth. In circumstances where there has been good descent but birth has not been achieved, the use of a second instrument may be appropriate.<sup>4</sup>
6. All women who have undergone operative vaginal birth should have monitoring of bladder according to the KEMH O&G guideline: Bladder Management.
7. Routine episiotomy is not required for operative vaginal births. Individual clinical judgement should be applied for each birth.

- Offer an episiotomy if forceps or vacuum are required and this is the woman's first birth (due to increased risk of third and fourth degree tears)<sup>5</sup> See KEMH, O&G, Perineal Care and Repair guideline.
8. **Consider trial of operative vaginal birth in theatre** for births which are at risk of higher failure rates e.g. maternal BMI >30, short maternal stature, estimated fetal weight >4kg or a clinically big baby, head circumference >95<sup>th</sup> percentile, occipito-posterior position, mid-cavity or when 1/5 head is palpated abdominally.<sup>1, 2</sup>
- Written consent should generally be obtained prior to an operative vaginal birth attempt in theatre and women advised of the possibility that attempts may need to be abandoned and caesarean performed.<sup>1</sup>
9. Standardised checking processes outlining the responsibilities for the operator and assistant are contained in the following documents which must be read in conjunction with this guideline [**RCA Recommendation**]:
- WNHS Policy: [Procedural Count: Management and Procedure](#)
  - Perioperative: [Surgical Count: Management and Procedure](#)  
(Available to WA Health employees through Healthpoint)

## Forceps

1. Clinicians must receive appropriate training and maintain experience if they perform rotational forceps or a forceps birth should be conducted with appropriate training and under supervision of a trained and experienced obstetrician credentialed in forceps birth.<sup>1</sup>
2. Effective analgesia should be obtained prior to commencing a forceps birth.<sup>1</sup> Although there is insufficient evidence to support one particular analgesic method in operative vaginal birth,<sup>6</sup> regional or pudendal block and effective perineal infiltration are adequate forms of analgesia for low and outlet births.<sup>7</sup> A regional block (epidural or spinal) is usually required for a mid-rotational birth.<sup>1</sup>
3. Rotation of the fetal head should only be attempted when the uterus is relaxed between contractions.<sup>1</sup>
4. Rotational forceps birth should be **abandoned** if:
  - the forceps are not easily applied
  - the handles are not easily approximated
  - rotation is not easily effected with gentle traction<sup>1</sup>
5. Forceps should be conducted in theatre if there is an expectation of difficult birth / forceps.
6. High forceps birth should not be attempted.

## Vacuum extraction

1. To decrease risk of cephalhaematoma and intracranial bleeding the utilisation of the vacuum extractor is not recommended in situations with face presentations, or if the fetus is less than 34 weeks gestation.<sup>1, 8</sup>
2. The use of the vacuum extraction for operative vaginal birth is recommended as the first line method of birth in situations where there are no clear indications for a specific instrument.<sup>3</sup>
3. The preferred option in situations where women are infected or at high risk of infection (e.g. viral infections such as HIV or hepatitis) is to use forceps or a soft cup rather than a metal cup for assisted vaginal births.<sup>3</sup>
4. The use of the metal vacuum cup is superior at achieving greater traction with a higher rate of successful births than with use of a soft cup e.g. for occipito-lateral or occipito-posterior positions.<sup>3</sup> An OP metal cup or the KIWI Omnicup are superior to anterior cups for mid cavity OT and OP positions.
5. When rapid birth is required, use of a rapid negative pressure application of vacuum suction rather than increasing pressure in a stepwise increment reduces the duration of the procedure, with no difference in outcomes to the woman or neonate.<sup>8</sup>
6. The use of the metal cup is associated with more cases of scalp injury and cephalhaematoma<sup>3, 9</sup>, and retinal haemorrhage<sup>9</sup> than the soft cup.
7. To decrease risk of adverse events correct application of the cup to avoid disengagement, limiting time application to 20 minutes, and limiting the number of vacuum pulls to three contractions is recommended.<sup>9</sup> There must be descent of the presenting part with each pull.

