Induction/Augmentation of Labour: Oxytocin Administration

Site Applicability

St Paul's Hospital Pregnancy, Birthing and Newborn Centre (PBNC)

Practice Level

Specialized: Registered Nurses (RN) with advanced skills – specialized education in Perinatal Nursing

Registered Midwives (RM)

Physicians with maternity privileges (Family Practice, Obstetricians

Requirements

All perinatal care providers (physicians, midwives, and nurses) are recommended to attend education for fetal health surveillance (FHS) every two years. This includes:

1. Participation in online learning activities (e.g. Canadian Fetal Health Surveillance Steering Committee Courses – Fundamentals of FHS or FHS Refresher Program), and
2. Attending locally provided, institutional/health region based interdisciplinary workshops which review material pertaining to both intermittent auscultation and electronic fetal monitoring.

- The indication for oxytocin administration must be documented.
- An order by a physician is required for oxytocin induction or augmentation of labour
- Oxytocin Safety Checklist must be completed prior to commencing oxytocin (CST PowerChart → AdHoc → OB Documentation → Oxytocin Safety Checklist)
- Oxytocin may only be increased in the presence of a normal FHS tracing or by direct documented order of an obstetrician in the presence of an atypical FHS finding. Oxytocin should not be administered when there is abnormal FHS unless the inciting cause is identified and rectified.
- One to one RN care is required for patients receiving an oxytocin infusion.
- Continuous Electronic Fetal Monitoring (EFM) is required when oxytocin is being administered.

Need to Know

The goal is to establish regular uterine activity. Ideally, this will produce cervical changes and fetal descent. Precise delivery of the drug is critical to avoid tachysystole of the uterus.

- For definitions related to the administration and ongoing infusion of oxytocin, refer to the definitions section of the document on pages 9 to 10.
- For indications and contraindications for the administration of oxytocin, refer to Appendix A and Appendix B of this document.

- For role and responsibilities of perinatal care providers (physicians, midwives, RNs) in the administration and ongoing infusion of oxytocin, refer to Appendix C of this document.
- For information on the potential risks and side effects of oxytocin, refer to Appendix D of this document.
- Refer to Appendix E in this document for an example of the Oxytocin Safety Checklist

1. Oxytocin induction and/or augmentation of labour requires 1:1 bedside nursing care by a specialized Perinatal RN
2. **Low dose** oxytocin is defined as a starting dose of 1 to 2 milliunits/minute with an incremental rate increase of 1 to 2 milliunits/minute every 30 minutes.
3. **High dose** oxytocin is defined as a starting dose of 2 to 4 milliunits/minute with an incremental rate increase of 2 to 4 milliunits/minute every 30 minutes.
4. Fluid balance must be documented (on Cerner PowerChart → Interactive View and I&O → Intake and Output). Patients receiving oxytocin are at an increased risk of water toxicity owing to the antidiuretic effect of the medication, especially when receiving the high dose regimen.
5. Do **NOT** start oxytocin until a minimum of 30 minutes has passed after dinoprostone (Cervidil®) has been removed.
6. Oxytocin is considered a Hazardous Drug (Group 2) and requires additional personal protective equipment (PPE). The drug should be handled and disposed of according to the Hazardous Drugs Control Matrix – Group 2

Equipment and Supplies

1. IV Fluids (Normal saline, 500 mL for Oxytocin) 2. 1000 mL Normal Saline (NS) for primary line 3. Oxytocin 10 Units/mL vials x 3 4. Primary IV tubing and Alaris latex free tubing 5. Patient IV and Medication Labels 6. IV infusion Pump 7. IV "Y" connector 8. Personal Protective Equipment (PPE): 2 pairs of chemo-approved gloves, 1 chemo-approved gown, and eye/face protection (as per the Hazardous Drugs Control Matrix)	9. #18 Intravenous (IV) catheter 10. Electronic fetal monitor with appropriate attachments 11. Dynamap 12. Stabilette 13. Neonatal resuscitation equipment 14. Delivery Cart

