

**COVID19 Guidance: Clinical Advice**

**MATERNAL CRITICAL CARE PROVISION**

Version History

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| Version | Date | Summary of changes |
| V1.0 | 21/04/2020 |  |
| V2.0 |  |  |
| V3.0 |  |  |
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Further Information

For more information on COVID-19 please see the COVID-19 guidance section of our website, www.gov.scot/coronavirus

**Situation**

As part of the national response to COVID 19 and the likely reduced critical care capacity for obstetric patients, maternity units should implement measures to reduce obstetric related critical care admission and maximize their ability to look after sicker obstetric patients.

**Background - Obstetric/ Maternity Pathway**

Pregnant women will get COVID 19 in the same way as the rest of the population.  Most pregnant women will already be under the care of maternity professionals.   Maternity care operates at both community and acute levels, and occupies a distinct place in the healthcare landscape.  Pregnant women will need some distinct advice and care in relation to coronavirus because of the unique physiological changes of pregnancy.

**Current Picture**

Few pregnant women in Scotland have tested positive for COVID 19 so far.

ICNARC COVID 19 reports suggest that 2-4% of pregnant or recently pregnant women will require ICU care. In addition, it is estimated that 2.21/1000 maternities (NMPA) require critical care for all causes.

There were 51,308 births in Scotland in 2018 which, using above rates of admission would equate to approx. 112 ICU admissions - approximately 10 obstetric ICU admissions per month in Scotland based on normal obstetric activity.

ICNARC COVID 19 reports:

* 23rd March - 2 recently pregnant out of 53 females = 3.7% females
* 27th March - 1 pregnant and 4 recently pregnant out of 216 females = 2% of females, and 0.6% of all ITU admissions
* 3rd April - 2 currently pregnant and 9 recently pregnant out of 565 females (2%) and 2,203 total patients (0.5%). Only 3 of the 11 are ventilated
* 10th April – 10 currently pregnant, 13 recently pregnant out of 1005 females (2.3%), 3882 total patients. Only 6 are ventilated
* 17th April – 16 currently pregnant, 21 recently pregnant out of 1486 females (2.5%) and of 5577 total patients in ICU (0.6%). Only 9 out of group are ventilated

ICNARC reports are published weekly at <https://www.icnarc.org/Search?search-query=Covid19>

Most admissions were for major obstetric haemorrhage or other direct obstetric reasons e.g. pre eclampsia. Key features;

* Short stays - 14.8% same day discharge, 56.6% within 2 days, only 5.6% had greater than 7 days in ICU.

Separate guidance has been issued to all obstetric units to attempt to prevent these admissions for obstetric indications during this pandemic period.

**Respiratory Symptoms**

NHS 24 will provide a single point of entry for all adults, including pregnant women, with respiratory symptoms via the national 111 phone line.  NHS 24 will use the maternity pathway thereafter to triage pregnant women~~.~~ The pathway describes how to assess pregnant women to determine their route into care.  In all cases, pregnant women experiencing symptoms indicative of COVID-19 should additionally be advised to inform their midwife as soon as possible, and ahead of their next scheduled antenatal appointment.  In all cases where symptomatic women are in labour or have an additional obstetric problem eg vaginal bleeding, they should be referred to their local maternity unit for combined assessment by an obstetrician and physician in an obstetric unit with isolation facility.

Those with no obstetric issues but worsening respiratory symptoms, breathlessness or risk factors for deterioration should be assessed in person and in consultation with an obstetrician. Their point of assessment will be Board specific, either through the COVID assessment centre or the local Maternity Triage unit. In either location obstetric input must be available.

**There are pregnancy specific respiratory symptom criteria for admission to secondary care which reflect the differing physiology of pregnancy**. ALL pregnant women assessed and/or admitted with respiratory symptoms must be seen or discussed with an obstetrician and have daily physician and obstetric review irrespective of location of secondary care – medical or obstetric ward.



**Critical Care Admissions**

From the NMPA, and a previous ICNARC report (2009-12), we know that the vast majority of ICU admissions are around time of delivery –

* 38.8% day of delivery
* 17.6% up to 1 week after

The majority of admissions are for major obstetric haemorrhage. Crucially, these admissions tend to be short –

* 14.8% same day discharge
* 56.6% within 2 days
* Only 5.6% had greater than 7 days in ICU tallying with real life experience, patients are in general extubated early/bed and breakfast concept.

**Pandemic Revisions**

In addition, each obstetric unit has been asked to consider whocould be looked after in an obstetric HDU setting and what would be required to achieve this :

* Equipment
* Upskilling of staff

This will depend on the level of obstetric unit. Level 3 maternity units will be better placed to provide this care than level 2 units.