## Indications for operative vaginal birth

Note that indications are not absolute, with assessment and clinical judgement required in every case.<sup>1, 2</sup>

- Fetal compromise – suspected or anticipated<sup>1, 2</sup>
- Delay in second stage<sup>1, 2</sup>
- Maternal medical conditions where maternal effort is contraindicated<sup>1</sup> e.g. cerebral aneurysm, risk of aortic dissection, proliferative retinopathy, severe hypertension or cardiac failure<sup>1</sup>, myasthenia gravis, spinal cord injury, cerebral vascular disease<sup>2</sup>
- Maternal exhaustion/fatigue<sup>1, 2</sup>

## Contra-indications for operative vaginal birth

- Less than full dilatation.<sup>2</sup> Exception: a prolapsed cord in a multiparous woman, or a second twin.
- Additional vacuum contraindications- gestation <34 weeks (risk of intracranial haemorrhage); face presentation<sup>1</sup>

### Relative contraindications:

- Fetal bleeding disorders (e.g. alloimmune thrombocytopenia)<sup>1, 2</sup>
- Fetal pre-disposition to fracture (e.g. osteogenesis imperfecta)<sup>1, 2</sup>
- Unknown fetal position<sup>10</sup>
- Inexperienced operator<sup>10</sup>
- Additional vacuum relative contraindications- between 34 and 36 weeks gestation (where limited evidence at these gestations); prior fetal scalp blood sampling<sup>1</sup> or application of fetal scalp electrode<sup>2</sup>

**N.B.** Maternal blood-borne viral infections are not a contraindication, however care should be taken to avoid situations where increased trauma to the fetal scalp is more likely.<sup>2</sup>

## Prerequisites for operative vaginal birth

### 1. Full abdominal and vaginal examination

- Fetal head is  $\leq 1/5$  palpable abdominally
- Vertex presentation
- Cervix is fully dilated and the membranes are ruptured
- The exact position of the head is able to be determined to allow correct placement of the instrument. Ultrasound may be helpful in determining position of the vertex.
- Assessment of caput and moulding
- Pelvis is deemed adequate

### 2. Preparation of the woman

- Informed maternal consent
  - Clear explanation given and consent obtained appropriate to clinical situation.
- Adequate analgesia appropriate for the birth is in place and effective
  - For mid-cavity rotational births this is commonly a regional block
  - [Pudendal block](#) may be appropriate, particularly if urgent birth
- Bladder emptied recently- Deflate or remove an indwelling catheter (IDC)
- Aseptic technique

### 3. Preparation of the staff

- Skilled trained operator to perform the procedure
  - See general key points
  - A senior obstetrician competent in performing mid-cavity births should be present if a clinician is inexperienced as a solo operator is performing the birth
- Adequate facilities available (appropriate equipment, bed, lighting)
- A backup plan is made should the procedure be unsuccessful
  - For mid-cavity births- theatre staff should be immediately available to allow a caesarean section to be performed without delay (less than 30 minutes)
- Anticipation of complications that may arise (e.g. shoulder dystocia postpartum haemorrhage)
- Personnel trained in neonatal resuscitation are available/paged See KEMH O&G Labour & Birth guideline: Neonatal Team Attendance at Birth

## Types of forceps available at KEMH

### Outlet and/or low forceps:

- Wrigley – suitable for use when the head is on the perineum<sup>10</sup>, for the after-coming head of a breech birth, and at caesarean section.
- Neville-Barnes – used for low or mid-cavity birth.<sup>4</sup>
- Laufe – outlet forceps.

### Mid cavity forceps

- Neville-Barnes – used for low or mid-cavity birth
- Kielland<sup>10</sup> – generally used for rotational birth when the head is in the transverse or the occipital-posterior position. The lock allows sliding to correct asynclitism.

