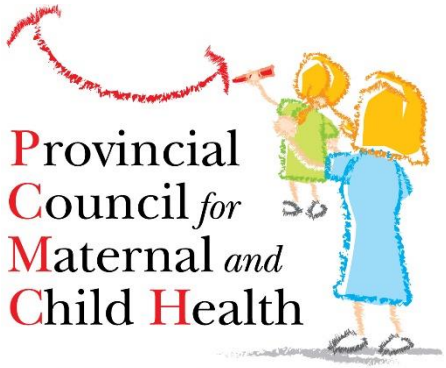
Implementation
Toolkit

Safe Administration of Oxytocin

January 2022



Background

The *Safe Administration of Oxytocin* guideline report, developed by the Provincial Council for Maternal and Child Health (PCMCH) in 2019, outlines best practice recommendations for the safe management of pregnant patients whose labour is induced and/or augmented with the medication, oxytocin. The objective of the report is to reduce the risk of misuse and/or mismanagement of oxytocin by addressing risk factors that have contributed to common errors in its administration. To promote a culture of safety when using this high-alert medication, 11 best practice recommendations were identified and vetted by clinical experts. This toolkit is intended to support hospitals in identifying which best practice recommendations to prioritize and implement. It aims to support implementation by providing tools that can be applied in practice, bridging identified gaps and ultimately enhancing safety when administering oxytocin.

PCMCH has defined maternal levels of care for birthing hospitals in Ontario. The levels of care summarize hospitals' capacity to provide a standard suite of maternal health services. Induction of labour is a service available at all hospitals that are designated level 1b or higher. Hospitals that administer oxytocin are expected to have the requisite services, personnel and equipment to safely use oxytocin for induction and augmentation of labour. Level 1a hospitals may still provide induction services or augmentation of labour to meet the needs of their communities (including rural and remote settings) and the 11 recommendations outlined support best practice and safe oxytocin administration in these settings as well. The recommendations focus on application to low-risk pregnancies,[1] yet may apply to patients outside the defined low-risk pregnancy category. Individualized assessments and clinical judgement are required to ensure that care is tailored to meet the unique needs of every patient.

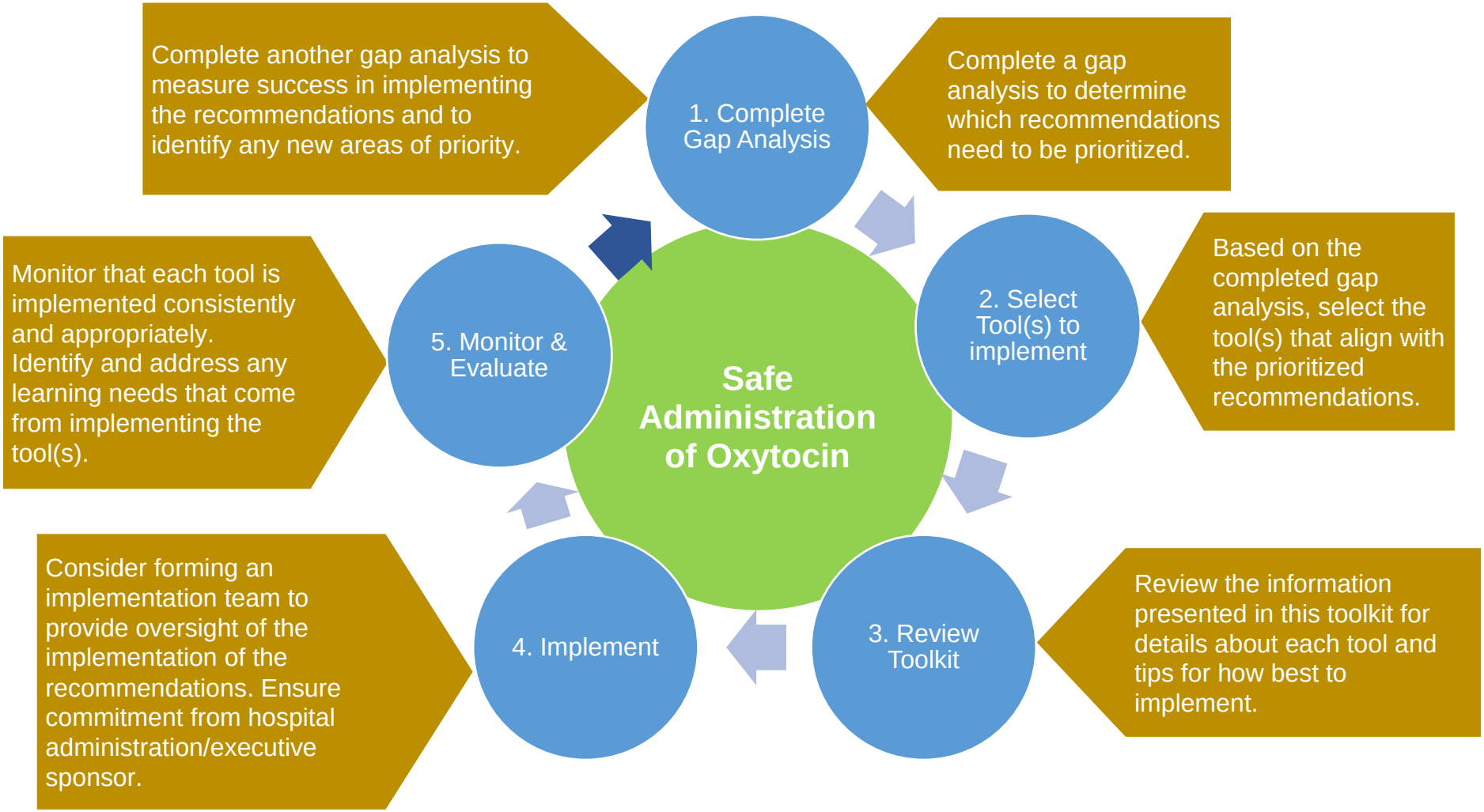
Safe Administration of Oxytocin: Best Practice Recommendations

1. Shared Decision Making
2. Inter-Professional Team Communication
3. Indications for Induction or Augmentation
4. Professional Skills Training
5. Hospital Preparedness for Adverse Events
6. Medication Handling
7. Standard Use of Oxytocin
8. Independent Double-Check and Smart Pump Use
9. Low-Dose Regimen
10. Stopping & Restarting Oxytocin Administration
11. Patient Support in Labour

[1] For the purposes of this report, low-risk pregnancies are defined as pregnancies with a singleton, cephalic, term pregnancy (≥37 weeks gestation) and excludes conditions such as any diabetes, hypertensive disorders in pregnancy, placenta previa, fetal anomalies, pre-existing hypertension and IUGR.