Procedure

Assessment	RATIONALE
1. Review prescribers orders for the initiation and titration of oxytocin infusion for induction/augmentation of labour	Cannot initiate oxytocin without completed prescriber's order
2. Prior to induction/augmentation assess and document baseline data: • Birthing Person's vital signs • Abdominal palpation (Leopold's Maneuvers) to confirm cephalic presentation • If unable to confirm cephalic presentation with abdominal palpation, Primary Care Provider (PCP) to confirm fetal presentation by ultrasound examination • Vaginal exam for cervical assessment and Bishop score (Note: vaginal examination of the cervix may be purposefully avoided in cases of prelabour rupture of membranes (PROM), as it has been associated with an increased risk of intrauterine infection.) • EFM monitoring is classified as normal (minimum 20 minutes of a normal tracing) prior to starting oxytocin	Establish Baseline Data
3. Complete Oxytocin Safety Checklist (CST PowerChart → AdHoc → OB Documentation→ Oxytocin Safety Checklist)	Confirms that all appropriate assessments have been completed and documented
4. Establish IV, # 18 gauge IV access device, with primary infusion line of normal saline 1000 mL, set infusion rate as per orders.	Maintain IV access throughout labour, delivery and in the early post-partum period as necessary
5. Don appropriate PPE, according to PHC Hazardous Drugs Control Matrix, and add 30 units of oxytocin to 500 mL bag of normal saline. Label bag with a medication label and include the date, time, dosage, and signature. Doff PPE and dispose of in appropriate waste bins. Perform hand hygiene.	Results in a concentration of 60 milliunits/mL or 0.06 unit/mL of oxytocin Donning appropriate PPE according to PHC Hazardous Drugs Matrix decreases the risk of exposure to Hazardous Drugs.
6. Prime Alaris latex free tubing with oxytocin solution and connect to the primary IV line using a "Y" connector as close to the primary venipuncture site as possible. Program pump for oxytocin infusion.	Provides most precise dosage of oxytocin

7. Begin oxytocin infusion as per prescriber's orders. Titrate the infusion, increasing the dosage (no more than once every 30 minutes according to FHS) until regular uterine activity is established and according to the PCP orders (OB Induction or Augmentation of Labour with Oxytocin PowerPlan) • Signed physician documentation is required to continue increments above 30 milliunits/min.	Regular uterine activity is defined as no more than 5 contractions per 10 minute period. Contractions are strong by palpation, no greater than 90 seconds duration, with a minimum of 30 seconds of soft resting tone between the end of one contraction and the beginning of the next.

8. Maintain continuous EFM. Monitor and document the following according to FHS standards:
• Uterine activity:
  ○ Frequency
  ○ Intensity
  ○ Duration
  ○ Resting tone
• FHR Data:
  ○ Baseline rate
  ○ Variability
  ○ Presence of accelerations
  ○ Decelerations
• Classification of EFM tracing as:
  ○ Normal
  ○ Atypical
  ○ Abnormal
• Birthing person's response to contractions
• Progress of labour
❖ Continuous EFM may be removed for 30 minutes if EFM is normal, birthing person's vital signs and condition are stable and oxytocin has not been increased in the past 30 minutes.
• Complete intermittent auscultation (IA) as per B-00-07-10048 – Fetal Health Surveillance (Intrapartum) during this period. Resume EFM after 30 minutes of IA.
• When the EFM tracing can be classified as normal, the birthing person may ambulate again for 30 minutes with surveillance by IA
	Communication for health care team
	
	Notify physician of absence of cervical changes, slow progress and/or any signs of complications
	
	If the patient has an intrauterine pressure catheter (IUPC), calculate Montevideo units as per B-00-13-10026 - Intrauterine Pressure Catheters (IUPC). The goal when using an IUPC with oxytocin is to achieve 180 to 210 Montevideo units (MVU) in a 10 minute period to achieve a normal rate of descent and cervical change.