## Procedure

### Equipment

#### 1. Check all equipment is available for use:

- Sterile bowl pack
- Sterile trolley cover
- Sterile gloves
- Lithotomy pole
- Sterile cotton wool balls
- Sterile large combine pad
- Urinary catheter
- Lubricant
- Plastic apron, protective glasses/face shield and mask

- Instrument pack – including x4 Howard Kelly forceps, x1 episiotomy scissors, x1 cord cutting scissors
2. Ensure equipment is available as required to perform an episiotomy
    - 1x 20 mL syringe
    - 1x 22 gauge needle
    - 1x 19 gauge needle
    - 10 mL 1% Lignocaine
  3. Ensure equipment is available for [pudendal](#) analgesia:
    - Pudendal needle, syringe
    - Lignocaine 1%
  4. Vacuum extraction machine – ensure it is tested and working prior to commencement.
  5. Provide a selection of vacuum cup types and sizes and a selection of forceps.
  6. Check the neonatal resuscitation cot is pre-warmed, checked, and equipment is operational.

## Procedure

Procedure	Additional information
<h3>Preparation</h3>	
<p><b>1 Informed consent</b></p> <p>Ensure the woman has given informed consent and document in the medical record.<sup>1</sup> Check for <a href="#">contraindications</a>.</p>	
<p><b>2 Analgesia</b></p> <p>Assess and provide appropriate analgesia.<sup>1</sup></p>	<p><a href="#">Pudendal block</a>, regional block, or perineal infiltration is appropriate for low and outlet births.<sup>7</sup> This is not essential for vacuum extraction.</p> <p>Regional analgesia (spinal or epidural) is recommended for rotational forceps.<sup>1</sup></p>
<p><b>3 Notify appropriate personnel</b></p> <ul style="list-style-type: none"> <li>• Inform the Labour/Birth Suite Midwifery Coordinator.</li> <li>• Advise the Neonatologist to attend the birth.</li> </ul>	<p>See O&amp;G Labour &amp; Birth: Neonatal Team Attendance at Birth guideline</p>
<p><b>4 Abdominal palpation</b></p> <p>Perform an abdominal palpation, followed by a bimanual vaginal examination. Ascertain the side of the</p>	<p>The head should be engaged (the maximum diameter of the fetal head having entered the pelvic inlet) and</p>



Procedure	Additional information
<p>fetal back and limbs and the side of the fetal heart (this is best done by placing the doptone in the midline and angulating to either side to detect where it is louder). When the fetal back is on the left, the position is twice as likely to be OA than OP. When the fetal back is on the right, the position is twice as likely to be OP than OA.<sup>11</sup></p>	<p>assisted birth should not be performed if the head is &gt; 1/5 palpable abdominally.<sup>1</sup> Engagement is determined both by abdominal and vaginal examination.<sup>1</sup></p>
<p><b>5 Maternal positioning</b></p>	
<p>Place the woman in dorsal lithotomy<sup>12</sup></p>	
<p><b>6 Bladder care</b></p>	
<p>Ensure the bladder is empty.</p>	<p>A full bladder may inhibit progress of labour.<sup>4</sup> See Bladder Management guideline for bladder care after birth.</p>
<p><b>7 Fetal heart rate (FHR) monitoring</b></p>	
<p>Monitor the FHR during the procedure</p>	<p>See guideline- Labour &amp; Birth: Fetal Surveillance: Fetal Heart Monitoring.</p>
<p><b>8 Vaginal examination</b></p>	
<p>Perform a vaginal examination to determine:</p> <ul style="list-style-type: none"> <li>• dilatation</li> <li>• position</li> <li>• station</li> <li>• moulding</li> <li>• presence of caput.</li> <li>• Overall size of the pelvis</li> <li>• If the position on vaginal examination is not in agreement with the expected findings on abdominal examination, an ultrasound scan should be performed.</li> </ul>	<p>Allowance should be made for extensive caput and/or moulding of the fetal head.<sup>1</sup> If substantial caput is present soft parts of the fetal head may be felt below the ischial spines, but the leading bony part of the head may be above the ischial spines.<sup>7</sup> This will influence if an operative vaginal birth can be safely performed.<sup>7</sup></p>
<p><b>9 Follow either <a href="#">forceps</a> or <a href="#">vacuum</a> procedure below:</b></p>	