How to Use this Toolkit

Successful implementation, adoption and sustained use requires that the recommendations in the *Safe Administration of Oxytocin* guideline report be tailored at the local level. This can be achieved by applying the resources included within this toolkit.



Overview of Tools

This toolkit provides resources to support the implementation of the Safe Administration of Oxytocin recommendations. These recommendations were designed to mitigate maternal, fetal or neonatal risks associated with oxytocin administration. The tools include:

These tools can be individually downloaded from the PCMCH website.

Clinical practice note:

Individualized assessment and clinical judgement are required to ensure that care meets the unique needs of all patients. It is critically important to assess the full clinical picture when applying these tools.

Gap Analysis

Gap Analysis Template

Use the template to determine the hospital's current state in relation to the *Safe Administration of Oxytocin* recommendations and identify potential areas for improvement. Document the current state using the gap analysis template by identifying to what extent each best practice recommendation is met, partially met or not met.

<u>Safe Administration of Oxytocin Recommendation(s)</u>
Applies to ALL recommendations

<u>Tips for Implementation</u>

- The hospital's administration team can complete the tool.
- Use the tool to compare current institutional and individual practices by:
  - Reviewing current gaps and identifying why they exist.
  - Determining the desired outcomes and what gaps need to be filled to reach them.
  - Determining if and how a collaborative approach, such as a regional network, can help bridge an identified gap.
  - Prioritizing what gaps should be addressed with the greatest urgency and highest impact.

First page of the template showing what is assessed as being met, partially met or unmet (section to document action not shown):

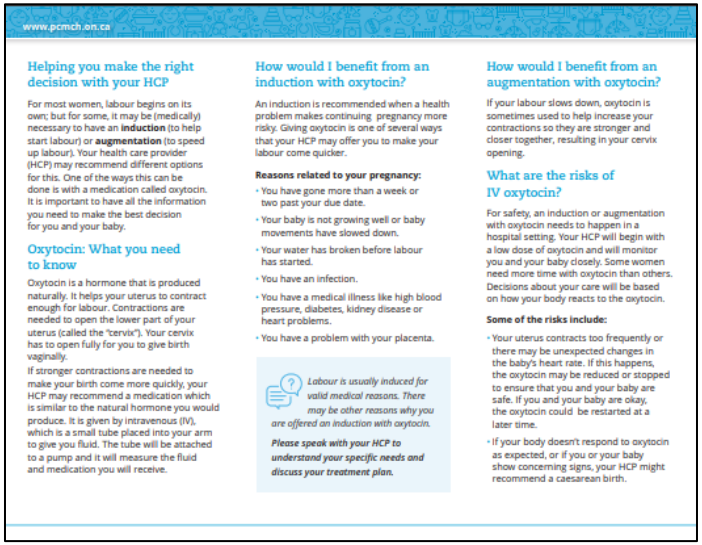
RECOMMENDATIONS	CURRENT STATE		
	Met	Partially Met	Unmet
Recommendation #1: Shared Decision Making			
Patients are provided with information to participate in shared decision-making on oxytocin induction, augmentation, and			
A patient-oriented fact sheet or pamphlet to summarize oxytocin use is provided to every patient being considered to start on oxytocin.			
Informed consent for starting oxytocin is obtained and documented by MRP upon admission and again prior to medication set-up			
Informed consent discussion includes, but is not limited to: • maternal and fetal indications • benefits and risks of oxytocin administration • benefits and risks of alternatives			
Recommendation #2: Inter-Professional Team Communication			
Members of the health care team must maintain communication that is clear, direct, and respectful.			
The hospital/unit has an escalation process, or *chain of command* protocol, in place.			
The hospital/unit has a standardized transfer of accountability/handover process.			
Ongoing inter-professional team training and skills drills are provided and supported by clinical leadership.			
Recommendation #3: Indications for Induction or Augmentation			
The prescriber will order oxytocin for induction and/or augmentation for the appropriate indication(s).			
Clinical decision-making tools about disagreeing with the plan of care as well as medication administration are used consistently, as required.			
Safety tools, such as checklists to ensure oxytocin is being used safely and for appropriate indications, are used consistently.			
The cervix is assessed using the Bishop score to ensure that the pregnant patient has a favourable cervix ready for oxytocin administration.			
Recommendation #4: Professional Skills Training			
Oxytocin is prescribed and administered by a trained health care professional educated on its use, including the effects			
Initial and ongoing (every two years) inter-professional FHS training for all health care providers who are involved in intrapartum fetal monitoring is provided and supported.			

Patient Resources

Oxytocin: To Help Start or Speed up Your Labour Patient Education Pamphlet

This pamphlet supports pregnant patients and future parents in their decision-making and understanding around informed consent after an induction or augmentation with oxytocin has been recommended.

The pamphlet was created in collaboration with Best Start by Health Nexus and has been tested and validated by patients.



<u>Safe Administration of Oxytocin Recommendation(s)</u>
#1: Shared Decision-Making

<u>Tips for Implementation</u>

- Provide hard copy versions of the pamphlet in waiting rooms and assessment rooms during antenatal visits.
- Use the pamphlet to guide conversations about oxytocin when obtaining informed consent.