Conditions to consider are:

* Obstetric haemorrhage
* Hypertensive disorders

Sepsis (not COVID) – unless requiring inotropes

**General principles while patients are in maternity**

* COVID 19 can present in multiple ways – acute abdomen, neurologically, cardiac – high index of suspicion, recognise and test
* Aim for euvolaemia
* Invasive monitoring early to aid vasopressor titration, ABG monitoring
* Consider delivery, especially if worsening respiratory but also

consider mode of delivery: ability to cope with labour even if epidural

* Use obs MEWS for monitoring
* Oxygen saturation and oxygen requirement important trigger for referral to ICU - aim for target saturations of 92-96% and prescribe oxygen to limit waste**. ICU referral trigger of 92-95% sats requiring up to 40% FM O2 to maintain sats for ICU referral**
* Higher than average DVT/PE/CVA being reported. Pregnant women are already hypercoagulable so stringent adherence to obstetric LMWH policies is required.

D dimer not useful in pregnancy as a marker for thrombosis.

* RR unreliable, patients don’t tend feel breathless /normal pregnancy do
* If for ventilation, may need to deliver to aid proning (main stay of treatment) and difficult above certain gestations – case by case MDT meeting

**Pregnant women requiring ICU admission**

**QSOFA is not validated in pregnancy and must not be used**

**Early discussion with ICU about pregnant women whom you think may require ICU admission is essential.**

All will require MDT discussion – minimum group should consist of consultant in ICU, obstetrician and obstetric anaesthetist.

Whilst in ICU there must be MDT ward rounds, clear lines of communication and escalation

* Requiring advanced respiratory support. **If requiring ventilation, strongly consider delivery as proning is a main stay of treatment and this is difficult to achieve in later gestations. This decision needs to be individualised and MDT decision. Delivery will also aid ventilation by relieving pregnancy specific respiratory changes.**
* Requiring inotropes or multiple vasopressors
* Airway issues – post arrest/ anaphylaxis
* Renal impairment requiring haemofiltration
* CNS – CVA, CVST,
* Multi Organ Failure irrespective of cause
* Ongoing resuscitation requirement

**RECOMMENDATIONS**

**ANTENATALLY**

* To be proactive in monitoring and managing anaemia so that women are not anaemic upon admission
* When discussing management of the third stage antenatally do this within context of current situation. Endorse active management for all.
* IOL only if medically indicated, promote home/ outpatient induction with balloon catheter. (Induction of labour lit. just published review <https://www.rcm.org.uk/rcm-professional-clinical-guidance-briefings/>)
* Plan for elective delivery of high-risk woman with consultant MDT

**INTRAPARTUM**

**Midwifery**

* Be mindful of the impact and value of proactive vigilant one to one midwifery care - increases physiological birth, improves outcomes and reduces interventions. Also improves experience and facilitates early discharge (Sandall et al 2014)
* Support regular risk assessment, monitoring of progress and CTG review
* Support and encourage midwifery that facilitates progress through positioning and relaxation and hydration

**Midwifery and Obstetrics**

* PPHrisk assess on admission to labour ward and regularly throughout labour
* Senior review of CTGs, in utero resuscitation guidelines liberally used in case of fetal bradycardias with aim to reverse or improve fetal distress allowing time for regional techniques rather than GA.
* Active management of third stage for everyone with all forms of delivery
* Follow PPH protocol early (ensure staff are up to date) – bimanual compression, stepwise uterotonics, early tranexamic acid
* Utilise point of care testing – haemacue, blood gas analysers and ROTEM if available
* Keep patient warm
* Encourage use of bakri balloons
* Consider blood earlier – liberal transfusion triggers

**Postnatal**

Strongly encourage long acting contraception to prevent short interval pregnancies

Liberal use of intravenous iron postnatally

 **Upskilling requirements**

* Recognition of deteriorating patient
* Performing ECG and basic interpretation
* Care of Arterial lines, blood sampling and basic ABG interpretation
* Care of CVC lines, blood sampling, drug delivery and removal
* CVS support – single vasopressors

**Upskilling Solutions/Resources**

* Highlight educational material already released into public domain : <https://learn.nes.nhs.scot/28267/coronavirus-covid-19/assessment-and-care-of-people-with-covid-19>
* Maternity REACTs teaching material <https://learn.nes.nhs.scot/28189/coronavirus-covid-19/assessment-and-care-of-people-with-covid-19/midwifery-and-obstetrics>
* PROMPT scenarios
* Augmented by practice development /education team/obstetric anesthetists
* Daily refresher sessions and small group teaching on each unit

Using the above resources and additional focus on the COVID patient requirements.

Focus on midwives already with some knowledge of EMC.