Procedure	Additional information
<b>FORCEPS:</b>	
<b>Location for forceps</b>	
Consider a 'trial of forceps' birth in theatre if there is <a href="#">higher failure risk</a> .	See <a href="#">trial in theatre section</a> in key points for examples.
<b>Application of the forceps</b>	
9.1 Insert the left blade into the left side of the vagina while simultaneously guarding the vaginal tissue with the right hand. <sup>12</sup>	Careful positioning avoids maternal tissue being caught under the forceps blade.
9.2 Insert the right blade into the right side of the vagina while guarding the vaginal tissue. <sup>12</sup>	
9.3 Note the time of forceps application.	
<b>Adjustment and articulation of the blades</b>	
9.4 Assess the blades to ensure correct application. <sup>12</sup> Adjust if required.	Correct application presents the smallest cranial diameter to the birth canal to facilitate birth. <sup>13</sup>  The plane of the shank lies over the cranial flexion or pivot point, the sagittal suture should lie in the midline of blades, and blades should be symmetrically applied to the skull. <sup>13</sup>
9.5 Lock blades together when positioned correctly <sup>12</sup>	
<b>Applying traction</b>	
9.6 Instruct the woman to bear down with contractions unless contra-indicated. <sup>13</sup>	
9.7 Apply traction to follow the pelvic curve during contraction. The dominant hand gives outward pull which is deflected by continuous downward pressure by the accoucheur's other hand. <sup>13</sup>	Consider episiotomy as the head nears birth. <sup>12</sup> See also KEMH O&G, Perineal Care and Repair guideline.
<b>Removing the forceps</b>	
9.8 The forceps are removed in the opposite order to the application. <sup>12</sup> Note the time forceps are removed. Then go to <a href="#">11: Post-procedure</a> care.	Inform neonatologist if difficulty with birth including recourse to caesarean or sequential use of instruments. <sup>1</sup> See also O&G guideline: Neonatal Care- Additional observations for subgaleal haemorrhage

Procedure	Additional information
<b>VACUUM:</b>	
<b>Application of the vacuum cup</b>	
<p>9.1 Apply the centre of the cup at or behind the flexion point located over the sagittal suture 3cm in front of the posterior fontanelle.<sup>4</sup> For a 6cm outer diameter cup (Bird OP or KIWI), the edge of the cup will be on the edge of the posterior fontanelle. The distance from the other edge of the cup to the edge of the anterior fontanelle should be 3 cm for an average fetus.</p> <p>9.2</p>	<p>Application of the cup over the flexion point maximises traction and minimises cup detachment.<sup>4, 9</sup> Placing cup in front of flexion point can result in unwanted head extension.</p> <p>Placing the cup over the flexion point presents the smallest diameter of the head to the maternal pelvis resulting in less force required to assist birth.<sup>14</sup> When the edge of the vacuum cup is at least 2cm, the occiput rotates anteriorly at birth in 96% of cases.<sup>15</sup></p>
<p>Check the position and application of the cup.</p>	<p>Ensure no vaginal or cervical tissue is caught by the cup.<sup>9</sup> Risk for subgaleal haemorrhage increases if the cup is positioned incorrectly on the edge of a sagittal suture.<sup>9</sup></p>
<b>Applying traction</b>	
<p>9.3 Note the time the cup is applied and traction is initiated.</p> <p>Adequate chignon forms within 1-2 minutes of suction.<sup>8</sup></p>	<p>Discontinue traction between contractions or if an audible hiss is heard indicating a loss of vacuum. Rotating or side-to-side movements should be avoided as this increases the risk for cup detachment and vaginal wall injury.<sup>14</sup></p>
<p>9.4 Turn on the suction pressure as requested by the medical practitioner up to the limit of 80 kilopascals (kPa). Note: Some practitioners may request the pressure be initially turned up to 20 kPa; the position of the cup is checked, then the assistant may be requested to turn up the pressure to 80 kPa.</p>	<p>The rapid negative pressure application method, rather than increasing pressure in a stepwise method, reduces time when a rapid birth is required, with no difference to maternal or neonatal outcomes<sup>8</sup></p> <p>An adequate chignon is formed within 2 minutes of creating the vacuum, and traction may be commenced after 1 minute without effecting the efficiency or safety.<sup>8, 16</sup></p>
<p>9.5 During a contraction apply gentle steady traction, at right angles to the</p>	<p>With maternal expulsive effort during the contraction the accoucheur applies</p>

