Provincial Council for Maternal and Child Health
Safe Administration of Oxytocin Sample Order Set

How to use this Order Set

All Ontario hospitals should implement this order set to support standardization of oxytocin administration, reduce patient and provider risk, and apply the best practice recommendations identified in the Provincial Council for Maternal and Child Health (PCMCH)'s *Safe Administration of Oxytocin* report. Standardized order sets, whether in electronic or paper format, have the potential to reduce variation, diminish unintentional transcription errors, enhance workflow, provide safety reminders, and reduce unnecessary calls to prescribers for order clarification.

Please note:

(1) The oxytocin order set should be separate from the admission order set, which may include care items such as starting primary intravenous access, initial blood work, etc. This admission order set should complement existing hospital operation structures and this order set.
(2) The format of the order set should follow the hospital's official standard format that has been approved by an appropriate interdisciplinary committee (e.g., pharmacy and therapeutics committee, safety committee, forms committee) within the hospital.
(3) To complement the order set and best practice recommendations, all hospitals must follow the recommendations in the online Fundamentals of Fetal Health Surveillance: Self Learning Manual by the Canadian Perinatal Programs Coalition (2018) available online here.
(4) The administering care provider should sign the order set and have it co-signed by a regulated health care provider providing the independent double check.

Note: This order set is designed with the low risk patient in mind, as defined in the *Safe Administration in Oxytocin Report*. While this is created using best practice recommendations, and can be applied to many patients beyond this definition, there are certain high risk or complicated situations where the ordering clinician may need to use their best judgement to alter the order set to meet the unique needs of the patient.

Hospital Name/Logo	*Patient Identification*

Labor and Delivery Order Set
Oxytocin Induction and Augmentation

Allergies ☐ No Known Allergies ☐ _____

Date prescribed: Month / Day / Year	**Time:** 00:00

Admission

☑ Admit to Labour and Delivery Unit under attending MRP. Refer to hospital Admission Order set

Prior to Commencing Oxytocin:

☑ Patient consent for the administration of oxytocin for the induction or augmentation of labour is documented.

☑ Patient is examined vaginally and has a Bishop score documented.

☑ Patient has no contraindications to vaginal birth, such as placenta previa or vasa previa, prior classic uterine incision or other uterine surgeries that contra-indicate attempts at vaginal delivery, and/or prolapsed cord.

☑ Continuous electronic fetal monitoring (EFM) for at least 20 minutes (to confirm a normal fetal heart rate (FHR) pattern and uterine activity (UA)). If EFM tracing is atypical or abnormal, notify the MRP immediately. (SOGC, 2007)

☑ 6 hours has passed since the last dose of prostaglandins gel (Prostin, Prepidil) (SOGC, 2013)

☑ 4 hours has passed since the last dose of misoprostol (SOGC, 2013)

☑ 30mins has passed since the removal of a dinpoprostone insert (Cervidil) (SOGC, 2013)

Monitoring During Oxytocin Infusion:

☑ Continuous electronic fetal monitoring (CPPC, 2018; RCOG, 2001)

☐ Electronic fetal monitoring may be interrupted for periods of up to 30 minutes in the first stage of labour (if tracing is normal, maternal-fetal condition is stable, and the infusion rate of oxytocin has not been increased in the last 30 minutes) to allow for ambulation, personal care, and hydrotherapy. (SOGC, 2007; CPPC, 2018)

☑ Assess and document the FHR and UA assessment findings:

- ☑ q15 minutes during first stage of labour and before the onset of pushing in the second stage (CPPC, 2018; SOGC, 2007).
- ☑ q5 minutes during active second stage, once the woman has begun pushing (CPPC, 2018; SOGC, 2007).
- ☑ Maternal heart rate, respirations, and blood pressure q30min and prn. **Notify MRP if vitals outside normal limits.**
- ☑ Maternal temperature q4h if membranes intact, q2h once membranes have ruptured and prn. (Perry et al., 2017). **Notify MRP if temperature is greater than 38°C.**
- ☑ Monitor intake and output and observe for signs of water intoxication/hyponatremia (e.g. lethargy, ataxia, confusion, seizures).
- ☐ Vaginal examination q2-4h or PRN for labour progress in the first stage (Perinatal Services BC, 2011).
- ☐ Vaginal examination q1h in the active second stage (Perinatal Services BC, 2011).

☑ Notify MRP immediately when any signs of the following occur:
- Atypical or abnormal FHR
- Tachysystole (defined over 30 minutes)
- Excessive vaginal bleeding

Medication

☑ Primary IV initiated with maintenance infusion of ☐ 0.9% Sodium Chloride OR ☐ Ringers Lactate at ☐ 100 mL/hr **OR** ☐ _____ on IV smart pump

☑ Oxytocin infusion 10 units in 500 mL of ☐ 0.9% Sodium Chloride **OR** ☐ Ringers Lactate on IV smart pump
Note: Final concentration of solution is **Oxytocin 20 milliunits/ml**.