Pamphlet is available in English and French.

Patient Resources

Oxytocin to Start or Advance Labour: 5 Questions to Ask Patient Handout

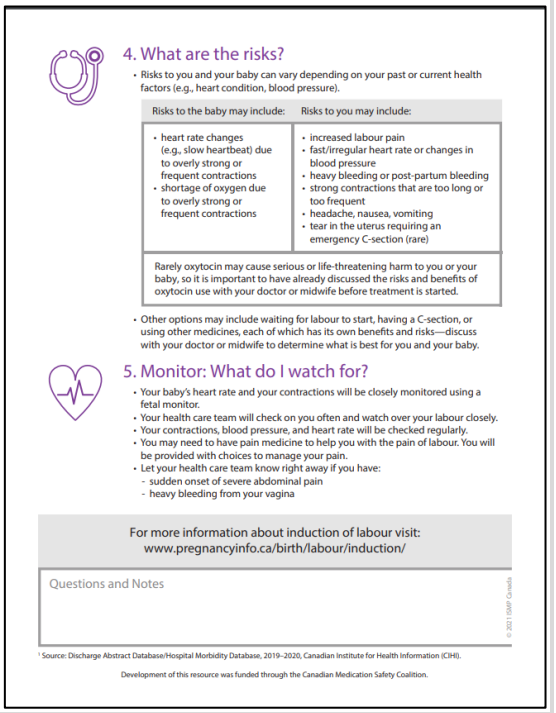
This handout provides information about the benefits and risks of intravenous oxytocin and can be used to support conversations between healthcare providers and their patients. It was developed by the Institute for Safe Medication Practices (ISMP) Canada in collaboration with patients, care providers and multiple provincial and national organizations.

Oxytocin to Start or Advance Labour:
5 Questions to Ask

1. What is oxytocin?
- Oxytocin is a hormone that is produced naturally in pregnancy to make the uterus contract. When the uterus contracts, it is called labour.
- Oxytocin is also a medicine that is given during labour if the natural supply is not enough.

2. Why is it used and what are the benefits?
- To help start labour (induction), or
- To help advance labour (augmentation) when the time between contractions is too long, the length of contractions is too short, or contractions are too weak.
- Oxytocin helps the uterus contract. The contractions open the cervix and help your baby move down into the birth canal.
- Oxytocin should only be used when the benefits of delivery outweigh the risks of continuing the pregnancy.
- Benefits may include being able to have a vaginal birth and not requiring a Caesarean delivery (C-section).
- In Canada, 8 out of 10 patients who received oxytocin to start or advance labour gave birth vaginally.[1]

3. Proper Use: How is it given?
- Oxytocin to start or advance labour is given intravenously using a pump to control the amount of medicine you receive.
- The medicine will start at a low dose and then will be increased gradually to get the right contraction pattern for you.
- In some cases, if the contractions are affecting the baby's heart rate or if the contractions are too close together, your health care provider may reduce or stop the oxytocin.



4. What are the risks?
- Risks to you and your baby can vary depending on your past or current health factors (e.g., heart condition, blood pressure).

Risks to the baby may include:	Risks to you may include:
• heart rate changes (e.g., slow heartbeat) due to overly strong or frequent contractions • shortage of oxygen due to overly strong or frequent contractions	• increased labour pain • fast/irregular heart rate or changes in blood pressure • heavy bleeding or post-partum bleeding • strong contractions that are too long or too frequent • headache, nausea, vomiting • tear in the uterus requiring an emergency C-section (rare)

Rarely oxytocin may cause serious or life-threatening harm to you or your baby, so it is important to have already discussed the risks and benefits of oxytocin use with your doctor or midwife before treatment is started.

- Other options may include waiting for labour to start, having a C-section, or using other medicines, each of which has its own benefits and risks—discuss with your doctor or midwife to determine what is best for you and your baby.

5. Monitor: What do I watch for?
- Your baby's heart rate and your contractions will be closely monitored using a fetal monitor.
- Your health care team will check on you often and watch over your labour closely.
- Your contractions, blood pressure, and heart rate will be checked regularly.
- You may need to have pain medicine to help you with the pain of labour. You will be provided with choices to manage your pain.
- Let your health care team know right away if you have:
  - sudden onset of severe abdominal pain
  - heavy bleeding from your vagina

For more information about induction of labour visit:
www.pregnancyinfo.ca/birth/labour/induction/

Questions and Notes

[1] Source: Discharge Abstract Database/Hospital Morbidity Database, 2019–2020, Canadian Institute for Health Information (CIHI).

Development of this resource was funded through the Canadian Medication Safety Coalition.

Safe Administration of Oxytocin Recommendation(s)
#1: Shared Decision Making

Tips for Implementation

- Provide hard copies in waiting rooms and assessment rooms during antenatal visits.
- Use the tool to supplement conversations about oxytocin to support obtaining informed consent.
- Review the ISMP Canada Implementation Guide for more tips on how to talk to patients about the use of oxytocin to start or advance labour.

The Oxytocin to Start or Advance Labour: 5 Questions to Ask handout is available in English and French.