Procedure	Additional information
<p>cup, with the axis of traction following the pelvic curve during a contraction.<sup>4</sup> Note the time of each traction pull.</p> <p>9.6 <b>Abandon the procedure if required</b> – see general key points for '<a href="#">threshold for abandoning</a>'. In addition, discontinue if the cup detaches three times<sup>1, 4</sup></p> <p>Inform the neonatal doctor if there has been difficulty with the operative vaginal birth including recourse to caesarean or where sequential use of instruments involved, so the neonate may receive appropriate surveillance.<sup>1</sup> See also O&amp;G guideline: Neonatal Care: Additional observations for SGH</p>	<p>traction.<sup>10</sup></p> <p>Prolonged traction may lead to intracranial injury.<sup>4</sup></p> <p>The majority of malpractice litigation results from failure to abandon the procedure at an appropriate time.<sup>1, 2</sup> Increased risk of neonatal trauma and admission to special care units are associated with excessive pulls (&gt;3) and sequential use of instruments.<sup>1</sup></p> <p>With effective uterine contractions and maternal expulsive effort observational studies have shown almost all vacuum extraction births can be completed within 15 minutes<sup>16</sup></p>
<p>9.7 Evaluate the need for episiotomy.</p>	<p>See KEMH O&amp;G guideline: Perineal Care and Repair: Episiotomy</p>
<p><b>Removing the vacuum cup</b></p>	
<p>9.8 Cease the suction pressure and remove cup when the jaw is visible.<sup>4</sup> Note the time the cup was removed. Note the time of birth.</p>	

## Post procedure

### 10 Documentation

Document the operative vaginal birth or unsuccessful attempt on the:

- MR275 Operative Vaginal Birth
- MR230.01 Labour and Birth Summary

### Communication

Inform the neonatal doctor if there has been difficulty with the operative vaginal birth (including recourse to caesarean or where sequential use of instruments involved).

Procedure	Additional information
<b>11 Post procedure management</b>	
11.1 Assess the vagina for trauma and repair as required.	See also Clinical Guideline, O&G Perineal Trauma.
11.2 Recommend administration of maternal prophylactic IV antibiotics after the cord has been clamped, within 6 hours of birth. <sup>17</sup> See <a href="#">antibiotic section below for criteria and administration</a> . <b>[NEW Sept 2020]</b>	If allergic to penicillins, see <a href="#">antibiotic prophylaxis section below</a> for alternatives.
11.3 Discuss bladder management with the woman and monitor voids. <sup>1, 2</sup> See Clinical Guideline, O&G: Bladder Management	Women who have spinal or epidural top-ups for an operative vaginal birth should be informed they will have an IDC in situ for 12 hours post procedure. <sup>1</sup>
11.4 Initiate measures to reduce swelling and pain to the perineum if trauma has occurred.	See KEMH Clinical Guideline, O&G: Perineal Trauma and Care.
11.5 Unless contraindicated, offer regular analgesia (paracetamol and anti-inflammatories). <sup>1, 2</sup>	
11.6 Prior to discharge the medical team should counsel the woman about: <ul style="list-style-type: none"> <li>the indication for operative vaginal birth</li> <li>management of any complications</li> <li>prognosis for future births.<sup>1, 2</sup></li> </ul> Where possible, the obstetrician who performed the birth should review and debrief the woman. <sup>1, 2</sup>	After operative vaginal birth in a first labour there is a high probability (78-91%) of achieving spontaneous vaginal birth in the next pregnancy. <sup>1</sup> For women who experience a third or fourth degree tear, the obstetric team should discuss risk of recurrence and implications with future births. <sup>1, 2</sup>