9. Assess for signs of **uterine rupture** • Fetal heart rate changes – e.g., complicated variable decelerations or late decelerations • Abrupt prolonged deceleration or bradycardia • Loss of intrauterine pressure or cessation of contractions • Insufficient resting tone (more than 20 mmhg with IUPC) • Uterine tachysystole • Vaginal bleeding • Abdominal rigidity and pain • Hypotension • Tachycardia • Referred shoulder or neck pain • Possible change in abdominal contour • Regression of the presenting part • Shock	The most reliable first sign of uterine rupture is an atypical or abnormal fetal heart rate tracing. It may not be related to contractions. (*Note: There is a slightly higher risk of uterine rupture with vaginal birth after caesarean (VBAC). Low dose oxytocin administration is recommended. Careful assessment of progress of labour is required. Uterine rupture may occur with or without any of these signs)*
10. Assess for signs and symptoms of water intoxication. (See Appendix D)	
11. Continue oxytocin infusion at the minimum dosage required to maintain regular uterine activity.	To provide adequate contractions for fetal descent and to fully dilate the cervix, yet maintain normal FHS and prevent hypertonic uterus and tachysystole
12. Prepare to decrease the oxytocin rate: • Following Spontaneous Rupture of Membranes (SROM) • Following Artificial Rupture of Membranes (AROM) • When the patient reaches full cervical dilation • When tachysystole is evident • In the presence of abnormal or atypical fetal health surveillance • In the presence of patient distress as indicated by ↑ BP, ↑ HR, expression of severe pain with insufficient relief between contractions	To prevent hypoxia to the fetus and uterine trauma to the birthing person. To restore fetal oxygenation

Interventions:

	Tachysystole with Normal Fetal Health Surveillance	Atypical Fetal Health Surveillance	Abnormal Fetal Health Surveillance

1.	• Decrease the oxytocin infusion rate by 50%
	• Palpate uterus to assess resting tone and tachysystole
	• Give an IV bolus of normal saline 250 mL from main line over 10 minutes (unless birthing person's conditions dictate otherwise [e.g. hypertensive disorder, cardiac conditions]). Seek further order from Primary Care Provider (PCP).
	• Assess birthing person's vital signs (BP, HR, RR, O_2 Sat)
	• If uterine activity has not returned to normal after 10 more minutes, discontinue oxytocin until tachysystole resolves.
	  ○ Notify provider when oxytocin has been discontinued
	• Maintain EFM and observe for signs of deteriorating fetal condition
	  ○ Consider use of an IUPC
	• Prepare for administration of nitroglycerin
	• Provide ongoing education to the patient and their support person(s)
		• Call for assistance, notify primary care provider (e.g. GP, midwife, OB) **STAT**
		• Decrease the oxytocin rate by 50% **or** stop the infusion as ordered
		• Reposition birthing person (e.g. right or left lateral, all fours)
		• Palpate uterus to assess resting tone and tachysystole
		• If indicated (e.g. tachycardia with fever) give an IV bolus of normal saline 250 mL from mainline over 10 minutes (unless birthing person's conditions dictate otherwise e.g. hypertensive disorder, cardiac conditions etc.). Seek further order from PCP.
		• Assess birthing person's vital signs (BP, HR, RR, O_2 Sat)
		• Check progress of labour with a vaginal exam if appropriate:
		  ○ Assess for scalp stimulation (do not stimulate during a deceleration)
		  ○ Relieve pressure of presenting part off cord if present
		• Maintain continuous EFM
		  ○ Consider use of an internal fetal electrode (FECG)
		• Prepare for administration of nitroglycerin
		• Prepare for fetal blood sampling if appropriate
		• Prepare for emergency delivery if condition remains unresolved (Caesarean section or forceps/vacuum if fully dilated)
		  ○ Notify OR, Pediatrician, Anesthesiologist, family physician/ midwife as necessary
		• Provide ongoing education to the patient and their support person(s)
			• Call for assistance; notify obstetrician and obstetrical resident, primary care provider (e.g. GP, midwife) **STAT**
			• Discontinue the oxytocin infusion
			• Reposition birthing person (e.g. right or left lateral, all fours)
			• Palpate uterus to assess resting tone and tachysystole
			• Assess birthing person's vital signs (BP, HR, RR, O_2 Sat)
			  ○ Consider administration of O_2 by face mask at 8 to 10 L/min for hypoxia or hypovolemia
			• Check progress of labour (vaginal examination if appropriate):
			  ○ Assess for scalp stimulation (do not stimulate during a deceleration)
			  ○ Relieve pressure of presenting part off cord if present
			• Maintain continuous EFM
			  ○ Consider use of an internal fetal electrode (FECG)
			• Prepare for administration of nitroglycerin
			• Prepare for fetal blood sampling if appropriate
			• Prepare for emergency delivery if condition remains unresolved (Caesarean section or forceps/vacuum if fully dilated)
			  ○ Notify OR, Pediatrician, Anesthesiologist, family physician/ midwife as necessary
			• Provide ongoing education to the patient and their support person(s)

