COVID-19: MATERNITY CARE
Newsletter for maternity teams
Issue 1 version 2 (Updated 27th March 2020)

An update on the latest COVID-19 information, curated by

Information sources:

Coronavirus (COVID-19) in Pregnancy from RCOG, RCM, RCPCH, RCoA and OAA.
Version 4 published 21/3/20
(www.rcog.org.uk search ‘coronavirus’; link continually updated)

Spread
• Pregnant women are not currently known to be more susceptible to COVID-19 than the non-pregnant population
• Spread is via respiratory secretions, faeces and fomites (contact with infected material such as mobile phones)
• No strong evidence of vertical transmission
• No evidence of transmission via genital fluid
• There is an estimated incubation period of 0–14 days (mean 5–6 days)

Maternal effects
• Majority of pregnant women will have mild to moderate cold/flu-like symptoms
• Most specific symptoms are a dry cough, fever (> 37.8 °C) or shortness of breath
• There have been no maternal deaths from COVID-19 recorded
• There has been one case of a 34/40 pregnant woman who had an emergency caesarean, who developed acute respiratory distress syndrome and multiple organ dysfunction, requiring ECMO (extracorporeal membrane oxygenation)
• There may be a cohort of asymptomatic individuals in the community
• Pregnant women who have comorbidities (heart disease, lung disease, diabetes) are more susceptible to severe infection

Fetal effects
• No data suggesting increased risk of miscarriage or early pregnancy loss
• No evidence of intrauterine fetal infection; therefore, unlikely there will be congenital effects on fetal development
• Case reports of preterm birth, mostly for iatrogenic reasons (majority for maternal reasons) – whether there is a true link with spontaneous preterm birth is unclear; however, at least one case report highlights fetal compromise and pre-labour rupture of membranes

Antenatal care for women with mild/moderate suspected or confirmed COVID-19
• When practical, appointments should be conducted via the phone or videoconferencing
• If a pregnant woman has mild symptoms she should be advised to self-isolate for 7 day; appointments should be deferred if possible or conducted via phone/video conference
• If a pregnant woman is in a household with a suspected or confirmed COVID-19 case, she should self-isolate for 14 days; appointments should be deferred if possible or conducted via phone/video conference
• Decisions regarding timing of elective caesarean or planned induction should be made on an individual case basis, determining if they can be safely delayed to the end of the recommended isolation period
• In cases of confirmed COVID-19, women should be referred for a fetal growth scan 14 days following resolution of illness
• Women should monitor and report issues with reduced fetal movements as per usual guidance

Information sources:
Plus guidance from:
✓ Public Health England
✓ RCoA, AAGBI and OAA
✓ Intensive care societies
✓ Latest published evidence
Advice from the RCOG (correct as of 21st March 2020)

• Women with suspected/confirmed COVID-19 who are in labour should be cared for on an obstetric unit in an isolation room

• Continuous electronic fetal monitoring in labour is recommended

• Four-hourly maternal observations including respiratory rate and temperature, and hourly oxygen saturations (more frequent observations if abnormal)

• Birth partners:
  • Asymptomatic birth partners should be treated as if they may be COVID-19 positive (wear a mask and frequent hand washing, limit leaving the room).
  • Symptomatic birth partners should not attend the unit and remain in isolation at home

• Mode of birth should not be solely influenced by the presence of COVID-19
  • If there is maternal deterioration or fetal compromise, decision for caesarean should be made on a case by case basis (bearing in mind the additional preparation time for PPE with an operative procedure)
  • Decision to shorten second stage with an assisted vaginal birth should be made on a case by case basis if woman is exhausted and/or hypoxic

• Birthing pools should be avoided

• No contraindication to delayed cord clamping

Guidance from OAA and RCoA (amended 27th March 2020)

Caesarean birth:

Provide epidural or spinal anaesthesia as required.

Avoid general anaesthesia unless absolutely necessary for standard indications. Consider plans for the management of a failed regional technique. Local SOPs for the type of anaesthesia used for Category 1 delivery may need to be reviewed for these cases.

Donning PPE is mandatory and time consuming and will impact on decision to delivery time for category 1 caesarean delivery, no matter what the anaesthetic technique used. Women and their families should be told about this delay.

Labour analgesia:

There is no evidence that epidural or spinal anaesthesia or anaesthesia is contraindicated in the presence of coronaviruses. All usual contraindications to neuraxial block apply as normal.

Epidural analgesia should be recommended for labour to women with suspected/confirmed COVID-19 to minimise the need for general anaesthesia if urgent delivery is required.

Approximately one third of patients in a case series from Wuhan developed thrombocytopenia (platelet count <150) so it would be prudent to check the platelet count before insertion of epidural or spinal, and possibly before removal of the epidural catheter.

