Second Stage of Labour

Approved – **For Review – May 2011**

Preamble

Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to it's' doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

Background

The onset of second stage is a major landmark in many labours. Women may feel any combination of anticipation, fear, exhaustion, pressure, stretching, surprise, expectation, and satisfaction at having reached full dilation (2). Second stage also marks a period of increased involvement for the midwife. She must monitor second stage progress and descent, monitor maternal and fetal wellbeing, prepare equipment and supplies for the delivery, anticipate the need for resuscitation or other interventions, as well as be responsive to women's individual behavioural and physiological cues. The conventional conduct of second stage has been characterized by urgency and haste. Caregivers instructed women to push long and hard as soon as they were fully dilated in the belief that the shorter the second stage the better (3). Midwives have long been promoters of a physiological approach to second stage which recognises the benefits of waiting until a strong expulsive urge accompanies full dilation and encourages spontaneous pushing in synch with women's own cues. This guideline offers recommendations for the conduct of second stage based on midwifery values and the best available evidence.

The purpose of this guideline is to enhance clinical assessment and decision-making in second stage and to serve as a basis for discussions with clients about the second stage of labour. Midwives will incorporate this guideline, in addition to other Department of Midwifery and College of Midwives of British Columbia guidelines, to inform the process of making a clinical judgement about the progress and management of a woman's individual and multifaceted labour. It applies to term singleton gestations in a cephalic presentation.

Definitions

SECOND STAGE

The second stage of labour is defined as the period from full dilation to the birth of the baby. Progress is determined by descent of the presenting part. In addition, the second stage incorporates many of the cardinal movements necessary for the fetus to negotiate the birth canal.

FULL DILATION

Full dilation is defined as the point in labour when the cervix has dilated to the full diameter of the presenting part allowing it to pass through the cervix. Full dilation marks the onset of second stage, however, confirmation of full dilation by vaginal exam may occur sometime after this stage has in fact been reached.

LATENT PHASE OF SECOND STAGE

The latent phase of second stage, also termed the resting phase, is defined as the period of time after a woman is fully dilated when she experiences contractions that are often less strong and less frequent than those of the active phase of first stage and when she lacks a strong urge to push. Some women do not have a latent phase in second stage, while others may experience this phase lasting an hour or more. When epidural analgesia is used, research shows that vaginal birth rates increase when active pushing is delayed by up to two hours until the presenting part has descended, the woman has a strong urge to push or the head is visible on the perineum (5).

ACTIVE PHASE OF SECOND STAGE

The active phase of second stage, also termed the expulsive phase, is defined as the period after full dilation of the cervix and up to the birth of the baby where the woman experiences regular contractions with an expulsive urge. Active phase of second stage can be assumed when the head is visible on the perineum.

Onset of Second Stage

Some midwives may rely of the following presumptive signs of full dilation to indicate the onset of second stage. The reliability of these signs has not been determined. If there is any doubt a vaginal exam should be done to confirm full dilation, generally within 30 minutes or sooner.

TABLE 1: PRESUMPTIVE SIGNS OF FULL DILATION (9,10)
➢ Expulsive uterine contractions and a strong urge to push
➢ Dilation and gaping of the anus
➢ Anal cleft line
➢ Appearance of the rhomboid of Michaelas
➢ Show
➢ Appearance of the presenting part at introitus

Facilitating Second Stage

The following are some of the management techniques midwives may consider to facilitate the progress of second stage of labour:

- Support and encouragement
- Adequate hydration and nutrition
- Frequent position changes
- Upright positions (standing, birth stool, toilet)
- Empty bladder
- Complementary therapies if midwife is skilled in their use (homeopathics, herbs, acupressure, etc)
- Amniotomy (if membranes intact)
- Directed pushing
- Ferguson's reflex (to stimulate a pushing urge if a spontaneous urge is absent)
- Midwives forceps / finger forceps (to increase pelvic diameter)
- Oxytocin augmentation
- Epidural
- Ritgen manoeuvre

The caregiver role in second stage includes communication with the woman about bearing down with contractions, ways to push effectively, and how to position herself. McKay et al found that women in second stage found it helpful if caregivers reviewed the range of sensations they may experience in second stage (including that these sensations can be painful), and also prepared them for the variation in the length of second stage (2).

Monitoring in Second Stage

TABLE 2: MONITORING IN SECOND STAGE

Fetus	Mother
1) FHR (q15min latent phase; q 5 active 2nd stage)	1)Vital signs as in 1st stage or more frequently if indicated
2) Position	2) Coping ability
3) Flexion	3) Bladder
4) Station (descent)	4) Amniotic fluid (colour & quantity)
5) Caput (note presence or absence and changes)	5) Adequacy of contraction pattern
6) Moulding (note presence or absence and changes)	

Management of Second Stage

PUSHING

Prolonged valsalva style pushing (breath-holding, sustained 10 second pushes, and straining throughout the contraction) is associated with a decrease in venous return, decreased cardiac output, decreased blood pressure and therefore reduced blood flow to the placenta and fetus (8).

