



Centre for Simulation-Based Learning

Appendix 1. ISS of labouring patient with suspected or confirmed COVID-19

Title: Labouring patient with suspected or confirmed COVID-19	
Brief description: Megan is a 30-year-old G2T1L1 at GA 37+6 who presents in active labour. She reports a current fever and history of international travel. She is met at the front door by a team member in appropriate personal protective equipment (PPE) and is taken to an isolation room for assessment. She is found to be 3 cm dilated, with an abnormal fetal heart rate. A cesarean section is mounted with necessary precautions. Neonatal resuscitation is required. Appropriate dispositions for the patient and neonate are made.	
Operational setting (Environmental description – eg, ICU, ER, OR) In situ on Labour and Delivery <ol style="list-style-type: none"> 1. Labour and Delivery isolation room 2. Operating room 3. Neonatal resuscitation room 	
Target learners (professions, levels): Interprofessional simulation: Involving Obstetrics, Neonatology, Anesthesia, Infection Prevention and Control	
Educational objectives <ul style="list-style-type: none"> • 1. Identification & management of suspected and confirmed COVID-19 • 2. Identification of latent safety threats – barriers to care, isolation precautions • 3. Discussion about appropriate debriefing, family and team 	
Primary objectives: MEDICAL EXPERT: Identify patients with suspected COVID19, appropriately isolate patients, assess active maternal and fetal concerns and manage appropriately, neonatal resuscitation with suspicion of maternal COVID-19 infection Communication and collaboration and use of CRM principles: <ol style="list-style-type: none"> 1) Define a leader and transition leader 2) Create a shared mental model and establish treatment priorities 3) Clarify team member roles and delegate responsibilities 4) Demonstrate closed loop communication 5) Effective teaching in an emergency situation Identification of latent safety threats/barriers to care.	CANMEDS roles <ol style="list-style-type: none"> 1. Medical expert 2. Communicator 3. Collaborator 4. Professional 5. Manager 6. Health Advocate 7. Scholar Safety Competencies <ol style="list-style-type: none"> 1. Culture of Safety 2. Working in Teams 3. Communicating 4. Managing Risk 5. Human Factors 6. Adverse Events CRM Principles <ol style="list-style-type: none"> 1. Leadership 2. Task Delegation 3. Closed loop

	<p>communication</p> <ol style="list-style-type: none"> 4. Shared Mental Model 5. Monitor and crosscheck 6. Decision Making 7. Conflict Resolution 8. Dealing with hierarchy
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Progression of Scenario

Megan is a 30-year-old G2T1L1 at gestational age 37+6. Her pregnancy was uncomplicated. She presents in active labour. Upon screening at the Labour and Delivery entrance, she reports a fever and history of international travel. The team identifies a risk of COVID-19. A team member dons appropriate personal protective equipment (PPE) and meets the patient at the front door. She is taken to the isolation room for assessment.

On exam, she is uncomfortable. She is contracting strongly every three minutes, with no history of membrane rupture or vaginal bleeding. She reports decreased fetal movement. Her vitals are taken: HR 120, BP 110/75, RR 16, SPO2 89%. The fetal heart rate is 160 beats per minute, minimal variability, no accelerations, and late decelerations.

The obstetrical care provider is called for assessment. She is found to be 3 cm dilated. Maternal and intrauterine resuscitation is initiated. The abnormal fetal heart rate persists. Given the clinical scenario, she is consented for cesarean section.

Using appropriate precautions, the patient is moved to the operating room. The team will perform a surgical brief and identify the risk of COVID-19. They will address necessary precautions during the caesarean section, and plan for post-operative disposition. Potential complications (including maternal and neonatal decompensation) will be identified.

A cesarean section under general anesthetic will be performed. The baby will require resuscitation by the Neonatology team. Disposition will be planned for the patient and baby.

STAGE ONE: PATIENT ARRIVES TO LABOUR & DELIVERY FOR ASSESSMENT

Business clerk should:

1. Patient arrives at Labour & Delivery door with partner.
2. The patient uses the phone to gain entry to the unit. She indicates she is in labour. If asked appropriate screening questions, she indicates she feels feverish with a cough and returned from international travel the previous week.
3. If asked, her partner is asymptomatic.
4. The patient should not be allowed immediate entry to the unit.
5. Nursing staff should be alerted of a patient with potential COVID-19.

Nurse should:

6. Nurses recognize potential COVID-19.
7. Nurse dons appropriate PPE.
8. Nurse meets patient at door and has patient put on mask.
9. Nurse will confirm additional family members have no symptoms. Partner will be given mask, and additional family members should be sent home.
10. Patient is taken to isolation room.
11. Nurse will obtain brief history from patient: contractions started 2 hours ago. No rupture of membranes, no vaginal bleeding. Decreased fetal movement for the last hour. Has been feverish with cough for the last 24 hours. Returned from international travel last week.

12. Nurse assesses maternal vitals: HR 120, BP 110/75, SPO2 89%, RR 18. Electronic fetal heart rate monitoring is initiated.
13. Nurse calls obstetrical care provider for assessment.