There is no evidence that using Entonox® is an aerosol generating procedure. A microbiological filter should be used in the system as per normal practice.

General anaesthesia:

Use of AGP PPE causes communication difficulties: an intubation checklist should be used with closed loop communication.

Rapid sequence induction as per usual practice. Ensure a tight seal during pre-oxygenation to avoid aerosolisation. Do not use HFNO for pre-oxygenation or apnoeic oxygenation.

For intubation videolaryngoscopy is preferable, by the most appropriate anaesthetist available. Do not ventilate until cuff inflation is confirmed.

In case of difficult intubation, plan B is to use a 2nd generation supraglottic airway, plan C is to use FQNA scalpel-bougie-tube.

The anaesthetist performing intubation is likely to get respiratory secretions on their gloves. Consider wearing a second pair of gloves and remove the outer pair once the ETT is secured.

Determine the position of the ETT without using auscultation—chest wall expansion R=L, End Tidal CO2.

Extrusion is a high-risk procedure for aerosol generation. Avoid coughing and minimise the number of staff in the room.
Public Health England have two videos on donning and doffing PPE for clinicians; search YouTube for:

- COVID-19: Donning of Personal Protective Equipment
- COVID-19: Removal and disposal of Personal Protective Equipment

Women with confirmed COVID-19 and moderate/severe symptoms

- A MDT approach should take place as soon as possible from admission – consultant physician, consultant obstetrician, consultant anaesthetist and midwife in charge; with decision regarding:
  - Appropriate place of care
  - Appropriate fetal monitoring
  - Whether birth should be expedited
- Steroids for fetal lung maturation should be given if indicated
- Investigations – CT chest and chest X-rays should be performed if indicated
- Inform neonatal team early of plans for birth

Postnatal management

- We should endeavour to keep mothers and healthy infants together in the immediate postnatal period (i.e. those infants not requiring neonatal care)
- A risk/benefit discussion with neonatologists and families should be taken to individualise care for more susceptible babies, considering the need to isolate an infected mother and her baby separately (RCPCH guidance is available on https://www.rcpch.ac.uk/resources/covid-19-guidance-paediatric-services#working-in-neonatal-settings)
- Breastfeeding – breast milk was negative for COVID-19 in a case study of six Chinese mothers; however, the close approximation of mother to baby may increase risk of transmission. Discuss risk/benefit with mother (refer to RCOG guidance document for further information)

The RCoA and the Faculty of Intensive Care Medicine websites have regular updates for clinicians on COVID-19 (https://icmanaesthesiacovid-19.org)

There are also quick guides to donning and doffing PPE from Public Health England
Simulations of obstetric emergencies and PPE

Leeds Hospitals have posted some learning points from running obstetric emergency drills in PPE:

- Staff will instinctively rush in to emergencies without donning PPE properly. **We need to slow down, use buddies, make sure the PPE is on correctly and not to leave anyone putting it on alone**

- Having an extra line of communication (e.g. walkie-talkies) between staff in the room and the team outside helps to prioritise who to send in, so not everyone rushes in at once

- Prioritising donning PPE for a senior member of staff will speed their entry into the room, which may be critical, e.g. in shoulder dystocia. ‘Donning in threes’ may help:

  - Time to don PPE in emergency:
    - 2 people buddying up to don PPE with equal time for each:
    - Both ready in 3–4 minutes
    - 3 people buddying up, prioritising the most senior person initially:
    - 1st person ready in 2 minutes

*(Information from @drwij on twitter)*

**Research papers and news articles**

The following are published cases from Wuhan, China. As of March 21st 2020, none had demonstrated evidence of vertical transmission:

1. Case series of nine COVID-19 positive pregnant women; all underwent caesarean sections. All babies were born in good condition (normal Apgars). 6 out of 9 cases were tested: amniotic fluid, cord blood, neonatal throat swabs and breast-milk samples were all negative for COVID-19.


2. Four COVID-19 positive pregnant women, all babies born after 37/40 with reasonable Apgars. All neonates were isolated from their mothers and formula-fed. All babies tested negative for SARS-CoV-2.


3. Case report of a pregnant woman who became unwell; CT showed viral pneumonia. Baby was born via emergency caesarean and separated at birth from the mother. Neonatal COVID-19 was confirmed from swabs at 36 hrs of age, however, placental swabs and cord blood were negative for COVID-19. Vertical transmission as the cause of neonatal infection has not been confirmed.


4. Case study of two pregnant women positive for COVID-19 in Wuhan, China. No evidence of vertical transmission:


Also: Article in the New Yorker: Keeping the coronavirus from infecting health-care workers:


Includes lessons learnt, and experiences from, Singapore and Hong Kong.