Research supports a spontaneous, mother-led approach to bearing down in the second stage (ie. push only with an urge to push, using open or closed glottis as long as the urge remains). Spontaneous pushing often results in a later onset of pushing relative to the start of the contraction, shorter pushes (up to 6 sec each), and more breathing (and hence oxygenation) during contractions. According to Penny Simkin, spontaneous bearing down produces less damage to the maternal birth canal, less exhaustion in the mother and more efficient bearing down and does not increase the length of second stage (8).

However, this strategy may contradict some caregivers' personal experience where a more directive approach results in quicker progress. Some women may benefit from direction about pushing from their caregiver (2).

If there is no apparent progress after 20-30 min of spontaneous pushing, encourage a more upright position. Move to directed pushing if spontaneous bearing down does not achieve progress after 1 hour of active second stage.

POSITIONS FOR BIRTH

Encouraging mobility and frequent position changes in second stage may promote uterine profusion, optimal fetal alignment in the maternal pelvis, and descent of the presenting part (8).

TABLE 3: ADVANTAGES AND DISADVANTAGED TO DIFFERENT POSITIONS IN 2ND STAGE

Hands and Knees	Sitting/Squatting	Side-Lying
▪ May facilitate anterior rotation with OP presentation	▪ Shorter second stages	▪ Good choice when maternal exhaustion present
▪ Good choice if there is separation of symphasis pubis	▪ Fewer abnormal fetal heart patterns	▪ May promote rotation in cases of malpositon/ malpresentation
▪ Good choice if suspicion of potential shoulder dystocia	▪ Fewer assisted deliveries	▪ Slower, more controlled crowning with potential for fewer lacerations
▪ May reduce pressure on perineum and reduce perineal lacerations	▪ Reduction in severe pain	▪ May improve oxygenation ▪ of fetus

The only disadvantage found to be associated with upright positions is an increase in blood loss greater than 500ml (3). This outcome occurs almost exclusively in women using birth chairs therefore prolonged pushing on a birth stool or toilet should be avoided.

PROTECTING THE PERINEUM

According to the available evidence there is no optimal maneuver for preventing perineal trauma at birth (3). The available research focuses of the differences between "hands-on" and "hands-off" approaches, however, is complicated by the fact that there is no uniform definition of which features comprise the elements of each approach (3). Strategies to protect the perineum include:

- Antenatal perineal massage
- Warm compresses to the perineum
- Fetal head control; keeping fetal head well flexed (essential in lithotomy position)
- Perineal support at crowning
- Delivering the head between contractions, particularly with a multipara
- Awaiting spontaneous restitution and external rotation of head

The evidence supports a restrictive approach to episiotomy (25). Midwives should resort to episiotomy only in the presence of an abnormal fetal heart rate or maternal distress or in the rare instance that the perineum is responsible for a lack of progress. Restricting the use of episiotomy reduces the risk of anal sphincter laceration by approximately 50% (25).

Documentation

IN PROGRESS NOTES:

- Document full dilation, urge to push, onset of active pushing, maternal coping
- Write a progress note every ½ hour after full dilation had been reached / confirmed
- Quantify progress by documenting station, caput (in cm), head visible at introitus (in cm) and position
- Note the contraction pattern and adequacy of contractions
- Include brief description of maternal and fetal wellbeing
- Include plan and timing of next assessment

ON PARTOGRAM:

- FHR every 15 min in latent phase and every 5 minutes or after every contraction in active phase
- Position changes
- Voiding or catheterizations, amount & colour
- Presence of bleeding or show
- Amniotic fluid colour and quantity
- Maternal vital signs

OTHER:

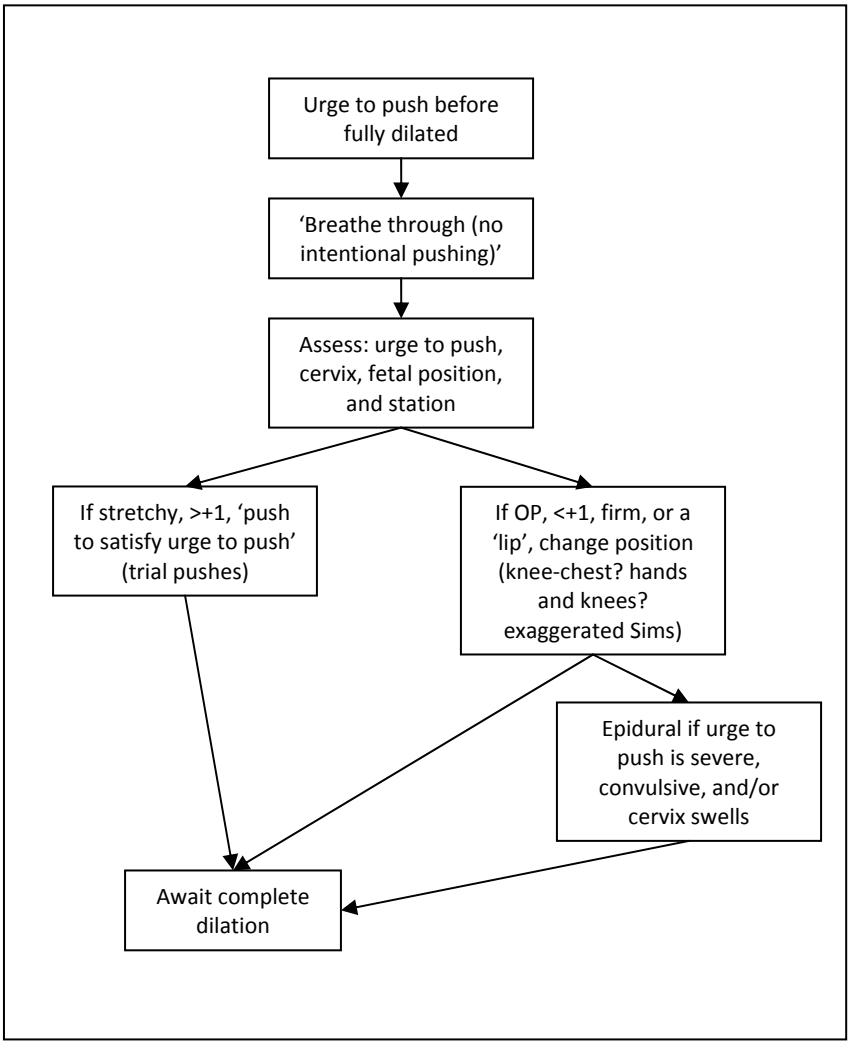
- Rate of oxytocin infusion
- Effectiveness of epidural
- Use of entonox or narcotics (such as fentanyl)

Management of Urge to Push prior to Full Dilation

An uncontrollable urge to push before full dilation leaves the midwife with a dilemma – whether to encourage the woman to follow her body's instinct and risk a swollen or torn cervix (and possibly a halt in progress), or to instruct to woman not to push against her body's natural urge to do so. A multiparous woman with a stretchy rim of cervix and a strong desire to push is unlikely to do harm as long as she follows an instinctive urge and does not exhaust herself (7,8). If a woman is less than 8cm dilated and has an irresistible urge to bear down, a position change (ie.

knee chest) may relieve the urge to push by using gravity to move the head away from the cervix and ease the pressure on the posterior vaginal wall (8). The most common etiology for an early urge to push at less than 8cm is an occiput posterior position or other malposition. Consider immersion in water or analgesia if urge is severe. Manual repositioning of the head may also be a possibility.

FIGURE 1: MANAGEMENT OF AN EARLY URGE TO PUSH



Management of Cervical Lip

A cervical lip is thought to be the result of uneven pressure by the presenting part on the cervix or by the anterior position of the cervix becoming trapped between the fetal head and the pubic arch (8). Gravity neutral positions may be beneficial. The midwife can attempt a manual reduction of a persistent cervical lip once she has explained the procedure to the woman and obtained consent.

OTHER CONSIDERATIONS IN THE MANAGEMENT OF A CERVICAL LIP:

- Contractions (are they strong enough? frequent enough?)
- Emotional factors (history of sexual or physical abuse, previous traumatic birth experience, etc)
- Cultural factors and/or language barriers
- Alternative remedies (such as arnica oil, rescue remedy, evening primrose oil, and homeopathic remedies such as pulsatilla) may help with a persistent lip

Management of Second Stage with an Epidural

Although epidural analgesia is a very effective method of providing pain relief in labour it has been associated with an increased risk of mid-pelvic operative vaginal birth and caesarean section (21). This increase in operative delivery is thought to be related to the lengthening of labour and in particular the lengthening of second stage.

Two main strategies have been examined in an effort to reduce the operative delivery rate associated with epidural: 1) reducing or turning off the epidural at the start of second stage, and; 2) "delayed pushing" where women are encouraged to wait 2 hours before active pushing or until the fetal head is visible on the perineum and/or an irresistible urge to push is felt.

Turning down an epidural is not common practice in Vancouver, as women are less able to cope with the intense sensations of second stage when analgesia is abruptly withdrawn.