Communication Technique Examples	
Safe Administration of Oxytocin Recommendations(s) #2: Inter-professional Team Communication	
Name of Tool	**Purpose**
SBAR	This tool supports concise and urgent communications. **Situation** - problem, patient, project **Background** - important information **Assessment** - your evaluation **Recommendations** - actions required For more information, please visit: IHI – SBAR Toolkit: https://bit.ly/2iZNwMg
I Pass The Baton	This tool guides communications around proper handoffs and health care transitions. The phrase is an acronym that denotes: **I**ntroduction, **P**atient, **A**ssessment, **S**ituation, **S**afety The **B**ackground, **A**ctions, **T**iming, **O**wnership, **N**ext For more information, please visit: • ACOG – Communication Strategies for Patient Handoffs: https://bit.ly/2C9YgOs • AHRQ – Team STEPPS system: https://bit.ly/2nAx32X
Team STEPPS system	This communication system is a compendium of evidence-based tools and techniques that help manage crucial conversations or "just in time" conversations. Examples of these are: a. Morning briefings b. Team Check-ups and Call-out strategies c. Debriefs on Accountability d. Using CUS language for patient advocacy, "**C**oncerned, **U**ncomfortable, this is a **S**afety issue". It supports better management of conflicts by using a constructive positive approach to emphasize "**what** is right, not **who** is right" with DESC method: **D:** Describe the specific behavior or situation. **E:** Express how the situation makes you feel or concerns you. **S:** Suggest other alternatives. **C:** Consequences stated in terms of team goals, not punishment. For a complete list of tools and strategies, please visit: AHRQ – Team STEPPS Guide: https://bit.ly/2v2A66o

Algorithm: Disagreeing with the Plan of Care

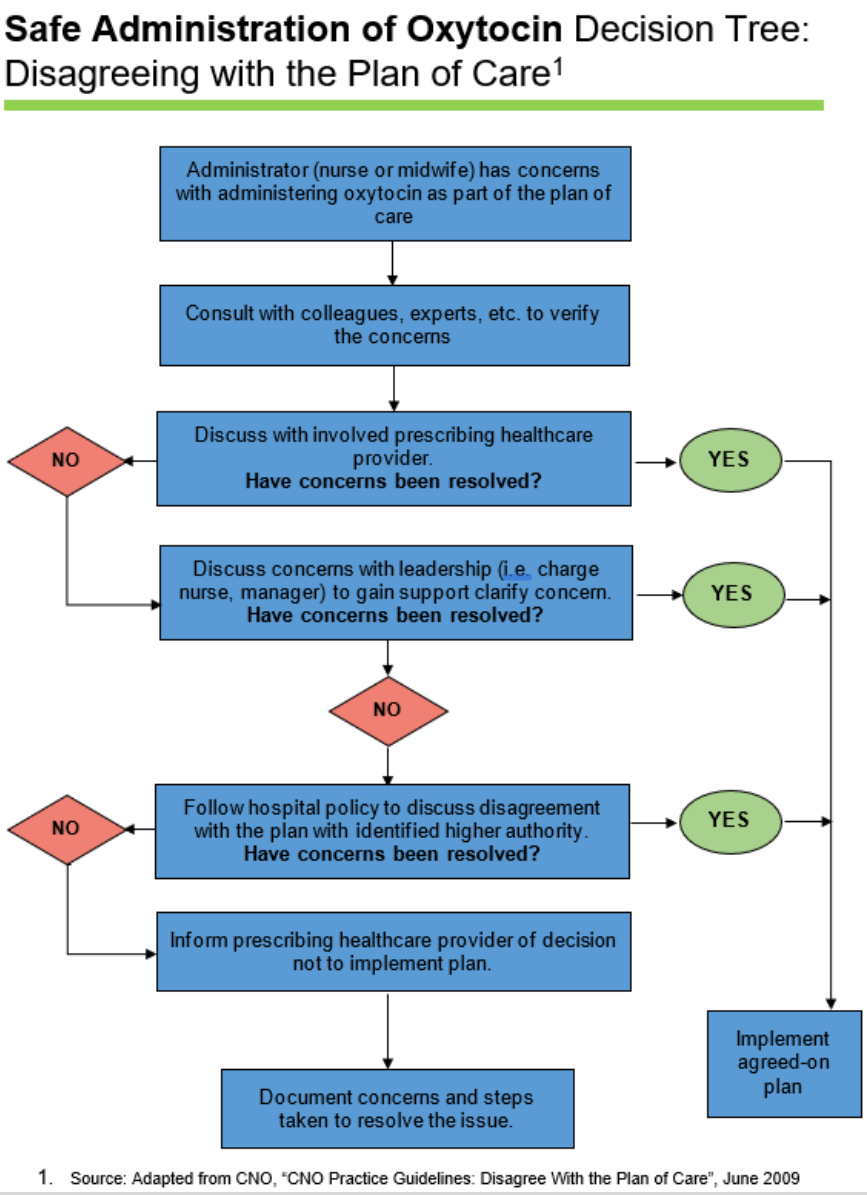
The algorithm will guide situations when there is disagreement with the plan of care. The decision tree provides steps that can be taken to resolve the issue.

<u>Safe Administration of Oxytocin Recommendation(s)</u>

#2: Inter-professional Team Communication
#3: Indications for Induction or Augmentation
#4: Professional Skills Training

<u>Tips for Implementation</u>

- Use to support inter-professional team training and skills drills. Inter-professional Team Training and Skills Drills can potentially empower individuals to communicate more effectively and escalate concerns during oxytocin administration. Use case studies involving oxytocin administration to teach teams about how adverse events occur and strategies to address urgency [1].
- Use as the foundation for development and implementation "chain of command" protocol.
- Use alongside implementing standardized transfer of accountability or handover processes during shift change, breaks or transfers of care [2].



