

Admission Guidelines for Pregnant Patients to CCTC

The care of the critically ill pregnant patient requires a multidisciplinary approach. Care planning needs to be coordinated between the critical care, obstetrical, obstetrical anaesthesia and neonatal intensive care teams and should include any other specialty services who are involved in the patient's care. Within 24 hour of admission to CCTC, a multidisciplinary care planning meeting should be conducted to develop a collaborative plan. This will be coordinated by the CNS in CCTC or the CCTC Consultant. Timing of the team round will depend upon the urgency of the situation.

This document provides the background for the Checklist for the Admission of a Pregnant Patient to CCTC. If you have any questions or concerns, please page Brenda Morgan at 19914.

Upon admission of a pregnant patient to CCTC:

1. If there is more than one pregnant patient requiring CCTC admission, **cohort** pregnant patients into the same bay. This will facilitate sharing of emergency equipment and streamline Obstetrical Care Unit (OBCU) support.
2. **Avoid adjacent placement or doubling of ARO positive patients.** Admit to a Bay where an adjacent room is available that can serve as the neonatal resuscitation room.
3. **Maintain Uterine Displacement at all Times:**

Pregnant patients can become very hypotensive in the supine position due to IVC and aortic compression from the gravid uterus. Patients who are sedated or who have altered level of consciousness may be unable to recognize the signs of decreased BP that would make an alert woman spontaneously reposition herself.

Nurse all pregnant patients in the left uterine displacement position (with wedge under the right hip, patient tilted toward left side). In the event of maternal CPR, manual displacement of the uterus must be continuously maintained by an assigned healthcare provide. Hand position for compressions is the same as for a non-pregnant patient (movement of the hands to a more cephalic position is no longer recommended).

4. **Consult Maternal Fetal Medicine (MFM: high risk obstetrics). May be covered at night by Obstetrician on-call. Page through switchboard or on MFM pager 10493.**

Direct communication between CCTC and Obstetrical Consultants should occur.

- a. To assess maternal and fetal health and treatment risk
- b. To determine gestation age
- c. To direct prenatal and perinatal care
- d. To determine fetal monitoring requirements
- e. To work in collaboration with the critical care and obstetrical anesthesia teams to provide high quality care of the critically ill maternity patient

A multidisciplinary planning meeting including CCTC, OBCU, OB Anaesthesia, NICU and other relevant services should be organized to develop a plan of care.

5. **Notify the Charge Nurse OBCU**

Direct portable phone to Charge Nurse: 74680 OBCU Extension: 58168

- a. Notification ensures the OBCU is aware of the status of any admitted patients.

- b. Obstetrician to determine type of fetal monitoring; this will be provided by OBCU nurse as required. This could range from being available for consultation on an “as needed basis” for first trimester pregnancies, to invasive and continuous maternal and fetal monitoring. A plan for support will be developed at the time of admission and modified throughout the admission as required.

6. Cardiology and Other Specialty Services

Women with preexisting cardiac conditions (e.g. valvular disease, congenital heart defects, cardiomyopathy, arrhythmia) are usually followed during pregnancy by cardiology. Consultation notes are usually in Power Chart.

Pregnancy induced cardiomyopathy may mimic symptoms of preeclampsia or pulmonary embolic disease and accounts for some of the new onset cardiac disease of pregnancy that leads to critical care admission. Risk factors for cardiac disease during pregnancy have increased as the number of women with advanced maternal age, high BMI and survival to adulthood with congenital anomalies has grown.

Pregnant patients known to be at high risk, usually have birth plans that identify all involved medical specialties. Upon admission, involved services should be notified of patient’s admission.

The treatment plan for women who become critically ill *because of their pregnancy* usually involves early birth. Critically ill pregnant patients where imminent birth is not part of the treatment plan usually have a reason for admission that is non-obstetrical (e.g., trauma, pneumonia or meningitis). The goal for these patients will be to continue to support the pregnancy while treating the mother’s underlying condition as the priority.

7. Consult OBSTETRICAL Anesthesia: CCTC RN to page the Obstetrical Anaesthesia Consultant on call (notify upon patient admission to CCTC).

- a. To assess maternal health and anesthetic risk factors
- b. To plan anesthetic care for labour and/or birth
- c. To be aware of all obstetrical in-patients
- d. To work in collaboration with the critical care team and obstetrical care team to provide quality care of the critically ill parturient

The airways of pregnant patients are short and more edematous. The gravid uterus increases the risk for aspiration. Hypoxemia can develop more quickly, but the pregnant patient’s respiratory reserve and ability to compensate is considerably reduced. Metabolic requirements also increase during pregnancy. Consult OBSTETRICAL anaesthesia electively or urgently when required to support safe intubation of a pregnant patient.

8. **Document in the Physician Orders** that the patient is X weeks and X days pregnant. This will be identified on the MAR. First trimester ultrasound provides the best estimate of gestational age. The Obstetrician will determine the gestational age. Update the gestation age daily.