A large randomised controlled trial (the PEOPLE Study) examined the effects of delayed pushing for nulliparous women with epidural analgesia and found that difficult delivery was reduced with delayed pushing (4). Women in the delayed pushing group also had a shorter interval from commencement of pushing to delivery. Abnormal cord pH was more frequent in the delayed pushing group, however, neonatal morbidity was not increased. When fetal and maternal surveillance is reassuring, "delayed pushing" or "labouring down" is the preferred approach to managing the second stage when an epidural is in place.

Considerations for Homebirth

The standard of care in Canada is to have two trained attendants present at every delivery, whether in home or hospital. Midwives attending homebirths are responsible for coordinating a second attendant to attend the birth for the second and third stages of labour (31). However, births can be unpredictable, and despite the midwife's best efforts, it may not always be possible to have a second attendant at the home in time for the delivery. Midwives should counsel women about the risk of having only one attendant at the home in the course of antenatal discussions about homebirth.

Midwives should adapt their threshold for prolonged second stage at a homebirth to take into account the time to organize and accomplish transport to hospital.

Dystocia in Second Stage

The need and appropriateness of defining a limit to the length of second stage of labour is controversial. The mean length of second stage for healthy women at term without oxytocin or epidurals is 54 minutes for nulliparas and 18 minutes for multiparas (11). The statistical limit (defined as 2 standard deviations from the norm) is 2.5 hours for nulliparas and 1 hour for multiparas. Epidural analgesia is thought to increase the length of second stage by an average of 20-30 minutes.

The accepted definition of dystocia in second stage is greater than one hour with no descent of the presenting part (12). A second stage greater than 3 hours in nulliparas and greater than 2 hours in multiparas is considered prolonged. Table 3 shows some risk factors which may predispose some women to a prolonged second stage (13,14)

TABLE 4: RISK FACTORS ASSOCIATED WITH A PROLONGED SECOND STAGE > 120 MIN
• Nulliparity
• Maternal age >35 years
• Preeclampsia
• Diabetes (any type) *
• Macrosomia
• Male infant *
• Epidural
• Labour induction

• Labour augmentation with Oxytocin
• Chorioamnionitis

* factors associated with an increased risk for a second stage >240min (18)

There are also ethnic and age differences in the length of second stage. Greenberg et al (2006) found that Black women had the shortest second stages followed by Latina and Caucasian women. Nulliparous Asian women had the longest second stages (15). Older nulliparous women are at increased risk of prolonged second stage even when potential confounders are controlled for (16). It has been hypothesized that the myometrium becomes less responsive to oxytocic agents and prostaglandins with age (16).

The length of second stage, even in those lasting up to 6 hours, is not related to adverse neonatal outcome (17,18) provided there is close monitoring of fetal wellbeing including the use of scalp gas sampling as needed. There are associations between length of second stage and undesirable maternal outcomes (13,14). The length of second stage is not associated with an increase in stress urinary incontinence, however, the risk of future stress urinary incontinence is 10 times greater for women who have a forceps delivery (20).

TABLE 5: MATERNAL MORBIDITY ASSOCIATED WITH PROLONGED SECOND STAGE (>120 MIN) (13, 14)
• Increased risk of perineal trauma
• Increased risk of instrumental delivery
• Increased risk of postpartum hemorrhage
• Increased risk of chorioamnionitis
• Increased risk of episiotomy use

After 3 hours in the second stage, delivery by caesarean section or other operative method increases progressively such that by 5 hours the prospects for spontaneous vaginal delivery in the subsequent hour are only 10 -15 percent.

TABLE 6: LIKELIHOOD OF VAGINAL DELIVERY BY LENGTH OF SECOND STAGE			
≤ 120 min (90.2%)	>120 min (7.8%)	121-240 min (5.7%)	>240min (2.2%)
98.7%	84%	90.2%	65.5%

Midwives should be aware of the potential for an increased risk of shoulder dystocia with a prolonged second stage, particularly in a multiparous woman, and be well prepared to deal with shoulder dystocia at the time of birth. Active management of third stage is warranted when the second stage is prolonged.

Midwives should be mindful that a psychological obstacle (fear, history of abuse, prior trauma) may be also be responsible for a lack of process in second stage (8).

The College of Midwives of British Columbia recommends consultation with a physician in the following circumstances:

- If following an hour of latent second stage, encouraging the woman to push doesn't result in a spontaneous urge to push and descent (5)
- Prolonged second stage (32)

Operative Delivery

Operative delivery, whether by forceps, vacuum, or caesarean section, requires a transfer of care to an obstetrician, and attendance by a paediatrician at the birth. In this case, the midwife is responsible for documenting the transfer of care on the chart, providing supportive care, and then making a clear plan with the consultants involved about when care of the mother and/or baby will be transferred back to the midwife.

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