Policy & Procedure

Policy Title:	Induction and Augmentation of Labour: Oxytocin Infusion Protocol		
Applies To:	Labour and Delivery Nurses, Midwives, & Physicians		
Location Applicability:	All zones **outside Central Zone**		
Related Policy:	NSHA MC-LD-001 Induction of Labour Umbrella Policy		
Approved:	**Effective:**	**Next Review:**	
February 3, 2023	February 14, 2023	February 3, 2027	
Sponsor:	Director–Episodic & Integrated Acute Care Network		
Approval Authority:	VP Integrated Health Services – Primary Health Care & Population Health		
Number: MC-LD-003		**Manual:** Maternal Child Health	

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POLICY STATEMENTS

1. An Authorized Prescriber's order on an approved clinical order set (NS_OSOIAL) is required for oxytocin induction or augmentation.
2. The patient must be an inpatient in a labour-birth-post-partum room.
3. Family physicians and midwives must complete an obstetrical consultation with the patient prior to initiating oxytocin.

> **Note:** Formal consultation is **not** required in the following situations although notification of the on-call OBS is required:
>
> - Term nulliparous patient with spontaneously ruptured membranes (SRM), vertex presentation, no labour.
> - Term multiparous patient with spontaneously ruptured membranes (SRM), vertex presentation, no labour.
> - Nulliparous patient with delayed or arrested progress in labour.

4. The physician must be available to be at the hospital at short notice (within 20 minutes).
5. Oxytocin infusions must be administered via an infusion control device (e.g., Infusion pump) within a drug library.
6. Oxytocin is considered a high alert medication and care providers must conduct an independent double check prior to its administration. (Refer to MM-SR-010 High Alert Medications and the IDC policy.

Competency Requirements

7. The registered nurse (RN)/registered midwife must:
   - 7.1. Have the required competency for induction of labour to administer and care of a pregnant person who is receiving oxytocin. (Refer to NSHA MC-LD-001 Induction of Labour Umbrella Policy for educational requirements).
   - 7.2. Be skilled in fetal health surveillance and in the interpretation of the results and classification of fetal heart rate (FHR) tracings which includes the early identification of tachysystole.
   - 7.3. Participate in FHS education every two years and maintain documentation of their continuing education.

PROTOCOL

INDICATIONS AND CONTRAINDICATIONS:

For full list of indications and contraindications refer to NSHA MC-LD-001 Induction and Augmentation of Labour Umbrella Policy.

1. To ensure adequate staffing and prioritization, the procedure should be pre-booked, if possible.
2. A regular soft diet is permitted, unless otherwise ordered.
3. The patient may ambulate if the appropriate assessment of fetal and maternal monitoring has been performed and is normal as per Protocol item #6
4. Cervical assessment, including Bishop Score (see Appendix B), should be completed unless contraindicated.
5. Do **not** commence Oxytocin sooner than:
   - 5.1. Six hours after dinoprostone vaginal gel (Prostin® and Prepedil®) administration,
   - 5.2. 30 minutes post removal of dinoprostone vaginal insert (Cervidil®), or
   - 5.3. Four hours after administering oral misoprostol.
6. Oxytocin for induction or augmentation may be infused using one of two protocols (Protocol A or B).
   - 6.1. **Protocol A** is initiated at two or four milliunits/minute (as per Authorized Prescriber's order) and is increased in increments of 2 milliunits/minute every 30 minutes until adequate contractions are established.
   - 6.2. **Protocol B** is initiated at four milliunits/minute and is increased in increments of 4 milliunits/minute until adequate contractions are reached.

   > **NOTE**: Both protocols use a standard concentration of oxytocin 30 units in 500 mL in compatible IV fluid.
7. Increase the rate of oxytocin infusion every 30 minutes as per the Authorized Prescriber's order until satisfactory contractions are established (up to five contractions in 10 minutes averaged over a 30-minute period with a duration of less than 90 seconds and an intensity of mild, moderate, or strong by palpation or 25-75 mmHg by IUPC, except in second stage).
   - 7.1. Mild, moderate, or strong by palpation or 25-90 mmHg by IUPC. Resting tone should be soft, or less than 25 mmHg for 30 seconds or longer.
   - 7.2. The physiological dose of oxytocin for an average patient is approximately eight (8) to 12 milliunits/minute.
8. When labour is established, continue oxytocin at the minimum level required to achieve an adequate contraction pattern and progressive cervical dilatation.