## Antibiotic prophylaxis following operative vaginal birth [NEW Sept 2020]

Antibiotic prophylaxis should be recommended to women following operative vaginal birth.

### Background

The ANODE trial found that the administration of **IV Amoxicillin + clavulanic acid** (1g + 200mg) **within 6 hours of birth** was associated with a reduction of confirmed or suspected maternal postnatal infection within 6 weeks of birth. Significantly fewer

women allocated to the treatment arm of the study had an infection (11%) compared with women allocated to placebo (19%; Risk ratio 0.58, 95% CI 0.49 – 0.69;  $p < 0.0001$ ; absolute risk reduction 8%; NNT = 13).<sup>17</sup>

## Administration

Recommend to women who have undergone vacuum or forceps birth:

- [Amoxicillin + clavulanic acid](#) 1.2g IV (as a single dose) within 6 hours of birth
- To minimise neonatal exposure, only administer **AFTER cord clamping**

For women **allergic to penicillins** alternative regimens to consider include:

- [Cefazolin \(Cephazolin\)](#) 2g IV + [metronidazole](#) 500 mg IV if non severe hypersensitivity (immediate or delayed) to penicillin
- OR [Clindamycin](#) 600mg IV<sup>1</sup> if severe hypersensitivity (immediate or delayed) to penicillin
- OR Discuss with Microbiology Registrar or on-call Microbiology Consultant if concerns. In the presence of multiple antibiotic allergies the risk benefit of prophylactic antibiotics should be carefully considered
- For further information regarding penicillin hypersensitivity, refer to “Management of patients reporting hypersensitivity to penicillin” in the Therapeutic Guidelines 2020

For women **without IV access**<sup>1</sup>, or who **decline IV** antibiotics, with no concern regarding penicillin hypersensitivity, the following regime may be considered:

- [Amoxicillin + clavulanic acid 875/125mg](#) oral (as a single dose) within 6 hours of birth

## Exclusion criteria:

- Gestation <36 weeks
- Attempted/unsuccessful forceps / vacuum that progresses to caesarean birth (will instead receive caesarean section antibiotic prophylaxis)
- Other indications for **ongoing postpartum** antibiotics (refer instead to relevant guidelines for antibiotics for these indications):
  - On triple IV antibiotics intrapartum for suspected sepsis
  - Third or fourth degree perineal tears
- Contraindications to prophylactic amoxicillin and clavulanic acid. Note- see alternatives above if allergic to penicillins

# Pudendal nerve block

Pudendal nerve blocks are used to provide analgesia for second stage labour pain; low forceps birth,<sup>18</sup> or vacuum extraction birth;<sup>19</sup> women who have contra-indications to lumbar analgesia; episiotomy;<sup>18</sup> or for the repair of vaginal or perineal lacerations.<sup>18, 19</sup>

## Procedure

### Equipment

- 1 X disposable pudendal block needle
- 10mL Local anaesthetic e.g. 1% Lignocaine
- 1 X 20mL syringe