1. Source: Adapted from CNO, "CNO Practice Guidelines: Disagree With the Plan of Care", June 2009

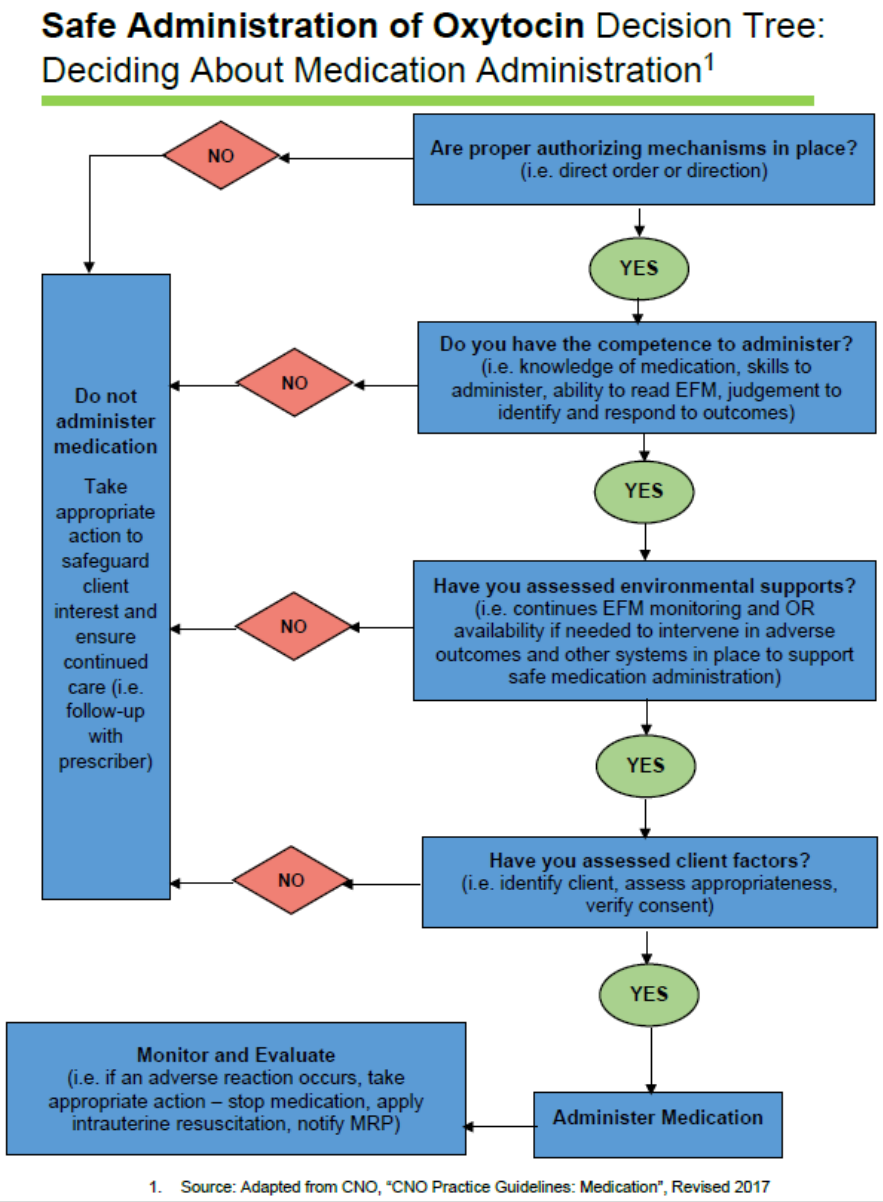
Algorithm: Deciding about Medication Administration

This algorithm guides team decision-making amongst health care providers about medication, specifically with respect to IV oxytocin.

<u>Safe Administration of Oxytocin Recommendation(s)</u>
#2: Inter-professional Team Communication
#3: Indications for Induction or Augmentation
#4: Professional Skills Training

<u>Tips for Implementation</u>

- Use to support inter-professional team training and skills drills.
- Use as the foundation for development and implementation "chain of command" protocol.



1. Source: Adapted from CNO, "CNO Practice Guidelines: Medication", Revised 2017

Pre-Use Oxytocin Safety Checklist

This checklist was adapted from a validated tool by the HCA Perinatal Safety Initiative [6].

The checklist provides an opportunity for healthcare providers to pause and reflect on a patient's eligibility and safety considerations prior to administering oxytocin.

Note: Individual assessment and clinical judgement may determine that continued oxytocin use is best for the birthing individual and baby. The MRP should document their assessment, review of fetal heart rate tracing and orders.

<u>Safe Administration of Oxytocin Recommendation(s)</u>
#2: Inter-Professional Team Communication
#4: Professional Skills Training
#9: Low-Dose Regimen
#10: Stopping and Re-Starting Oxytocin.

<u>Tips for Implementation</u>

- Create an implementation team to support training and ongoing education on the benefits of checklist use
- Identify champions to support ongoing coaching and education.
- Consider auditing checklist use.
- Use the checklist as a prompt for discussion amongst care team members as to why extenuating circumstances may mean a patient varies from the checklist.
- Ensure accurate documentation is completed if the checklist is not embedded in the electronic medical record.

Provincial Council for Maternal and Child Health
building a brighter future

Pre-Use Oxytocin Safety Checklist[1]

If the following checklist cannot be completed, oxytocin should not be initiated.

- ☐ Current history, physical, and perinatal record in the chart[2].
- ☐ Indication for induction or augmentation with oxytocin is documented in the patient's health record.
- ☐ Patient demonstrates understanding of benefits and risks associated with oxytocin administration and verbal consent is received and documented by MRP in patient's chart.
- ☐ Patient has no contraindication for vaginal delivery.
- ☐ Unit acuity has been assessed and physician, and/or other health care team members are aware of the induction/augmentation and are readily available in the event of an emergency.
- ☐ Cervical status is assessed and documented.
- ☐ Fetal presentation is assessed and documented.
- ☐ Appropriate FHS assessment has been performed. The FHR pattern is normal, and has been documented (prior to induction, a normal 20-minute Non-Stress Test (NST); or prior to augmentation, a normal FHR has been observed on EFM).
- ☐ Order signed and in chart.

Notes:

1. Low-Risk Pregnant Patients: This checklist was developed to support the safe management of pregnant patients whose labour is induced or augmented with oxytocin and focuses on low-risk patients with a singleton, cephalic, term pregnancy. It may also be applicable to patients outside of this definition.
2. This may be delayed for non-elective admissions. Hospitals should obtain the patient's Ontario Perinatal Record 1 and 2; however, in the event it is not available, the physician/midwife should perform a thorough assessment of the patient (including collecting past clinical history and bishop scoring) to determine eligibility for oxytocin.