STAGE TWO: OBSTETRICAL ASSESSMENT AND RESUSCITATION

14. Nurse hands over to obstetrical care provider
15. Obstetrical care provider takes further patient history (see patient brief below for details). Confirms recent travel and symptoms (fever and cough).
16. Patient is examined and found to be 3 cm dilated.
17. Initiates maternal and intrauterine resuscitation - blood work collected, IV fluid bolus initiated. Supplemental oxygen provided. Patient should be positioned in left lateral decubitus. Nasopharyngeal swabs should be collected for COVID-19 and influenza.
18. Obstetrical care provider reviews clinical situation with patient and need for urgent delivery for fetal concerns. Discusses potential COVID-19. Consent obtained.

STAGE THREE: MOUNTING CAESAREAN SECTION

1. Obstetrician alerts team of need for delivery (including Nursing, Anesthesia, Neonatology). Infection prevention and control should be alert.
2. Patient is moved to operating room.
 - a. Note: can utilize simulation mannequin at this point if available.
3. All involved staff don PPE.
4. Briefing is performed with all team members present. Should address obstetrical indication for delivery, and suspected COVID-19 infection.
 - a. Team should anticipate need for neonatal resuscitation given abnormal fetal heart rate.
 - b. Appropriate equipment, including neonatal resuscitation equipment, is checked.
 - c. Neonatology team should be in operating room in PPE ready to receive baby.
5. Anesthesiology directs mode of anesthesia (regional versus general anesthesia).
6. Intubation is performed
7. **Facilitator indicates that cesarean section under general anesthetic is performed. Neonate is flat and passed off to neonatology team.**
8. Extubation is performed
9. Plan is made for patient disposition.
 - a. If patient taken back to isolation room for recovery, need to ensure cardiac monitor available within that room

Stage Four: Neonatal resuscitation

1. Flat babe is passed to awaiting Neonatal team. On exam, babe is not vigorous (no tone, not crying). HR <60 beats per minute.
2. Resuscitation initiated in the OR
3. Neonatal team initiates positive pressure ventilation; heart rate does not improve.
 - a. Team moves through algorithm to correct ventilation
 - b. Heart rate remains <60 beats per minute
4. Intubation performed with 3.0 or 3.5 endotracheal tube
5. Baby's heart rate improves to 140 beats per minute
6. Neonatology team prepares for transport to Special Care Nursery with appropriate precautions

BRIEFING FOR THE PATIENT- YOUR ROLE IS A LABOURING PATIENT WITH HISTORY OF TRAVEL AND FEVER

Your name is Megan. You are a 30-year-old G2T1L1 at gestational age 37+6. You present to Labour and Delivery in active labour. You have brought your partner and parents with you. Upon arriving at the unit, you will use the phone to gain entrance. You tell the team you are in labour. You will be asked a series of questions to screen for respiratory symptoms and recent travel. You will respond that you have had a fever for the past day, and recently returned from international travel. Do not volunteer this information unless specifically asked. If asked, your partner is asymptomatic.

You will be met at the door by a team member in personal protective equipment. You and your partner will be asked to put on a mask. You will be taken to an isolation room for assessment. The team will discuss your obstetrical and medical history. You describe an uncomplicated pregnancy. Your last ultrasound was your anatomy scan, which was normal. You had a spontaneous vaginal delivery in 2017 which was uncomplicated.

You have had a fever and cough for the last 24 hours. You returned from travel 1 week ago.

The team will take your vitals and find that your heart rate is high, and your oxygen levels are low. The fetal heart rate is abnormal. They will check your cervix and find that you are 3 cm dilated. They will discuss the need for cesarean section. They will discuss their concern that you may have a COVID-19 infection.

You will be taken to the operating room where you will be delivered by cesarean section. Your baby will require neonatal resuscitation. You will be taken to an isolated room for your recovery period.

BRIEFING FOR THE PATIENT’S PARTNER

You arrive with your partner who is in labour. She has a fever. You both returned from international travel one week ago. You do not have any symptoms.

Environment (OR, ICU, etc; include equipment needed):

1. IV saline lock
2. Saline/RL for bolus
3. Tubes for bloodwork
4. Biohazard bags
5. Nasopharyngeal swabs
6. Hospital bed
7. Hybrid model (mamma birthing and confederate patient plus or minus partner)
8. Baby mannequin
9. Patient mannequin for OR intubation/extubation
10. Patient bracelet
11. Electronic medical record or paper chart
12. Oxygen face mask
13. Glidescope
14. Tavish face mask
15. Blood pressure cuff
16. Pulse oximeter
17. Personal protective equipment
18. Neonatal resuscitation equipment
19. Neonatal transport bed

Notes to instructor:

Key points:

1. Remember to notify patients that are nearby that a simulation will be running
2. Note use of PPE, appropriate donning and doffing
3. Monitor documentation, consent and communication

Debriefing plan:

1. Review challenges of patient care:
 - a. Use of PPE – Did team feel comfortable donning/doffing? Was team confident what PPE should be used at each stage?
 - b. How was patient moved from one care environment to another? For example, what challenges or questions were raised when patient moved from isolation room to OR?
 - c. Where was the partner during cesarean section and neonatal resuscitation?
 - d. How can we optimize team member roles to minimize exposure?
 - e. Were there any challenges with team communication?
 - f. Did all team members feel they had appropriate information to provide care in a safe and effective manner?
 - g. Were there areas of contamination within the unit that may pose safety threat to other patients?
2. Identification of latent safety threats, barriers to care
3. Discuss documentation, tools for documentation
4. Discuss debriefing both with patient and team
 - a. Where was partner left during resuscitation? How can partner be updated through the procedure?