2.	Restart oxytocin administration and titration 30 minutes after FHS has normalized and tachysystole has resolved. • Prior to restarting oxytocin, communicate with the prescriber and review the oxytocin safety checklist. Document discussion and findings prior to restarting the oxytocin infusion • If oxytocin has been discontinued for less than 30 minutes, resume oxytocin at no more than 50% of the previous titrated rate • If oxytocin has been discontinued for more than 30 minutes, resume oxytocin at initial ordered dose
3.	Discontinue oxytocin infusion once a decision is made to proceed with a caesarean section
4.	If oxytocin is discontinued and IOL is deferred, maintain electronic fetal monitoring for at least 30 minutes after discontinuing oxytocin or until contractions subside and FHS is normal. Document reason for deferral of IOL.

Documentation

- Birthing person assessment and fetal health surveillance assessments documented a minimum of every 15 to 30 minutes according to current FHS guidelines (unless otherwise indicated).
- Fetal health surveillance classification, uterine activity, and oxytocin dose continues to be documented a minimum of every 30 minutes throughout second stage.
    - Ensure oxytocin dose is documented in milliunits/minute.

1. Provider's Orders for titration of oxytocin infusion for induction/augmentation of labour
2. BC Perinatal Triage and Assessment Record (Cerner PowerChart → AdHoc → OB documentation → OB Triage and Assessment)
3. BC Labour Partogram (**Initiate** Partogram by following Cerner PowerChart → Interactive View and I&O → Labour and Delivery → Stages of Labour Calculations → Partogram Start Date,Time; **or View** a previously initiated Partogram in Cerner PowerChart → Women's Health Overview → Partogram
    - Document the initiation and titration of oxytocin in PowerChart → Interactive View and I&O → Labour and Delivery → Continuous Medication Infusions
4. Fetal monitoring tracing (EFM/NST)
5. BC Labour and Birth Summary Record
6. Identify the indication for induction/augmentation (Cerner PowerChart → Interactive View and I&O →Labour and Delivery → Delivery Information Nursing → Labour Onset Methods → Induced/Augmented → Reason for Induction)
7. Interdisciplinary Progress Notes (Cerner PowerChart → Documentation)
8. Fluid Intake and Output (Cerner PowerChart → Interactive View and I&O → Intake and Output)
9. Oxytocin Safety Checklist (Cerner PowerChart → AdHoc → OB Documentation → Oxytocin Safety Checklist)

Patient and Family Education

Review with patient and support person:

- The roles of the interdisciplinary team members
- The role of equipment and supplies
- Ensure that patient and family understand the reason for induction/augmentation of labour.
- Ensure patient and family are aware of possible effects and side effects of oxytocin and know to inform the RN of side effects if they occur.
- Explain procedure and rationale.
- Provide ongoing information about progress of labour and fetal well-being.
- Provide explanations for emergency interventions as needed.

Related Documents

1. B-00-16-10010 - Booking IOL
2. B-00-07-10048 - Fetal Health Surveillance - Intrapartum
3. B-00-13-10026 - Intrauterine Pressure Catheter (IUPC)
4. Contraction Stress Test (Pending)
5. PDTM Oxytocin Monograph