This checklist represents a guideline for care: however, individualized medical care is directed by the primary care provider.

Source: Adapted from the HCA Healthcare Perinatal Safety Initiative, Pre-Oxytocin Checklist, 2009.

In-Use Oxytocin Safety Checklist

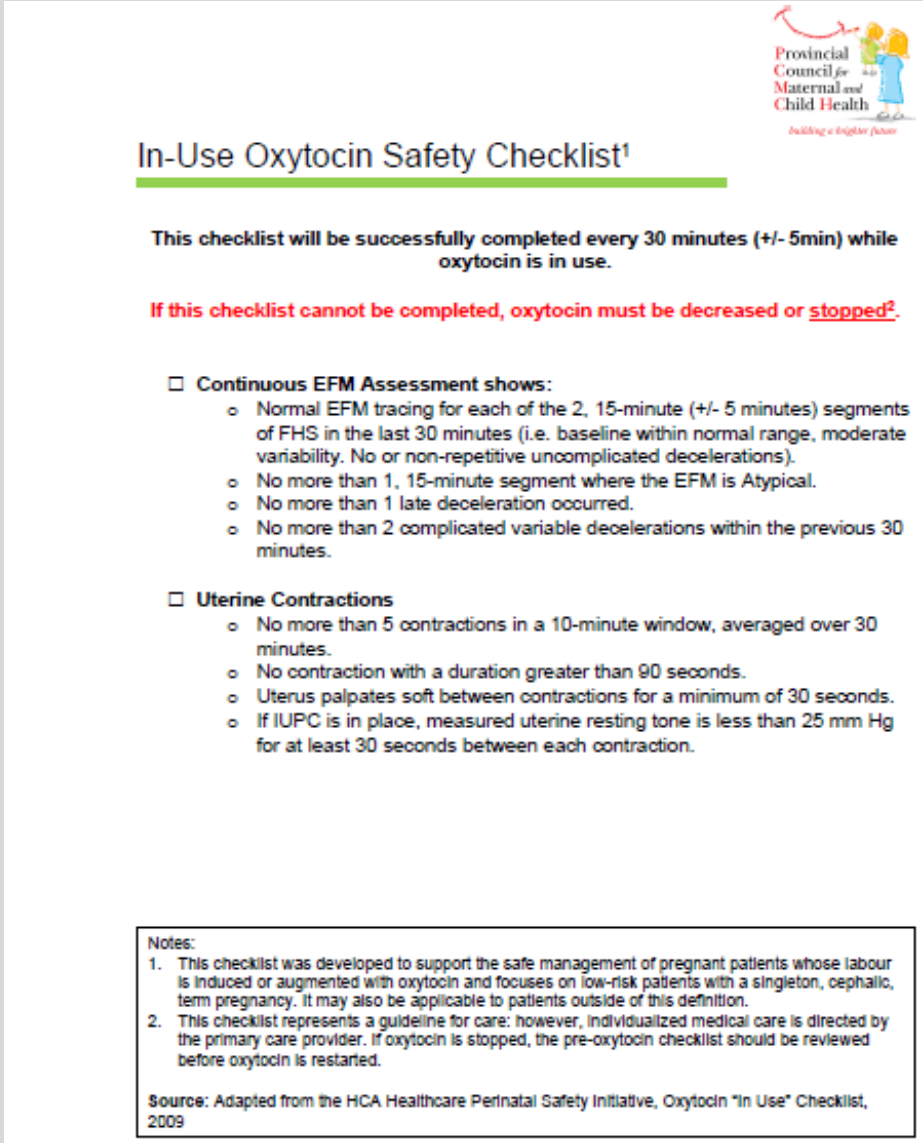
This checklist was adapted from a validated tool by the HCA Perinatal Safety Initiative and aligns with the Society of Obstetricians and Gynaecologists (SOGC) No. 396 Fetal Health Surveillance: Intrapartum Consensus Guideline to serve the Ontario system and compliment the recommendations in the report [6].

The checklist provides an opportunity for healthcare providers to pause and reflect on safety considerations while administering oxytocin. This checklist can help support staff in identifying when to stop and/or restart an oxytocin infusion to maintain patient safety.

Safe Administration of Oxytocin Recommendation(s)
#2: Inter-Professional Team Communication
#4: Professional Skills Training
#9: Low-Dose Regimen
#10: Stopping and Re-Starting Oxytocin.

Tips for Implementation

- See tips above for Pre-Use Oxytocin Safety Checklist
- Place the laminated checklist by the electronic fetal monitor as a visual cue for staff monitoring the tracing.
- Recommend that all perinatal care providers complete fetal health surveillance education/training every two years.



Provincial Council for Maternal and Child Health

In-Use Oxytocin Safety Checklist[1]

This checklist will be successfully completed every 30 minutes (+/- 5min) while oxytocin is in use.

If this checklist cannot be completed, oxytocin must be decreased or stopped[2].

☐ **Continuous EFM Assessment shows:**
- Normal EFM tracing for each of the 2, 15-minute (+/- 5 minutes) segments of FHS in the last 30 minutes (i.e. baseline within normal range, moderate variability. No or non-repetitive uncomplicated decelerations).
- No more than 1, 15-minute segment where the EFM is Atypical.
- No more than 1 late deceleration occurred.
- No more than 2 complicated variable decelerations within the previous 30 minutes.

☐ **Uterine Contractions**
- No more than 5 contractions in a 10-minute window, averaged over 30 minutes.
- No contraction with a duration greater than 90 seconds.
- Uterus palpates soft between contractions for a minimum of 30 seconds.
- If IUPC is in place, measured uterine resting tone is less than 25 mm Hg for at least 30 seconds between each contraction.

