NAVODILA RCPCH (UK), 19. 3. 2020

Clinical presentation: Pregnant women, unborn children and neonates
There are a limited number of cases reported to date where pregnant women have contracted COVID-19, all in the late third trimester and nearly all delivered ≤7 (less than or equal to) days after symptom onset; most will only experience mild or moderate cold/flu like symptoms. At present, expert opinion is that the fetus is unlikely to be exposed during pregnancy. Only one case of possible vertical transmission caused by intrauterine infection has been identified as at 13 March 2020.
Transmission of the virus is therefore most likely to occur post birth. Guidance on caring for pregnant women with suspected or confirmed COVID-19 and their babies has been **published and is available here**. Guidance may change as knowledge evolves; you are strongly encouraged to conduct a risk/benefit discussion with neonatologists and families to individualise care in babies that may be more susceptible to COVID-19 infection.

Maternal admissions

- Women with proven or suspected COVID-19 who require admission for midwifery care should be admitted to a dedicated room in the labour suite or directly to an obstetric theatre if immediate emergency management is required.
- The neonatal team should be informed as soon as possible of this admission and the resuscitaire and room equipment should be checked before the mother enters the room.
- Guidance on whether a mother in advanced labour is a potential AGP is currently being sought.
- Commonly used equipment for neonatal resuscitation and stabilisation should be readily available (eg located in disposable grab bags) to avoid taking the full resuscitation trolley into the room unless required.
- A dedicated pulse oximeter should be located on the resuscitaire to avoid moving equipment in and out of the delivery room unnecessarily.
- The appropriate Personal Protective Equipment (PPE) determined locally must be worn by any person entering the room. Follow local guidelines regarding donning and doffing PPE.
- In order to minimise staff exposure, only essential staff should be present in the delivery room/theatre.
- All women with confirmed or suspected COVID-19 should have continuous cardiotocography monitoring in labour.
- Deferred cord clamping is recommended provided there are no other contraindications.
- The baby can dried as normal, while the cord is still intact. Or in the case of a pre term baby, standard thermoregulatory measures including the use of a plastic bag.
- Breastfeeding and formula feeding by the mother is permissible, but mothers should be advised regarding hand washing and wearing a mask is advised while handling the baby.

Neonatal management in labour suite

- A designated member of the neonatal team should be assigned to attend suspected/confirmed COVID-19 deliveries. It is important that the most senior person likely to be required attends in the first instance, to minimise staff exposure. Local units should make their own arrangements for designating staff, but senior involvement is expected.
- PPE should be donned in an adjacent room and the team member should wait outside the delivery room, ready to be called in should the baby require any intervention(s).
- If it is anticipated that the baby will require respiratory support, appropriately skilled neonatal team members should be present at delivery and wearing PPE.
- Neonatal resuscitation/stabilisation should proceed as per current **NLS** / **ARNI** guidance.
- If additional equipment is required, this can be passed to the team by a 'clean' staff member outside the room.
- **Guidance is available** on safe transfers between departments, but neonates should be transferred in a closed incubator. Where possible, all procedures and investigations should be carried out in the single room with a minimal number of staff present.
- There is no evidence to suggest that steroids for fetal lung maturation cause any harm in the context of COVID-19. Steroids should therefore be given to mothers anticipating preterm delivery where indicated and urgent delivery should not be delayed for their administration (as normal practice).
- MgSO4 should be given for neuroprotection of infants < 30 weeks' gestation as per current guidance

Baby born in good condition

- Well babies not requiring medical intervention should remain with their mother in their designated room. **See guidance for more detail.**
- Current guidance is that well babies of COVID-19 positive mothers should only be tested if unwell.
- If the mother needs assistance in caring for her baby this would usually be provided by the attending midwife – when a mother is acutely unwell, an alternative non-quarantined carer/relative should be identified to provide care for the baby at home or in a designated room not in the neonatal unit (NNU). In the latter case the baby should be isolated from their mother.
- Where appropriate, early discharge of the baby with a parent or carer, including safety netting advice should be facilitated. This will require close liaison with community midwifery services.
- PPE should continue to be used according to local guidance.

Baby requiring additional care

- Babies requiring additional care (eg intravenous antibiotics) should be assessed in the labour ward and a decision made as to whether additional care can safely be provided at the mother's bedside. Avoid NNU admission if at all possible and safe.

- Babies requiring admission to the NNU should be assessed in a designated area in the NNU by an appropriately skilled neonatal team member wearing PPE.

Transfer to NNU

- Public Health England has provided **guidance on transfers to other departments**.