PROCEDURE	ADDITIONAL INFORMATION
<p><b>1 Prior to commencing</b></p> <p>Obtain maternal consent &amp; prepare equipment.<sup>20</sup></p>	
<p><b>2 Position</b></p> <p>Place the woman in lithotomy position.<sup>21</sup></p>	
<p><b>3 Technique</b></p> <p>3.1 Clean the area with antiseptic solution and aseptic technique.<sup>20</sup></p> <p>3.2 Hold the guarded needle between the middle and index finger of the right hand to block the right pudendal nerve (The left hand holds the needle for the left side).</p> <p>3.3 Palpate the ischial spine.<sup>21</sup></p> <p>3.4 Advance the needle posterior to the ischial spine to a depth of 1-1.5 cm<sup>21</sup> using a loss of resistance method.<sup>22</sup> This places the needle through the sacrospinous ligament.<sup>21</sup></p> <p>3.5 Aspirate for blood.<sup>20</sup></p>	<p>The needle guards the vaginal mucosa and protects the fetal head.</p> <p>The sacrospinous ligament lies 1 cm medial and posterior to the ischial spine.</p> <p>The tip of the needle will now lie in the area of the pudendal nerve.</p> <p>Aspiration is essential due to the close proximity of the pudendal artery.<sup>22</sup> If blood present, withdraw and reposition.<sup>20</sup></p>

PROCEDURE	ADDITIONAL INFORMATION
3.6 Inject up to 10mL of local anaesthetic e.g. 1%Xylocaine / Lignocaine.	Xylocaine 1% appears in maternal and fetal blood within 5 minutes of the block, and peaks between 10 to 20 minutes.  For episiotomy, insert 3-4mL initially as needle is withdrawn, then (without removing the needle) administer the remainder in a fan shape on either side of original injection. <sup>20</sup>
3.7 Repeat the procedure on the opposite side.	Allow a minimum 4-5 minutes after pudendal block administration for effect to start prior to commencing painful procedures. <sup>20</sup>

See also: Clinical Guideline, O&G, Perineal Care and Repair: Episiotomy & Infiltration of the Perineum

## References

1. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. C-Obs 16: Instrumental vaginal birth. **RANZCOG**. 2020. Available from: <https://ranzcof.edu.au>
2. Murphy DJ, Strachan BK, Bahl R, on behalf of the Royal College of Obstetricians Gynaecologists. Green-top guideline No. 26: Assisted vaginal birth. **BJOG**. 2020;127:e70-e112. Available from: <https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg26/>
3. O'Mahony F, Hofmeyr GJ, Menon V. Choice of instruments for assisted vaginal delivery (Review). **Cochrane Database of Systematic Reviews**. 2010 (11). Available from: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005455.pub2/pdf>
4. Edozien LC. Towards safe practice in instrumental vaginal delivery. **Best Practice & Research Clinical Obstetrics and Gynaecology**. 2007;21(4):639-55.
5. Women's Healthcare Australasia [WHA]. The How to Guide: WHA CEC Perineal Protection Bundle<sup>®</sup> Mitchell, ACT: WHA. 2019. Available from: [https://women.wcha.asn.au/sites/default/files/docs/wha\\_national\\_collaborative\\_how\\_to\\_guide\\_21.1.20.pdf](https://women.wcha.asn.au/sites/default/files/docs/wha_national_collaborative_how_to_guide_21.1.20.pdf)
6. Nikpoor P, Bain E. Analgesia for forceps delivery (Review). **Cochrane Database of Systematic Reviews**. 2013 (9). Available from: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008878.pub2/pdf>
7. Cargill Y, MacKinnon C. SOGC Clinical practice guidelines: Guidelines for operative vaginal birth: No. 148. **Int J Gynaecol Obstet**. 2005;88(2):229-36. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15779110>
8. Suwannachat B, Lumbiganon P, Laopaiboon M. Rapid versus stepwise negative pressure application for vacuum extraction assisted vaginal delivery (Review). **Cochrane Database of Systematic Reviews**. 2012 (8). Available from: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006636.pub3/pdf>
9. Hook CD, Damos JR. Vacuum-assisted vaginal delivery. **American Family Physician**. 2008;78(8):953-60.