Notes:
1. This checklist was developed to support the safe management of pregnant patients whose labour is induced or augmented with oxytocin and focuses on low-risk patients with a singleton, cephalic, term pregnancy. It may also be applicable to patients outside of this definition.
2. This checklist represents a guideline for care: however, individualized medical care is directed by the primary care provider. If oxytocin is stopped, the pre-oxytocin checklist should be reviewed before oxytocin is restarted.

Source: Adapted from the HCA Healthcare Perinatal Safety Initiative, Oxytocin "In Use" Checklist, 2009

Standardized Order Set

This order set aims to reduce medication errors and ensure accurate and transparent drug administration to avoid dose omission. It will help mitigate adverse events stemming from misuse of oxytocin and help prevent common errors with IV oxytocin.

<u>Safe Administration of Oxytocin Recommendation(s)</u>

#7: Standardized Use
#8: Independent Double Check and Smart Pumps
#9: Low-Dose Regimen
#10: Stopping and Re-Starting Oxytocin.

<u>Tips for Implementation</u>

- See related tips above for safety checklists.
- Embed in electronic medical records where possible.
- Tailor the order set to follow the hospital's official standard format.
- Implement an independent double check with two regulated healthcare providers reviewing the order set once signed by the administering care provider.

First page of the order set:

Provincial Council for Maternal and Child Health

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 contraindicate 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, 2020; CPPC, 2020).
☐ 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).
  - q15 minutes during active second stage, once the woman has begun pushing (CPPC, 2020; SOGC, 2020).
  - 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

Standardized Order Set – Page 2

Medication 1

☐ Primary IV initiated with maintenance infusion of ☐ 0.9% Sodium Chloride OR ☐ Ringers Lactate at ☐ _____ mL/hr on IV smart pump 2, 3

☐ 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. 4

☐ Low Dose Protocol
- Start oxytocin infusion at ☐ **1 milliunits/minute (3 mL/hour) OR** ☐ **2 milliunits/minute (6 mL/hour)**. 5
- 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. 6
- 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. 7

Reduce Oxytocin 8

☐ In the event of atypical FHS (as defined in table 5), 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 4 below.

☐ Document clinical actions and notify MRP when oxytocin decreased.

Stop Oxytocin

☐ In the event of an abnormal FHS (as defined in table 5), **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 4). 9

☐ 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 Order

_____
_____
_____
_____
_____
_____
_____
_____

Ordering MRP

Print Name: _____ Signature: _____

Rationale and Supporting Information

1. Patients should receive a **maintenance infusion rate** in their primary IV line. This infusion rate can be higher or lower, depending on the most responsible practitioner's (MRP) assessment and if the patient is at risk of fluid overload.

2. This **diluted solution** is recommended to ensure safe administration and reduce risk of errors. This will require 1 ampule (equivalent to 10 international units (iU) per infusion which will minimize preparation errors and drug wastage.

3. Oxytocin should be diluted in **non-dextrose intravenous fluid** to prevent hyponatremia and glucose instability.

4. Integrate an **independent double check** in the order set for the initial pump setup to minimize opportunities for error. This may differ depending on organization-specific procedures, but should follow principles from the ISMP of Canada.

5. A **low dose protocol** is recommended as it is the most conservative approach. Starting the infusion at 1-2 mU/minute and increasing the rate by 1-2 mU/minute is dependent on clinical judgement that considers the patient's clinical history and FHR findings. For example, those attempting a TOLAC may benefit from conservative administration starting at 1 mU/min and increasing by 1mU/min rather than starting at and increasing by 2 mU/min.

6. **Soft stop/safety checkpoint** – Most patients will have adequate contraction pattern between 8-12mU; hence a soft stop has been added here to cue the need to reassess. Administrator or MRP should assess patient to determine if adequate contraction pattern has been achieved. MRP can be contacted for a verbal order to continue with oxytocin increases if needed. This should correspond to a soft stop on the infusion pump.

7. **Hard stop** – Exceeding a hard stop should require a written order (and therefore a reassessment of the patient/fetal status). This should correspond to a hard stop on the infusion pump. Any dose higher than 20mU/min requires the administrator to select override on the pump for every dose change.

8. Reducing the infusion rate or stopping oxytocin should align with the in-use safety checklist.

9. Interventions must be included within the order set and documented;

Table 1: Oxytocin Dosage Rate

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

Standardized Order Set – Information Tables

Tables 3, 4 and 5 are sourced from the SOGC No. 396 Fetal Health Surveillance: Intrapartum Consensus Guideline [7]. The content is intended to support understanding and utilization of the above Order Set.

Table 3: Classification of Normal Uterine Activity and Tachysystole

SOGC Clinical Practice Guideline, Fetal Health Surveillance: Intrapartum Consensus Guideline (No. 396 March 2020)

Normal

- **Frequency**: 5 or less contractions in a 10-minute window, averaged over 30 minutes
- **Duration:** Less than 90 seconds
- **Intensity:** Mild, moderate or strong by fundal palpation, **OR** IUPC >25 mm Hg and <75 mm Hg above the baseline except in second stage
- **Resting tone:** Uterus soft on palpation for a minimum of 30 seconds between contractions, **OR** IUPC <25 mm Hg

Tachysystole

Includes any of the following criteria:

- **Frequency:** 6 or more contractions in a 10-minute window, averaged over 30 minutes
- **Duration**: More than 90 seconds
- **Resting tone:** Resting period between contractions of <30 seconds **OR** the uterus remains firm or >25 mm Hg between contractions

Table 4: Intrauterine resuscitation

SOGC Clinical Practice Guideline, Fetal Health Surveillance: Intrapartum Consensus Guideline (No. 396 March 2020)

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

- Remove vaginal PGE_2/ **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
- Ask patient to modify or pause pushing efforts in the active second stage of labour
- Improve maternal hydration, with an intravenous fluid bolus, only if indicated (i.e., maternal hypovolemia and/or hypotension); be aware of patient's fluid balance
- 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 intravenous nitroglycerine). Although sublingual is frequently used, it is not effective.
- Consider amnioinfusion in the presence of complicated variable decelerations
- Provide supportive care to reduce maternal anxiety (to lessen catecholamine impact)
- 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.