☑ Piggyback oxytocin infusion onto primary IV line connected at port closest to the patient.

☑ Independent double check performed for initial pump set up as per table 2.

☑ Low Dose Protocol
- Start oxytocin infusion at ☐ **1 milliunits/minute (3 mL/hour) OR** ☐ **2 milliunits/minute (6 mL/hour)**
- Increase the rate by ☐ **1 milliunits/minute (3 mL/hour) OR** ☐ **2 milliunits/minute (6 mL/hour) q 30 minutes**, as needed, until a normal uterine contraction pattern is achieved. Refer to table 1 for dosage chart and table 3 for definition of normal uterine contraction pattern.
- Do not exceed a rate of **12 milliunits/minute** without reassessment and/or verbal order from MRP.
- Do not exceed a rate of **20 milliunits/minute** without a **written order from the MRP**. MRP reassessment required at 20 milliunits/minute, and if required a maximum infusion rate of 30 milliunits/minute may be ordered.

Reduce Oxytocin

☑ In the event of atypical FHS (as defined in table 4), reduce the oxytocin infusion rate by half or stop oxytocin infusion.

☑ In the event of tachystole (as defined in table 3) **with a normal or atypical FHS**, **decrease oxytocin to half the rate or stop oxytocin infusion.**

☑ Apply intrauterine resuscitation interventions as defined in *Intrauterine Resuscitation* table 5 below.

☑ Document clinical actions and notify MRP when oxytocin decreased.

Stop Oxytocin

☑ In the event of an abnormal FHS (as defined in table 4), **stop oxytocin immediately.**

☑ In the event of tachystole (as defined in table 3) **with an** abnormal FHS, **stop oxytocin immediately.**

☑ Apply intrauterine resuscitation interventions as defined in *Intrauterine Resuscitation* (table 5).

☑ Document clinical actions and notify MRP when oxytocin discontinued.

Restart Orders

☑ Restart oxytocin at half the rate IF: it has been discontinued for less than 30mins, and the FHR tracing and contraction pattern are normal.

☑ Restart oxytocin at initial starting dose IF: it has been discontinued for 30mins or longer, the FHR tracing and contraction pattern are normal, and a complete fetal and maternal assessment has been discussed with the MRP prior to restarting.

Additional Orders

_____

_____

Ordering MRP

Print Name: _____ Signature: _____MRP

Table 1: Oxytocin Dosage Rate

Oxytocin 10 International Units (IU) in 500 mL of IV fluid (20 milliunits/mL)	
Dose	**Rate / Hour**
1 milliunits/minute	3 mL/h
2 milliunits/minute	6 mL/h
3 milliunits/minute	9 mL/h
4 milliunits/minute	12 mL/h
5 milliunits/minute	15 mL/h
6 milliunits/minute	18 mL/h
7 milliunits/minute	21 mL/h
8 milliunits/minute	24 mL/h
9 milliunits/minute	27 mL/h
10 milliunits/minute	30 mL/h
11 milliunits/minute	33 mL/h
12 milliunits/minute	36 mL/h
13 milliunits/minute	39 mL/h
14 milliunits/minute	42 mL/h
15 milliunits/minute	45 mL/h
16 milliunits/minute	48 mL/h
17 milliunits/minute	51 mL/h
18 milliunits/minute	54 mL/h
19 milliunits/minute	57 mL/h
20 milliunits/minute	60 mL/h

Table 2: Independent Double Check for Initial Pump Set Up

Independent Double Check for Initial Pump Set Up

To be performed and signed by two different registered health care professionals (e.g. RN, MW, MD).

CHECK 1		CHECK 2
	Correct Patient	
	Correct Drug	
	Correct Drug Concentration (on bag)	
	Correct Programmed Concentration on Smart Pump	
	Correct rate (in milliunits/minute)	
	Correct IV Line and Port Connection	

Check 1: _____ _____
Printed Name Signature

Check 2: _____ _____
Printed Name Signature

Table 3: Definitions: Normal Uterine Activity and Tachysystole
Normal Uterine Contraction **Frequency**: 3 to 5 contractions in a 10-minute period, averaged over a 30-minute time period. **Duration:** lasting no greater than 90 seconds. **Configuration:** Regular and symmetrical. **Intensity:** patient perception, **or** moderate to strong by palpation by clinician, **or** 25-80 mmHg via IUPC. **Resting tone:** Uterus soft by clinician palpation, or 7-25 mmHg via IUPC, between contractions for a minimum of 30 seconds.
Tachysystole 6 or more uterine contractions in 10 minute period averaged over a 30 minute, and/**or** contractions that last 90 seconds or longer (>90 sec), and/**or** when the uterine resting tone does not soften (by palpation) for at least 30 seconds between contractions and/**or** resting tone remains firm by palpation or the intrauterine pressure remains at or greater than 20 – 25 mmHg. Clinician assessment will be warranted as some women will have uterine activity as per this definition but will not be moderate to strong upon palpation and/or actively laboring in early administration of oxytocin. Fetal heart rate characteristics and associated with uterine activity should be classified and documented.
Source: SOGC, 2019; CPPC, 2018

