EMERGENCY OBSTETRICAL DRUGS

As soon as we are advised that we will be admitting a pregnant or post-partum patient, please call pharmacy to request the **"CCTC Emergency OB Drug Kit"**. This is a special ***ward stock kit*** that will only be sent upon request, to ensure emergency drugs are available when we have a pregnant or post-partum patient in CCTC. We do not need an order or patient name.

To simplify the process, a single obstetrical "kit" will be sent that contains both prenatal and post-partum emergency drugs. The kit will consist of two packs of medications, ***one that will be kept in the patient's refrigerated bin*** and the other ***in the patient's room temperature bin***. The nurse will place these drugs in the patient bins so that we know where they will be located.

It is essential to confirm the location of these medications and review their use at the start of each shift, as obstetrical emergencies are often rapid in onset. Be aware that, on occasion, the pharmacy technicians have removed these drugs prior to the patient leaving CCTC, making it important to recheck the bins frequently. Please let Lynne/Elke or Brenda know if this happens so that we can follow up.

SUMMARY OF DRUGS IN THE CCTC EMERGENCY OBSTETRICS KIT

ROOM TEMPERATURE BIN DRUGS				
Drug	**Indication/Mechanism**	**Stock/Concentration**	**Dose/Route**	**Notes**
Carbetocin	A long-acting synthetic octapeptide analogue of oxytocin. Stimulates uterine contraction to prevent uterine atony post birth.	2 X 100 mcg vial	100 mcg given immediately ***after*** cord clamping. Can be given IV or IM; IV faster onset of action, IM preferred for longer duration of action. Usually given IV. .	Routinely given to patients immediately after C-section and to patients that are at increased risk for PPH to prevent post-partum hemorrhage. Preferred 3rd stage (delivery of placenta) uterotonic in critical care.
Celestone (betamethasone)	Betamethasone is the steroid of choice for fetal lung maturation (it crosses the placenta). Only indicated for pregnant person < 34 weeks gestation, ordered by Obstetrics.	2 X betamethasone 6 mg vial.	Dose 12 mg **IM** Q24H X 2 Order second dose if time permits administration in EHR.	The first dose (2 X 6 mg vials) is kept in the non-refrigerated bin. Dexamethasone 6 mg Q12 H X 48 hours is considered equivalent fetal lung dosing (it also crosses placenta).

ROOM TEMPERATURE BIN DRUGS				
Drug	**Indication/Mechanism**	**Stock/Concentration**	**Dose/Route**	**Notes**
Celestone (betamethasone)	Optimal timing of delivery is >48 hours post steroid but less than 7 days after first dose. The effects start as early as 6 hours after administration of first dose.			If the mother needs steroids for her own treatment plan, the choice of steroid will depend on whether fetal lung dosing is also required. If fetal lung ***plus*** maternal steroid treatment is desired, dexamethasone IV or betamethasone IM is given X 48 hours (covers both needs), then switched to a steroid that does not significantly cross the placenta for pregnant person's continued steroid treatment (methylprednisolone or hydrocortisone). The choice may be based on the desire for immunosuppression or treatment of adrenal insufficiency (e.g. sepsis). If a pregnant person requires steroids but ***fetal lung maturation is not desired,*** the entire treatment will be with methylprednisolone or hydrocortisone.

REFRIDGERATED BIN DRUGS (AMPULES/VIALS/TABS)				
Drug	**Indication/Mechanism**	**Stock/Concentration**	**Dose/Route**	**Notes**
Tranexamic Acid (TXA)	First line medication for post-partum hemorrhage.	1 x 1 gm vial Store at 20-25 °C. Stable for up to 12 weeks in fridge.	Same dosing as trauma: 1 gm bolus in 100 ml (saline or dextrose) over 10 minutes, followed by 1 gm infusion over 8 hours if needed.	Also available as routine CCTC ward stock. Tranexamic acid prevents clot breakdown (antifibrinolytic), but does not induce clotting. WHO WOMAN trial in 2017 demonstrated reduction in maternal death due to PPH when given early.
Oxytocin	Oxytocin stimulates uterine contractions and the production of prostaglandins. It is used to induce labour and to prevent or control post-partum hemorrhage.	2 X 10 unit vials If a bolus dose (usually 50 units) is ordered, use the infusion bag and administer via pump).	Usual dose is 10 units IM or 5 units IV	If patient received post-partum carbetocin (a long-acting oxytocin analogue), oxytocin is unlikely to provide additional benefit during post-partum hemorrhage because the oxytocin receptors will be saturated by the carbetocin. Oxytocin administration can also make carbetocin less effective; carbetocin is the preferred uterotonic in critical care.
Ergonovine Maleate	An ergot alkaloid that produces uterine contraction and arterial vasoconstriction by action on alpha-adrenergic dopaminergic and serotonin receptors.	1 X 0.25 mg ampule Storage temperature 2-8 °C (60 days at room temperature)	0.25 mg injection (**IM**) X 1 (physician can dilute and give IV over 1 minute)	Less potent vasoconstrictor than ergotamine. May be ineffective if patient is hypocalcemic (e.g. during massive hemorrhage protocol). **CONTRAINDICATION:** cardiovascular disease, renal or hepatic insufficiency, hypertension.