Table 5: Classification of Intrapartum EFM Tracings

SOGC Clinical Practice Guideline, Fetal Health Surveillance: Intrapartum Consensus Guideline (No. 396 March 2020)

	Normal	Atypical	Abnormal
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 minutes • Rising baseline • Arrhythmia (Irregular rhythm)	• <100 bpm • >160 bpm for >80 minutes • Erratic baseline
Variability	• 6–25 bpm • ≤5 bpm for <40 minutes	• ≤5 bpm for 40–80 minutes	• ≤5 bpm for >80 minutes • ≥25 bpm for >10 minutes • Sinusoidal
Acceleration	• Spontaneous accelerations but not required • Acceleration with scalp stimulation	• Absence of acceleration with scalp stimulation	• Usually absent (accelerations, if present, do not change classification of tracing)
Deceleration	• None • Non-repetitive uncomplicated variable decelerations • Early decelerations	• Repetitive uncomplicated variables • Non-repetitive complicated variables • Intermittent late decelerations • Single prolonged deceleration ≥2 minutes but <3 minutes	• Repetitive complicated variables • Recurrent late decelerations • Single prolonged deceleration ≥3 minutes but <10 minutes
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**: 1 or maximally 2 in a row		

EFM: electronic fetal monitoring; FHR: fetal heart rate.

Standardized Medication Labels

These labels support communication, help prevent drug mix-ups and may reduce the chances of missing warning labels. Use of labels can contribute to the safe use of oxytocin.

<u>Safe Administration of Oxytocin Recommendation(s)</u>
#6: Medication Handling

<u>Tips for Implementation</u>

- See tips above for safety checklists.
- When creating labels, include:
  - Patient's name
  - Drug name
  - Amount
  - Concentration
  - Date/time
  - HIGH-ALERT status
  - Administered by:
  - Checked by:
- Engage pharmacists in discussions and decision-making around label use.

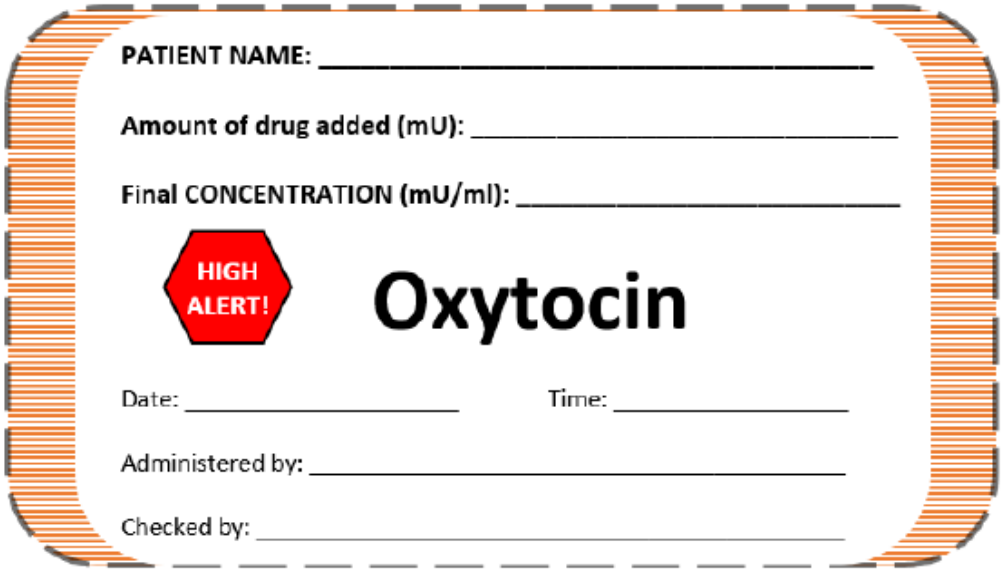


Figure 1: Label for reconstituted oxytocin IV bag

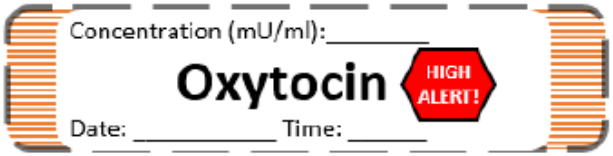


Figure 2: Adult syringe label for oxytocin

Figure 3: IV line label for oxytocin

References

[1] Agency for Healthcare Research and Quality, "AHRQ Safety Program for Perinatal Care - Safe Medication Administration Oxytocin," Rockville, 2017.

[2] Canadian Perinatal Programs Coalition, “Fundamentals of Fetal Health Surveillance Online Manual”, 2018

[3] College of Nurses of Ontario, "Practice Guideline: Disagreeing With the Plan of Care," Toronto, 2009.

[4] College of Nurses of Ontario, "Practice Standard: Medication," College of Nurses of Ontario, Toronto, 2017.

[5] Healthcare Insurance Reciprocal of Canada [HIROC] and the Canadian Medical Protective Association [CMPA], "Delivery in Focus: Strengthening obstetrical care in Canada," Ottawa, 2018.

[6] Hospital Corporation of America, "HCA Perinatal Safety Initiative," 2009.

[7] Society of Obstetricians and Gynaecologists of Canada, "Fetal Health Surveillance: Intrapartum Consensus Guideline. No 396," Journal of Obstetricians and Gynaecologists of Canada, 2020.

[8] Perinatal Services BC, “Registered Nurse Initiated Activities Decision Support Tool No. 4: Evaluation of Progress of Labour/Dystocia”, 2011

[9] Royal College of Obstetricians and Gynaecologists, "Induction of Labour Evidence-based Clinical Guideline," 2001.