References

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3. Fraser Health Authority. (2015). Clinical Protocol: Oxytocin Administration for Labour Induction and Augmentation. Maternal infant Child Youth Program: Author
4. *Fundamentals of Fetal Health Surveillance Online Manual*. UBC CPD. (n.d.). Retrieved April 4, 2022, from https://ubccpd.ca/learn/learning-activities/course?eventtemplate=22
5. Lee, L. Sprague, A. Yee, J, & Ehman, W. (2009). Fundamentals of Fetal Health Surveillance: A self-learning module. The Canadian Perinatal Programs Coalition: Author. British Columbia
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7. SOGC. (2005). Guidelines for Vaginal Birth after Previous Caesarean Birth. SOGC Clinical Practice Guideline: Author
8. SOGC (2007). Fetal health surveillance: Antepartum and Intrapartum Consensus Guideline: Author.
9. SOGC. (2013). No. 296 – Induction of Labour. SOGC Clinical Practice Guideline: Author.
10. SOGC. (2017). No. 214 – Guidelines for the Management of Pregnancy at 41+0 to 42+0 Weeks. SOGC Clinical Practice Guideline: Author

Definitions

1. **Augmentation of labour:** Is the artificial stimulation of the uterus to increase frequency, strength, and duration of contractions when labour is already established. Improved efficiency of contractions is required when progress of labour is slow (less than 1 cm increase in dilation per 1-2 hours in active labour). This may occur following administration of epidural analgesia in labour.
2. **Contraction Stress Test:** The purpose of the Contraction Stress Test (CST) is to determine how the fetus responds to reduced oxygen (O_2) delivery during contractions. It indirectly assesses placental function and fetal oxygen reserves.
3. **Induction of Labour:** Induction of Labour (IOL) is the artificial stimulation of uterine contractions to initiate labour before the onset of spontaneous labour. IOL should only be considered when vaginal delivery is felt to be the appropriate route of delivery. Intravenous oxytocin is one method

used for the medical induction of labour.

4. **Oxytocin:** Is a synthetic hormone used for the induction and/or augmentation of labour. It stimulates the smooth muscle of the uterus to produce rhythmic contractions. The antidiuretic effects of oxytocin may lead to water intoxication when there is prolonged use of high dose oxytocin. This is exacerbated by the use of electrolyte-free intravenous solutions; therefore, fluid intake and output must be monitored. The individual response to oxytocin depends on several factors, including cervical ripeness, parity, gestational age, fetal growth restriction, placental reserve, and birthing person's overall well-being. The RN must understand the effects of the medication and be able to identify actual and potential complications in a timely manner.
5. **Regular uterine activity**: No more than 5 contractions per 10 minute period. Contractions are strong by palpation, no greater than 90 seconds in duration with a minimum of 30 seconds of soft resting tone between the end of one contraction and the beginning of the next contraction**.**
6. **Tachysystole**: Greater than 5 contractions per 10 minute period averaged over 30 minutes or contraction duration of greater than 90 seconds or coupling and tripling of contractions (two or three contractions in a row with little or no rest in between), resulting in overall contraction duration of greater than 90 seconds. This is further subdivided into two categories: with and without fetal heart rate changes.

Appendices:

Appendix A: Indications for Induction of Labour

Appendix B: Contraindications for Induction of Labour

Appendix C: Roles and Responsibilities

Appendix D: Potential Risks/Side Effects of Oxytocin

Appendix E: Maternity Oxytocin Safety Checklist

Persons/Groups Consulted:

Maternity Safety and Quality Committee (MSQC)

Clinical Nurse Leader PBNC

Developed By:

PBNC Nurse Educator

Initial Effective Date:	DEC 2011
Posted Date:	10-MAY-2022
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Last Revised:	10-MAY-2022
Approved By	PHC
	Professional Practice Standards Committee Maternity Safety Quality Council
Owners:	PHC - St Paul's Hospital Pregnancy, Birthing and Newborn Centre

Appendix A: Indications for Induction of Labour

Any situation where prolonging the pregnancy carries more risk for the birthing person and/or the fetus than delivery, but emergency Caesarean delivery is not indicated, for example:

- Post-dates pregnancy greater than 41 completed weeks (confirmed by 1st trimester ultrasound), or at 40 weeks gestation when birthing person's age is greater than or equal to 40 years
- Post term pregnancy greater than 42 weeks
- Premature rupture of membranes greater than or equal to 36 weeks gestation regardless of Group B Strep (GBS) status (positive, negative, or unknown)
- Chorioamnionitis
- Oligohydramnios
- Intrauterine growth restriction (IUGR)
- Birthing person disease not responding to treatment (e.g., chronic hypertension, cardiac disease, alloimmune disease etc.)
- Diabetes Mellitus (e.g. Type I, Type II, Gestational requiring insulin)
- Hypertensive disorders of pregnancy (e.g. preeclampsia, gestational hypertension)
- Cholestasis
- Placentation issues (e.g. absent/intermittent end diastolic flow)
- Significant but stable antepartum hemorrhage
- Uncomplicated twin pregnancy
- Suspected fetal compromise
- Intrauterine fetal demise
- Intrauterine fetal demise in a prior pregnancy

Appendix B: Contraindications for Induction of Labour

Absolute:

- Previous classical, inverted T, or unknown uterine incision
- Previous hysterotomy or myomectomy of the uterus involving entry into the uterine cavity or extensive myometrial dissection
- Previous uterine rupture
- Abnormal fetal lie or presentation (e.g. transverse lie, footling breech)
- Placenta previa, vasa previa, or cord presentation
- Active genital herpes
- Pelvic structural deformities
- Invasive cervical carcinoma
- Evidence of fetal distress (e.g. ominous fetal health surveillance)
- Any other contra-indications to labour

Relative (consultation recommended)

- Grand multiparity
- Malpresentations
- Significant over-distension of the uterus (e.g., severe polyhydramnios or multiple pregnancy with a very distended uterus)
- Invasive carcinoma of the cervix
- Unexplained antepartum hemorrhage
- History of difficult labour and/or traumatic delivery
- Abnormal NST or other evidence of fetal compromise
- Suspected fetal macrosomia (estimated fetal weight greater than 4000g) in a non-diabetic patient

Unacceptable:

- Physician or patient convenience
    - This does not include logistical problems (e.g. history of rapid labour, distance to hospital, social issues)

Birthing person's attempting a vaginal birth after caesarean section (VBAC):

- Cautious use of oxytocin is the recommended method of induction or augmentation. Do **NOT** use dinoprostone (Cervidil®)
- Do not attempt a VBAC if a Caesarean was performed less than 18 months ago

Appendix C: Roles and Responsibilities

Primary Care Providers:

Registered Midwives (RM): require a consultation to an obstetrician for any use of oxytocin for the induction or augmentation of labour. The obstetrician or senior obstetrics resident must place the order on Cerner.

- Consult the obstetrician on call for oxytocin induction/augmentation
- Complete a documentation note in Cerner Powerchart, indicating the indication for induction/augmentation and level of care required.
- Must be available immediately by telephone/pager and be able to get to the unit within 20 minutes
- Complete a documentation note in Cerner Powerchart, indicating the indication for induction/augmentation
- Complete Prescribers Orders → OB PowerPlans → OB Induction or Augmentation of Labour with Oxytocin (Module)
- Remain in the hospital and be available for administration of emergency care – as per Oxytocin PDTM

Family Practice Physicians (with maternity privileges): may manage induction of labour (IOL) and augmentation of labour according to the following criteria:

1) Confirmed rupture of membranes at term – greater than or equal to 37 weeks
2) Post-dates – Greater than or equal to 41 weeks; or at 40 weeks gestation in the presence of maternal age greater than or equal to 40 years.
3) Normal FHS
4) Absence of significant maternal/fetal medical illness
    - Consult the obstetrician on call if the induction/augmentation guidelines for family practice physicians are not met.

- An obstetrical consult is required if the patient is not progressing and/or requires an increase of oxytocin above 20 milliunits/minute.
- Must be present and complete an assessment and physical examination prior to initiation of oxytocin
- Must be available immediately by telephone/pager and be able to get to the unit within 20 minutes
- Complete a documentation note in Cerner Powerchart, indicating the indication for induction/augmentation and level of care required.
- Complete Prescribers Orders → OB PowerPlans → OB Induction or Augmentation of Labour with Oxytocin (Module)

Obstetrician or Senior Obstetrical Resident (in consultation with the Obstetrician)

- Complete a documentation note in Cerner Powerchart, indicating the indication for

induction/augmentation

- Complete Prescribers Orders → OB PowerPlans → OB Induction or Augmentation of Labour with Oxytocin (Module)
- Remain in the hospital and be available for administration of emergency care – as per Oxytocin PDTM

Perinatal RN:

- Initiates and maintains oxytocin infusion according to regimen ordered
- Initial and ongoing assessments of the birthing person and the fetal response to induction/augmentation
- Initiates appropriate interventions/communication as required for intrauterine resuscitation
- Provide 1:1 nursing care while the patient is receiving oxytocin whether or not they are in active labour
- Prepare the neonatal resuscitation equipment & assists with neonatal resuscitation (as needed)
- Ongoing documentation in appropriate fields on Cerner PowerChart.