9. Blood Transfusion Lab:

Critically ill obstetrical patients are at risk for both life threatening hemorrhage and venothromboembolic events. Preparation in the event of hemorrhage is needed for all critically ill obstetrical patients (pregnant or immediately post partum). Ensure that the blood transfusion consent has been obtained at admission and that Blood Transfusion Lab sample remains current during CCTC admission.

Ensure that patients have adequate vascular access until deemed to be no longer at risk. Fibrinogen levels should be drawn STAT in an patient with an obstetrical bleed and fibrinogen replacement should be considered at the start of the transfusion resuscitation (e.g., cryoprecipitate).

Knowledge of a pregnant patient's Rh status is needed. Rh Immune Globulin is administered at 28 weeks for all Rh negative mothers unless the father's blood type can be confirmed as also Rh negative. It is also administered anytime there has been a potential communication of fetal and maternal blood (including delivery, vaginal bleeding, placental disruption, trauma etc), or in the event that a female patient (in childbearing years) receives Rh positive blood.

More information can be obtained from the Blood Transfusion Manual.

10. **Diagnostics:**

Ensure that all radiology and investigational test requisitions **include pregnancy status**.

Notify NICU Charge Nurse (pager 74631) if gestational age is greater than or equal to 23 weeks.

The default is to always to setup NICU resuscitation equipment upon admission. Gestational age and resuscitation plans are not always precise in the 22-24 week gestational age group and often require additional testing and team discussion to determine the most appropriate plan. Resuscitation is mandatory at 24 weeks unless a clear plan has been documented in the chart.

NICU will provide emergency neonatal resuscitation equipment and will be responsible for the care of the neonate. The NERT team (Neonatal Emergency Response Team) or NICU delegates will round daily and PRN to review equipment setup, CCTC environment and resuscitation plans.

For restricted fetal resuscitation, some equipment may still be required in the event of a live birth. If a decision is made to restrict neonatal resuscitation, the decision must be documented in the chart and include a detailed care plan (including plan in the event of a live birth). Maintain full resuscitation equipment until an alternate plan has been documented and communicated to the team.

11. **Notify PCCU Charge Nurse (pager 15933) if gestational age is deemed viable by obstetrician:**

- a. PCCU will provide emergency response during a Code OB until the neonatal resuscitation team arrives. The NICU team will assume responsibility for neonatal resuscitation upon their arrival.
- b. NICU will provide emergency neonatal resuscitation equipment; PCCOT will round in CCTC to ensure their staff is aware and familiar with setup as first responders.

12. **Obtain Emergency Birth/Caesarean Equipment.**

In the event of an emergency birth or crash C-section, there may be insufficient time to obtain patient's admission/pregnancy. Obstetrical and neonatal resuscitation teams will expect equipment to be available upon their arrival.

Obtain C-section equipment is required for any patient who is pregnant with a fetus of viable gestational age to improve the likelihood of successful emergency or preterm birth. C-section

equipment is also required for a patient who is visibly pregnant *regardless of viability* to ensure that equipment is available in the event of cardiac arrest (and perimortem C-section is required).

Maternal birth equipment (from OBCU; return to OBCU at discharge):

From Obstetrical Care Centre (Charge Nurse):

- a. Vaginal Birth Tray (for all pregnant patients, contact OBCU)
- b. C-Section Tray (for all patients who are visibly pregnant *OR* who are pregnant with an infant of viable gestational age)
- c. C-Section Disposable Pack (contains radiopaque sponges, blades and other disposables)
- d. 2-3 260 Vicryl sutures

14. Dedicated Neonatal Resuscitation Room:

Maintain a dedicated neonatal resuscitation room in a room adjacent or immediately across from the maternal room. This provides quick access in the event of an emergency birth and accommodates both the maternal and neonatal emergency response teams. The adult bed must be removed from the room to ensure adequate space for resuscitation.

Keep the infant warmer and supplies covered and ensure hand hygiene by all individuals entering the room. Keep door closed and minimize entry to the room to those who are checking equipment. Neonates have underdeveloped immune systems and strict precautions are essential. Signage on the door can be used as a reminder to staff.

The warmer should be turned on immediately (or left on at low temperature) upon any signs of maternal deterioration or potential birth.

15. Neonatal Resuscitation Equipment (if viable gestational age). Equipment is kept in NICU; return to NICU at discharge:

The infant warmer and all infant resuscitation equipment will be kept in NICU and brought to CCTC upon notification of NICU Charge Nurse. Equipment and supplies will be regularly checked Q shift by BOTH NICU and PCCU along with the CCTC RN to ensure familiarity by all teams.

Emergency supplies and medications are provided/maintained in a kangaroo bag that is brought with the infant warmer.

The neonatal supplies will be kept in CCTC for the duration of the patient's admission until birth.

Warming Table (also called "Infant Care Centre", this is an infant bed that allows easy access of the infant for resuscitation, and includes an overhead heater and skin sensing system):

Review how to turn the warmer on and how to drop the side rails at the start of each shift. Leave warmer on at 36 degrees. Review equipment with NICU and PCCOT team rounds.