8.1. The oxytocin rate of infusion may be maintained or may be decreased by 1-2 milliunits/minute every 30 minutes as long as strong regular contraction pattern persists.

8.2. In situations where labour is not established, despite sufficient time at the maximum rate/dose of oxytocin, increments of oxytocin above 20 milliunits per minute may be considered.

8.2.1. Doses above 20 milliunits/minute are permissible following reassessment of labour progress and fetal wellbeing, and only if ordered by or in consultation with an attending obstetrician.

8.2.2. If the attending care provider is a family physician or midwife, they must consult the on-call obstetrician to determine appropriateness of increasing doses above 20 milliunits/minute.

NOTE: For both above scenarios the rate of the oxytocin infusion is increased every 30 minutes as per the Authorized Prescriber's order (see clinical order set) until satisfactory contractions are established as described below in protocol number 5.1.

ROLES/RESPONSIBILITIES:

The midwife/RN is responsible to:

- Ensure bloodwork is obtained as ordered.
- Monitor for the presence of uterine activity and FHR within one hour prior to the initiation of oxytocin to confirm a normal FHR tracing.
- Perform maternal vital signs (BP, temperature, pulse, and respirations).
- Initiate mainline IV therapy as per prescriber's orders.
- Prepare or acquire oxytocin 30 units in 500 mL Lactated Ringer's.
- Load the oxytocin solution IV line into an infusion pump and y-site to the lowest port of the mainline.
- Use the NSH oxytocin safety checklist (see Appendix C) to guide the safe administration of Oxytocin.
- Document in the patient's health record the following:
    - Timing and dosages of initiation of infusion and each dosage titration.
    - FHR and contraction pattern in response to oxytocin increases.
    - Intake and output.
    - Confirm that patient's health record contains all relevant documentation.

Maternal and FHS assessment by midwife/RN:

1. Monitor and document FHR and contractions continuously as per SOGC Fetal Health Surveillance Clinical Practice Guidelines.

> **NOTE**: Periods of up to 30 minutes without electronic fetal monitoring (EFM) are acceptable for ambulation, personal care, and hydrotherapy as long as the oxytocin infusion rate is stable, and the fetal heart tracing is normal.
>
> The goal for assessing the labour is to ensure regular, moderate to strong contractions that result in cervical change leading to full dilatation of the cervix.

2. Assess for abnormal FHR pattern:
   - 2.1. If abnormal FHR pattern, initiate continuous EFM (if not already done) and steps for intrauterine resuscitation (see Appendix D) to improve uterine blood flow, umbilical circulation, and maternal oxygen saturation.
   - 2.2. When responding to abnormal FHR complete the following:
     - 2.2.1. Perform steps of intrauterine resuscitation.
     - 2.2.2. Notify the physician.
     - 2.2.3. Consider applying a fetal scalp electrode (if membranes are already ruptured) to confirm the FHR and differentiate it from maternal heart rate.
     - 2.2.4. Attempt to rule out placental abruption.
     - 2.2.5. Perform a pelvic exam to assess cervical dilatation and rule out prolapsed cord.
     - 2.2.6. Suggest performing fetal scalp lactate testing in sites where this point of care testing is availability.
     - 2.2.7. Prepare for possible immediate caesarean section if abnormal FHR tracing persists despite the above interventions.
   - 2.3. Consider/suggest the use of an IUPC in these scenarios:
     - 2.3.1. Uterine activity seems adequate on palpation but is not resulting in labour progress.
     - 2.3.2. In cases where it is difficult to evaluate uterine activity with palpation and external monitoring.
3. Review of maternal intake & output if ordered.
4. Monitor and document maternal BP, pulse, contraction frequency, duration and intensity and uterine resting tone every 15–30 minutes.
5. Monitor and palpate contractions for the following:
   - 5.1. Regular uterine activity. This includes up to five moderate to strong contractions per 10-minute period, lasting less than 90 seconds with soft uterine resting tone, and at least 30 seconds between the end of one and the beginning of the next contraction.