Table 4: Classification of Intrapartum EFM Tracings

	Normal Tracing	Atypical Tracing	Abnormal Tracing
Uterine activity	Normal contraction pattern	Tachysystole may be present with normal, atypical or abnormal tracings; monitor closely for concerning FHR characteristics	
Baseline	☐ 110–160 bpm	☐ 100-110 bpm ☐ >160 bpm for 30-80 min ☐ Rising baseline ☐ Arrhythmia (Irregular rhythm)	☐ < 100 bpm ☐ > 160 bpm for > 80 min ☐ Erratic baseline
Variability	☐ 6–25 bpm ☐ ≤ 5 bpm for <40 min.	☐ ≤ 5 bpm for 40–80 min.	☐ ≤ 5 bpm for ≻ 80 min. ☐ ≥ 25 bpm for ≻ 10 min. ☐ Sinusoidal
Accelerations	☐ Spontaneous accelerations present ☐ Accelerations present with fetal scalp stimulation	☐ Absence of acceleration with fetal scalp stimulation	☐ Usually absent (accelerations, if present, do not change classification of tracing)
Decelerations	☐ None ☐ Non-repetitive uncomplicated variable decelerations ☐ Early decelerations	☐ Repetitive uncomplicated variables ☐ Non-repetitive complicated variables ☐ Intermittent late decelerations ☐ Single prolonged deceleration > 2 min < 3 min	☐ Repetitive complicated variables ☐ Recurrent late decelerations ☐ Single prolonged deceleration ≥ 3min but < 10 min
Interpret clinically (In light of total situation)	☐ No evidence of fetal compromise	☐ Physiologic response	☐ Possible fetal compromise
Terminology	**Recurrent**: decelerations occur with ≥50% of uterine contractions in any 20-minute window **Intermittent**: decelerations occur with <50% of uterine contractions in any 20-minute segment. **Repetitive:** ≥ 3 in a row **Non-repetitive**: one or maximally 2 in a row		
RESPONSE TO EFM CLASSIFICATION	☐ Provide supportive care. ☐ EFM may be interrupted for periods up to 30 min. if maternal-fetal condition stable and oxytocin infusion rate stable.	**VIGILANCE** ☐ Further vigilant assessment required, especially when combined features present. ☐ Determine significance/cause and correct reversible cause ☐ Initiate intrauterine resuscitation ☐ Determine duration of effect and reserve tolerance of fetus ☐ Consider further fetal evaluation (scalp stimulation and/or FBS, ultrasound) **Consider transfer/delivery if tracing persists or deteriorates**	**ACTION REQUIRED** ☐ Determine significance/cause and correct reversible cause ☐ Initiate intrauterine resuscitation ☐ Determine duration of effect and reserve tolerance of fetus ☐ FSBS (Fetal Scalp Blood Sampling) if available ☐ Notify paediatric and anaesthesia services **Expedite delivery (operative vaginal or CS) unless delivery is imminent or there is evidence of normal FSBS.**

*Usually absent, but if accelerations are present, this does not change the classification of tracing.
Note: Tachysystole may be present with normal, atypical or abnormal tracings; monitor closely for concerning FHR characteristics.

Source: SOGC, 2019

Table 5: Intrauterine resuscitation

The goal of intrauterine resuscitation is to improve uterine blood flow, umbilical circulation, fetal/maternal oxygenation and decrease uterine activity. Actions may include:

- **Stop or decrease oxytocin**
- Change maternal position to left or right lateral
- Check maternal vital signs, including differentiation of maternal heart rate from fetal heart rate
- Provide supportive care to reduce maternal anxiety (to lessen catecholamine impact)
- Ask woman to modify or pause pushing efforts in the active second stage of labour
- Perform vaginal examination to rule out cord prolapse and assess progress
- Consider tocolysis in the presence of tachysystole with atypical or abnormal tracing (e.g. with IV nitroglycerin)
- Consider amnioinfusion in the presence of complicated variable decelerations
- Improve maternal hydration, with an intravenous fluid bolus, only if indicated, i.e. maternal hypovolemia and/or hypotension; be aware of maternal fluid balance
- **Consider** oxygen by mask **only when** maternal hypoxia and/or hypovolemia is suspected/confirmed. Oxygen is reserved for maternal resuscitation in the presence of maternal hypoxia or hypovolemia **NOT** for fetal resuscitation.

Source: SOGC, 2019