REFRIDGERATED BIN DRUGS (AMPULES/VIALS/TABS)				
Drug	**Indication/Mechanism**	**Stock/Concentration**	**Dose/Route**	**Notes**
Hemabate (carboprost tromethamine)	A prostaglandin analogue, with oxytocic properties. Stimulates uterine contractions; used to treat Post-partum Hemorrhage refractory to oxytocin/carbetocin or uterine massage.	1 X 250 mcg vial Storage temperature 2-8 °C	250 mcg IM or intramyometrially (MD only) Repeat with 15-45 min intervals if needed; maximum 8 doses.	**CONTRAINDICATION:** active cardiovascular, pulmonary, renal, and hepatic disease and asthma or hypertension. Can worsen a pulmonary shunt.
Misoprostel	Mimics the effects of prostaglandin E1, a naturally occurring hormone that promotes uterine muscle contractions.	4 X 200 mcg Tabs Refrigerated at LHSC Store at or below 25 °C	Usual dose 800 mcg, given orally to induce labour or rectally for PPH. The same tablets are used for oral or rectal.	Do not remove from package until ready to use. Side effects are nausea/vomiting, diarrhea and fever.

REFRIDGERATED PREMIXED INFUSION BAGS				
Drug	**Indication/Mechanism**	**Stock/Concentration**	**Dose/Route**	**Notes**
Oxytocin Infusion	Produces uterine contractions. Used as an induction drug and to control **post-partum** bleeding.	Oxytocin 50 units / 1 L Ringers infusion bag. Usual dose is 50 units Refrigerate	For PPH: 10 units (200 ml) over 15 minutes, then remaining 40 units (800 ml) over 5 hours and 45 minutes (total over 6 hours is 50 units)	Infusion is started after birth (anterior shoulder or birth of baby) and may continue during a post-partum hemorrhage or for a patient at risk for post-partum hemorrhage. Caution in renal failure; can contribute to edema/pulmonary edema.
MgSO4 Infusion (Maternal Indication)	**Maternal Indication:** Preeclampsia and eclampsia (preeclampsia + seizure). First line anticonvulsant for eclamptic seizure. Also used to prevent seizures in severe preeclampsia and to prevent recurrent seizures in eclampsia. May be required prenatally and continued up to 24 hours post birth. Delayed preeclampsia/ eclampsia can present post-partum.	40 gm/1 L 0.9 normal saline infusion bag Refrigerate	**Maternal Indication Dosing:** 4 gm loading dose over 20 minutes, followed by 2 gm per hour. Total daily dose should not exceed 40 gm.	**This is high dose MgS04** Given as a loading dose followed by an infusion. Give loading dose using infusion pump library and monitor closely for cardiorespiratory depression. During infusion, assess patient regularly for hyporeflexia (indication of toxicity). Caution with maintenance dose 2 gm/hour in patients with renal failure (decreased clearance): may need to reduce to 1 gm/hr. Draw Pregnancy Induced Hypertension bloodwork and magnesium/ionized calcium every 6 hours to assess for toxicity. Reverse cardiovascular collapse due to MgSO4 with calcium chloride or gluconate. Repeat q5 minutes.

REFRIDGERATED PREMIXED INFUSION BAGS				
Drug	**Indication/Mechanism**	**Stock/Concentration**	**Dose/Route**	**Notes**
MgSO4 Infusion (Fetal Indications)	**Fetal Neuro Protection:** Given prior to preterm birth <34 weeks gestation, to reduce neonatal neurological complications. For urgent birth, initiate loading dose STAT, followed by infusion until birth (up to 24 hours).	40 gm/1 L 0.9 normal saline Refrigerate	**Fetal Indication Dosing:** 4 gm loading dose over 30 minutes, followed by 1 gm per hour	**This is high dose MgS04** Given as a loading dose followed by an infusion. Give loading dose using infusion pump library and monitor closely for cardiorespiratory depression. During infusion, patient must be assessed for hyporeflexia (indication of toxicity). Reverse cardiovascular collapse due to MgSO4 with calcium chloride. Rare since lower dose used.