5.2. **Tachysystole** includes any of the following:

- □ Greater than five contractions in 10 minutes averaged over a 30-minute period **or**
- □ Duration of more than 90 secs

  or
- □ On palpation uterus does not return to soft resting tone between contractions (greater than 25 by IUPC)

  or
- □ Resting tone of less than 30 seconds.

5.2.1. If **tachysystole** occurs, initiate the following steps for intrauterine resuscitation:

5.2.1.1. Continuous EFM (if not already done).

5.2.1.2. Discontinue or decrease oxytocin to achieve normal contraction pattern.

5.2.1.3. Notify physician.

5.2.2. When **tachysystole occurs without FHR changes** and the oxytocin infusion has been discontinued, resume oxytocin as follows:

5.2.2.1. If oxytocin has been discontinued for less than 20-30 minutes and the FHR rate is normal and contraction frequency, intensity and duration is normal, continue by:

- ➢ Resume oxytocin at no more than half the rate that caused the tachysystole and
- ➢ Gradually increase the rate as appropriate based on maternal and fetal status.

5.2.2.2. If the oxytocin is discontinued for more than 30-40 minutes, (most of the exogenous oxytocin is metabolized and plasma levels are like that of a patient who has not received oxytocin) continue by:

- ➢ Resume oxytocin at or near the initial starting dose ordered.
- ➢ Discontinue oxytocin but maintain continuous FHS when the decision is made to perform a Caesarean section.

The physician/midwife is responsible to:

1. Confirm that the patient understands the procedure, indications, and risks.
2. Document the following on the patient's health record:
   - The discussion with the patient and consent regarding the indication for and method of induction of labour, including the associated risks.

- Cervical assessment (Bishop Score), fetal presentation, and fetal wellbeing.
- Blood work as ordered.
- Confirmation of the blood group, Rh status, and GBS.

3. Be knowledgeable about the administration of oxytocin as per established protocols.
4. Insert IUPC and perform fetal scalp lactate testing as clinically appropriate.

REFERENCES

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RELATED DOCUMENTS

POLICIES

NSHA MC-LD-001 Induction of Labour Umbrella Policy

NSHA MM-MA-005 Medication Independent Double Checks

Appendices

Appendix A: Definitions

Appendix B: Bishop Score

Appendix C: Oxytocin Safety Checklist

Appendix D: Oxytocin Safety Checklist Actions

Pamphlets

Induction of Labour – NSHA # WP85-1768

Education:

Fundamentals of Fetal Health Surveillance Online Manual

Appendix A: Definitions

Augmentation of Labour	Augmentation of labour is the process of stimulating the uterus to increase the frequency, duration, and intensity of contractions after the onset of spontaneous labour and/or if labour dystocia is encountered.
Authorized Prescriber	A health care professional permitted by legislation, their regulatory college, NSHA, and practice setting (where applicable) to prescribe medications and treatments. The authority to order medications is not linked to any particular health profession and may also differ within that health care profession depending upon specific competencies and skills. Examples of an authorized prescriber may include, but are not limited to, a physician, medical resident, nurse practitioner, pharmacist with Additional Prescribing Authorization, midwives, or a registered dietician approved to order parenteral nutrition.
Group B streptococci (GBS)	Gram positive, aerobic diplococcic that can cause early-onset meningitis and the majority of late-onset infections in infants. Neonatal GBS disease can be classified as early- or late onset.
Induction of Labour	The initiation of contractions in a pregnant woman who is not in labour with the goal to help her achieve a vaginal birth.
Labour Dystocia	Delayed or arrested progress in labour, irrespective of cause. Dystocia is identified when any of the following are seen: -dilatation of less than 0.5cm/hour over 4 hours or -no cervical change over 2 hours in the active first stage of labour or -greater than 1 hour of active pushing and no descent of the presenting part.
Oxytocin	A peptide produced naturally in the hypothalamus and binds to uterine receptors to produce uterine contractions, but it has no direct effect on the cervix. It is a commonly used drug in obstetrics and may be used to initiate labour with or without ruptured membranes. It can also be used to augment labour when required to increase the frequency, duration, and intensity of uterine activity and/or if labour dystocia is encountered. The physiology of an oxytocin stimulated labour is like that of spontaneous labour, although individual patients vary in sensitivity and response. The physiological dose of oxytocin required to produce regular uterine contractions is 8-12 milliunits/min, although the ideal dosing regimen is not known and should be assessed in consideration of the woman's endogenous oxytocin production

Tachysystole	Tachysystole refers any excessive uterine activity. This would include greater than five contractions in 10 minutes averaged over a 30-minute period or a duration of more than 90 secs or on palpation uterus does not return to soft resting tone between contractions (less than 25 by IUPC) or resting tone for less than 30 seconds.