10. Pairman S, Tracy S, Dahlen H, Dixon L, editors. *Midwifery: Preparation for practice*. 4th ed. Chatswood, NSW: Elsevier; 2019.
11. Snow W. **Roentgenology in Obstetrics and Gynaecology**. 1952:P95, Springfield.
12. South Australian Perinatal Practice Guidelines. Operative vaginal deliveries: SA Maternal, Neonatal & Gynaecology Community of Practice. 2018. Available from: [https://www.sahealth.sa.gov.au/wps/wcm/connect/b15290804ee53288a632afd150ce4f37/Operative+Vaginal+Deliveries\\_PPG\\_v5\\_1\\_03052018.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-b15290804ee53288a632afd150ce4f37-megHJbH](https://www.sahealth.sa.gov.au/wps/wcm/connect/b15290804ee53288a632afd150ce4f37/Operative+Vaginal+Deliveries_PPG_v5_1_03052018.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-b15290804ee53288a632afd150ce4f37-megHJbH)
13. O'Grady JP, Pope CS, Hoffman DE. Forceps delivery. **Best Practice & Research Clinical Obstetrics** 2002;16(1):1-16.
14. McQuivey RW. Vacuum-assisted delivery: A review. **The Journal of Maternal-Fetal and Neonatal Medicine**. 2004;16:171-9.
15. Bird GC. *BJOG*. 1976;83: 197.
16. Vacca A. Vacuum-assisted delivery. **Best Practice & Research Clinical Obstetrics and Gynaecology**. 2002;16(1):17-30.
17. Knight M, Chiochia V, Partlett C, Rivero-Arias O, Hua X, Hinshaw K, et al. Prophylactic antibiotics in the prevention of infection after operative vaginal delivery (ANODE): A multicentre randomised controlled trial. **Lancet**. 2019;393 (10189):2395-403.
18. Murray S, McKinney E. *Foundations of maternal-newborn and women's health nursing*. St. Louis, Missouri: Elsevier Saunders; 2014.
19. Luesley D, Baker P, editors. *Obstetrics and gynaecology: An evidence-based text for MRCOG*. 2nd ed. London: Hodder Arnold; 2010.
20. Medforth J, Battersby S, Evans M, Marsh B, Walker A, editors. *Oxford handbook of midwifery*. 2nd ed. New York: Oxford University Press; 2011.
21. Rathmell JP, Neal JM, Viscomi CM. **Regional Anesthesia: The requisites in anesthesiology**. Philadelphia: Elsevier Mosby; 2004.
22. D'Angelo R, Thomas JA. Regional analgesia in obstetrics. In: Palmer CM, D'Angelo R, Paech M, editors. **Handbook of Obstetric Anesthesia**. Oxford: Bios; 2002. p. 41-67.

## Related legislation and policies

Department of Health Western Australia. [OD 0657/16: WA Health Consent to Treatment Policy](#). 2016.

## Related NMHS & WNHS policies, procedures and guidelines

WNHS Policies:

- Procedural Count: Management and Procedure

Obstetrics & Gynaecology clinical guidelines:

- Birth After Previous Caesarean
- Bladder Management
- Labour & Birth: Fetal Surveillance: Fetal Heart Monitoring (Intrapartum)
- Labour & Birth: Neonatal Team Attendance at Birth
- Neonatal Care (observations for subgaleal haemorrhage)
- Perineal Care and Repair

Perioperative clinical guidelines: Surgical Count: Management and Procedure

Pharmacy Medication Monographs (Adult): Amoxicillin with clavulanic acid; Cefazolin (Cephazolin), Clindamycin, Metronidazole

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Amendments: (since 2018)	<p><b>July 2018:</b> Evidence on this topic was reviewed and overall guidance remains unchanged. Minor changes and formatting have been made.</p> <p><b>Sept 2020:</b> Antibiotic prophylaxis after operative vaginal birth added; links added to new Procedural Count WNHS policy for standardised checking processes [<b>RCA Recommendation</b>]; updated wording, aligning with latest RANZCOG guidance; contraindications, prerequisites, informed consent, episiotomy guidance updated. See <a href="#">Guideline Updates</a> (O&amp;GD) Sept for full list of changes</p>		
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