Warmers must never be on in the servo mode unless skin temperature sensors are attached to neonate. Servo mode adjusts the warmer temperature based on neonatal temperature.

Infant Resuscitation Supplies and Medication (from NICU):

The infant resuscitation equipment is contained in a portable kangaroo bag. This is a standardized and portable bag used by the NICU and PCCOT teams.

Neonates who require ventilatory support will be manually ventilated initially. If required, the neonatal ventilator/transport unit will be obtained by neonatal resuscitation team.

Neonatal oxygen and suction (NICU):

NICU RRT will provide suction setup, oxygen and room air with blender (neonates are resuscitated with lower oxygen concentrations or on room air to avoid oxygen toxicity).

Q Shift Rounds with Emergency Response Teams:

Review neonatal resuscitation equipment and plan of care with NICU/PCCU/OBCU response teams each shift to ensure appropriate supplies and sizing (e.g., BP cuffs, suction catheters) and knowledge of patient care plans. This familiarizes CCTC and emergency response teams to supplies, the environment and care plans in advance of an emergency. This is also an opportunity for nurses to receive just-in-time education on the infant warmer and for all teams to review expectations in the event of a CODE OB.

- a. Cover warming table and emergency suction equipment to keep it clean until use.
- b. Maintain room temperature in neonatal resuscitation room at 25-26C.
- c. Maternal delivery equipment can be maintained in neonatal resuscitation room if space is an issue. Keep room uncluttered with unrestricted floor plan around warmer.
- d. Maintain additional supply of hand hygiene products for ease of access in emergency and limit unnecessary room access. Ensure hand hygiene for anyone entering room to check equipment.
- e. Maintain supply of clean gowns for neonatal emergency responders.

16. Emergency Response:

At the start of EACH shift, review the indications for CODE OB, ACLS modification for the pregnant patient, and team member expectations in the event of an obstetrical emergency. These are all listed on the CCTC Website. Be sure physicians, RRTs, Unit Clerk and all nurses in your Bay are aware of the CODE OB procedure. Ensure Unit Clerk is also aware of patient admission and of emergency response procedures.

Obstetrical emergencies are infrequent events and CODE OB is rarely required. Preparation at the time of admission ensures efficiency during emergency situations.

If a patient is deteriorating, call early!

17. Oxytocin/Magnesium:

Oxytocin and Magnesium infusions are both considered high risk medications. Prepared IV infusion bags are kept in the fridge in OBCU and can be prepared by Pharmacy for patients admitted to CCTC. A porter can obtain medications from OBCU after hours.

Oxytocin is used to induce labour or to maintain uterine tone following birth in patients at

risk for/who are experiencing post partum hemorrhage.

Magnesium is the drug of choice for the prevention or treatment of seizures during pregnancy (eclampsia). It is also administered to a mother sed to provide neonatal cerebral protection if gestational age is less than 32 weeks and birth is imminent.

18. Restricted Resuscitation(s):

All decisions to limit maternal life-support or resuscitation efforts must be documented in Power Chart and communicated to the team according to usual practice in CCTC. Orders to withhold or withdraw maternal life-support or CPR need to be entered in Power Chart as per standard care.

Decisions to withhold or limit fetal or neonatal resuscitation must be documented in the clinical record along with a clear plan of care that provides direction to healthcare responders. The impact of the orders should consider the expertise and experience level of the front-line staff and emergency response teams.

If a decision has been made to not offer an emergency Cesarean section, the reason must be clearly documented in order to distinguish between withholding in situations of fetal distress versus withholding in situations of maternal compromise (e.g., perimortem Cesarean during CPR or maternal hemorrhage following fetal demise).

19. Infant Loss and Accountability

Definitions:

Live Birth:

Any fetus born with signs of life (heart beat, breathing, pulsating of cord) is considered a live birth. If it dies, it is registered as a neonatal death. This could occur any time after 16-17 weeks.

Stillbirth:

A fetus born without signs of life (if it has reached 20 completed weeks and/or 500g) is registered as a stillbirth.

Abortus:

A fetus born without signs of life that hasn't reached 20 completed weeks and/or 500 g is considered an abortus (products of conception) and is not a registered birth.

Accountability for Care:

Accountability for Stillbirth and Abortus:

In Perinatal Care, abortus and stillbirths are cared for under Obstetrics by Obstetricians and OBCU nurses. A nurse from OBCU will provide care in conjunction with the CCTC nurse in the event of stillbirth or abortus, and will assume responsibility for any provincial registration requirements. The OBCU nurse will initiate fetal memory box creation for these situations.

Accountability for Live Birth:

NICU nurses are accountable for the registration and support of neonates (born alive). For neonates who are expected to die imminently, the OBCU nurse may

assume responsibility for care in conjunction with the NICU nurse. The NICU nurse will be responsible for birth/stillbirth registration and will initiate neonatal memory box.