Pediatrician:

- Available for neonatal resuscitation at delivery as needed.

Appendix D: Potential Risks/Side Effects of Oxytocin

Birthing Person:

- Tachysystole – greater than 5 contractions per 10 minute period averaged over 30 minutes **or** contraction duration of greater than 90 seconds **or** coupling and tripling of contractions (two or three contractions in a row with no or little rest in between), resulting in overall contraction duration of greater than 90 seconds This is further subdivided into two categories, one with and one without fetal heart rate changes.
- Uncoordinated, unproductive uterine activity – may be seen as increased frequency with decreased intensity of contractions. This type of activity may be related to cessation of uterine blood flow during contractions causing hypoxia and accumulation of metabolites resulting in ineffective muscular activity.
- Increased risk of Caesarean birth
- Increased risk of uterine rupture.
- Antidiuretic effect – a weak antidiuretic property means that large doses of oxytocin can cause kidneys to increase water reabsorption and decrease urine output. This is seen more frequently when infusion rates are greater than 20 milliunits/minute, and exacerbated by the infusion of large amounts of electrolyte-free dextrose solutions. Possible symptoms:
    - Decreased urine output
    - Hypotension
    - Tachycardia
    - Headache
    - Nausea and vomiting
    - Mental confusion and "feeling sick"
    - Pulmonary edema may occur when oxytocin is given with large IV fluid loads.
    - Prolonged use may result in increased blood pressure
    - Cardiovascular – Rapid IV push injections of oxytocin may result in a generalized relaxing effect on vascular smooth muscle leading to hypotension and tachycardia.

Fetal/Neonatal:

- Fetal stress – Normal labour contractions impede uterine blood flow. The normal healthy fetus has adequate O_2 reserves to withstand normal labour, but in the presence of tachysystole, uterine blood flow may be further impeded resulting in depletion of reserves leading to atypical and/or abnormal fetal heart surveillance and fetal compromise
- Neonatal hyperbilirubinemia – seen more frequently after oxytocin induction if excessive uterine stimulation results in fetal hypoxia.

Appendix E: Oxytocin Safety Checklist (OB146)

(Note the Oxytocin Safety Checklist is completed on CST Cerner (PowerChart → Adhoc → OB documentation → Oxytocin Safety Checklist). Paper documentation (noted below) is required with system-wide down times/upgrades - Code Grey*)*

OXYTOCIN SAFETY CHECKLIST

Complete prior to initiating oxytocin for labour induction or augmentation

DO NOT initiate oxytocin unless this safety checklist is completed and signed.

	Yes	N/A
Physician order for oxytocin on the chart indicating low or high dose		
Current history and physical reviewed by nurse and on the chart for most responsible provider		
Antenatal Record part 1 & part 2 reviewed by nurse and on the chart for most responsible provider		
Indication for induction or augmentation is documented		
Verbal Informed consent obtained and documented		
Consultation with an obstetrician completed and documented for women planning a vaginal birth after cesarean (VBAC)		
Cervical Assessment completed within 2 hours prior to augmentation		
Cervical Assessment completed 24 hours prior to induction		
Status of cervix documented (Bishop score greater than 6 unless recognized exception e.g. PROM)		
Cephalic presentation (physician/midwife required to assess if nurse unable to determine)		
Electronic fetal monitoring/non-stress test is classified, reviewed and discussed with most responsible provider (minimum 20 minute tracing prior to starting oxytocin)		

Oxytocin Safety Checklist Completed:

Date: _____ Time: _____

RN Signature: _____ Printed name: _____

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