Appendix B: Bishop Score

Examination	Bishop's Score			
	0	1	2	3
Cervical Dilation (cm)	0	1-2	3-4	5-6
Cervical Effacement (%)	30	40-50	60-70	80
Station of Presenting Part	-3	-2	-1/0	+1/+2
Consistency of Cervix	Firm	Medium	Soft	….
Position of Cervix	Post	Middle	Anterior	---

Appendix C: Oxytocin Safety Checklist

Prior to increasing the dose of the oxytocin as per the ordered protocol, perform the Oxytocin Safety Checklist (OSC):
For the last 30 minutes: · Is there moderate variability for at least 10 minutes? · Is there less than one late deceleration? · Are there two or less complicated variable decelerations? · Are there less than 3 uncomplicated variables decelerations in a row? · Are there 5 contractions or less in 10 minutes averaged over the 30 minutes? · Are there two or less contractions of greater than 90 seconds duration? · Is there resting tone present of at least 30 seconds between contractions? (If an IUPC is in place, the baseline resting tone must be less than 25 mmHG and the sum of the "peak minus baseline uterine pressure per contraction" for all contractions in the 10-minute interval does not exceed 250 mmHG)
If unable to answer 'yes' to all 7 of the criteria above, do not increase the oxytocin dose. Reassess the FHR and uterine activity over the next 30 minute period to determine if an oxytocin dose increase or other alternative action is required as per the reverse.

Adapted from: Safe_Administration_Oxytocin_Implementation_Toolkit, 2022

Appendix D: Oxytocin Safety Checklist Actions

Uterine Activity	Normal Fetal Heart Rate Tracing	Atypical Fetal Heart Tracing	Abnormal Fetal Heart Rate Tracing
Normal Uterine Activity: Up to 5 contractions in a 10 minute period, lasting less than 90 seconds in duration with resting tone (less than 25 mmHg with IUPC) of 30 seconds palpated between the end of one contraction to the beginning of the next.	Answered 'yes' to all questions on the Oxytocin Safety Checklist (OSC). Continue to increase or maintain the current rate of oxytocin.	Start IUR Decrease oxytocin by ½ Notify physician or midwife If FHR becomes normal, continue oxytocin If still atypical, after 15 minutes, D/C oxytocin and notify physician or midwife.	Start IUR D/C oxytocin Notify physician or midwife Expedite delivery
Tachysystole: (any excessive uterine activity) -more than 5 contractions in a 10-minute period, averaged over 30 minutes -contractions lasting greater than 90 seconds in duration -less than 30 seconds resting tone between contractions	Start IUR Wait 15 minutes If normal_uterine activity, continue oxytocin as long as the answers to the OSC are 'yes'. If tachysystole continues after another 15 minutes, either reduce or D/C oxytocin based on clinical picture and notify the physician or midwife.	Start IUR Decrease oxytocin by ½ If FHR becomes normal, and tachysystole resolves, continue oxytocin If FHR still atypical in 15 minutes, OR tachysystole remains present, D/C oxytocin and notify the physician or midwife.	Start IUR D/C oxytocin Notify physician or midwife. Ensure actions to expedite delivery are underway.

IU = Intrauterine resuscitation: change maternal position, reassess maternal vital signs, consider amnioinfusion, perform a vaginal examination, increase IV fluids if indicated, and consider administering O2 by facemask if maternal perfusion compromised and consider tocolysis.

Adapted from: Safe_Administration_Oxytocin_Implementation_Toolkit, 2022

VERSION HISTORY

Version:	Effective:	Approved by:	What's changed:
Original	2017-09-28		Statement #3 under Protocols adjusted for clarification. Approved 2019-03-05.
Revised	2023-02-14	VP Integrated Health Services – Primary Health Care & Population Health	Complete change of practice.