Management on NNU

- All staff must adhere to the locally recommended PPE guidelines before entering the isolation room.
- Clinical investigations should be minimised whilst maintaining standards of care. Senior input is recommended when deferring routine investigations and in prioritisation of work. Consider ways to reduce unnecessary investigations – eg use of (point of care testing) POCT.
- Intubation/LISA are particularly high risk and must involve use of appropriate PPE, even in an emergency. In-line suction with endotracheal tubes should be used if possible.
- Where possible use of a video-laryngoscope should be considered for intubation, and the baby kept within the incubator. By reducing proximity to the baby's airway this may help to reduce exposure to the virus. Intubation should only be undertaken by staff with appropriate competencies.
- CPAP and high flow therapies are associated with significant aerolisation and must therefore be also be considered high risk.
- In the absence of evidence, it is reasonable to treat the baby's respiratory illness in the same way as if they were not potentially exposed to COVID-19. The evidence in favour of early intubation is limited to adults and older children.
- All babies requiring respiratory support should be nursed in an incubator.
- All equipment coming out of the isolation room should be cleaned as per Trust COVID-19 cleaning policy
- A register must be kept of all staff entering the room.

Transport

- Limit transfers to a minimum.
- Level 2 units to keep majority of babies as per network escalation policies.
- Neonatal Transport Group are considering guidance.
- Exposure to COVID-19 in itself is not a reason to transfer.

Testing of babies

- Well babies of COVID-19 positive mothers should be isolated with their mother, sent home asap and only tested if unwell.
- Pending further guidance any baby of a confirmed COVID-19 positive mother who requires to be admitted to NNU should be considered potentially infectious for at least 14 days. It is presently not clear whether negative swabs before 14 days can be considered definitive, but symptomatic babies should be tested at the first opportunity.

Breastfeeding

- Breastfeeding will be encouraged through supporting mothers who have been separated from their baby to express milk (EBM). Mothers should have a designated breast pump for exclusive use and local infection control policies should be consulted in the cleansing of this.
- It is not yet clear whether COVID-19 can be transferred via breast milk.
- Other coronaviruses are destroyed by pasteurisation but there is no evidence to inform whether COVID-19 (if present) would be similarly destroyed.
- Further information is available from in the **European Milk Bank Association position statement**.

Newborn screening

- Newborn Infant Physical Examination (NIPE) – where possible this should be completed in hospital either by a NIPE trained midwife who is caring for the mother, or other NIPE practitioner once a negative result has been received. The timing/location of the NIPE may need to be individualised where there has been an early hospital discharge before COVID-19 screening results for the baby are known.
- Audiology screening – this should be deferred and discussed with the Newborn Hearing Screeners and a follow up plan put in place prior to hospital discharge.

Managing neonatal unit capacity

- It is anticipated that NNU capacity may become problematic either due to cot capacity or staff availability. Individual units should have agreed staffing plans when optimal staffing plans cannot be achieved.
- Cohorting of confirmed positive cases may be necessary and should follow local guidance.

Parents and visitors to NNU

- COVID-19 positive parents should not be able to visit their baby on the NNU.
- Parents who have been screened for COVID-19, for whatever reason, should not be permitted to visit their baby until they have been confirmed negative.
- No other visitors (including siblings) should be allowed to visit infants in NNUs (all areas), except under exceptional circumstances, to be discussed with local infection control.
- NHS England has produced **guidance on visitors to inpatients, outpatients and diagnostics**.
- Visits from other NHS staff and personnel to the NNU should be kept to a minimum – consider opportunities for remote meetings.
- Units should seek to mitigate loss of family contact with video techniques.

Neonatal discharge and follow up

- All measures aimed at early discharge from the NNU should be upscaled and visits by community liaison staff to the NNU kept to a minimum.
- Consider telephone / video consultations for neonatal follow up, where possible, to avoid vulnerable infants with chronic lung disease, etc., attending clinics.
- Advice should be provided to parents of those infants at increased risk (e.g. immunocompromised, chronic lung disease, cardiac disease) about reducing risk of infection (reduce social contact, handwashing) and interventions aimed at preventing other diseases (e.g. immunisations) should be optimised.
- Parents who telephone NNUs for help should receive experienced advice, with the aim of minimising direct contact with either neonatal or paediatric services.

Staff wellbeing

- There is no need for staff to self-isolate after looking after a suspected or confirmed case of COVID-19 if correct PPE precautions have been taken.
- Any staff concerns regarding contact with a possible case should be discussed with local occupational health departments.
- If/when redeployment of staff is necessary, this must be agreed at senior level and staff appropriately supervised and supported. See supportive doctors guidance and **advice from HEE**.