STANDARD OPERATING PROCEDURE (SOP)

Emergency Theatre plan for COVID-19 (suspected or confirmed) Obstetric patients

MANDATORY

SOP NUMBER: DATE: 01/04/2020

AUTHORS: Dr Fleur Roberts Obstetric Anaesthesia Clinical Lead,
Dr Mel Woolnough Consultant Anaesthetist
Dr Cat Meer Consultant Anaesthetist
Leanne Likaj Matron for Labour wards
Dr Porus Bustani Neonatology Clinical Lead

REVIEW DATE: 01/05/2020

MANDATORY	
OBJECTIVES	• To define a safe process for provision of emergency obstetric surgery for suspected or confirmed COVID-19 patients.
SCOPE	• Emergency and urgent COVID-19 suspected or confirmed cases at Sheffield Teaching Hospitals NHS trust
TARGET GROUP	All obstetric anaesthetists, obstetricians, midwives, Obstetric theatre staff, neonatologists and SCBU staff
EVIDENCE TO SUPPORT PROCEDURE	COVID-19 IPC guidance – 27th March 2020 RCOG COVID-19 guidelines March 28th 2020 OAA joint COVID-19 guidance March 16th / 20th 2020

SEQUENCE OF PROCEDURE

General Preoperative theatre process

- Theatre 1 Jessops is designated for confirmed or suspected COVID 19 obstetric emergency or elective cases.
- Clarify at team brief which theatre is being used for elective cases in **non** COVID 19 patients.
- LW Coordinator to alert the following people when a woman confirmed or suspected with COVID-19 is admitted at shift handovers;

  Consultant Obstetrician and Obstetric trainee
  Consultant Anaesthetist and Anaesthetic trainee
  Theatre coordinator Consultant Neonatologist SCBU coordinator

Zones

- RED ZONE (dirty); all of theatre 1
- YELLOW ZONE (semi-clean); baby resuscitation room, half of the anaesthetic room, half of sluice room (used for doffing)
- GREEN ZONE (clean); area around scrub sink, second half of anaesthetic room and second half of sluice room

Equipment

- All equipment for theatre 1 will be stored in clean zone and available via the clean runner
- Resuscitaire will be positioned in the Baby resuscitation room between theatre 1 and 2 in the yellow zone
- Specific COVID 19 simplified wipe able trolleys of basic equipment eg tracheal intubation, spinal anaesthesia, bladder catheterisation will be available in the red zone.
- A clear drape is placed over the CTG machine so the printed paper remains clean.
- Prepare all anaesthetic and surgical equipment and drugs and place in theatre **before** patient sent for
- The anaesthetic machine check should confirm the presence of a HME filter at the patient end of the breathing system

Before patient sent for the following must occur;

- **Team brief** outside theatre 1 for all personnel, with designated roles; red, yellow and green roles
- Ideal theatre personnel allocated to zones:
- RED ZONE: scrub nurse, surgeon, surgical assistant, surgical runner, midwife, anaesthetist 1 and Operating Department Practitioner (ODP)
- YELLOW ZONE: anaesthetist 2 in who must wear appropriate PPE
- GREEN ZONE: clean runner wearing surgical mask who must be an experienced nurse/ODP able to perform arterial blood gas (ABG), ROTEM etc.
- Names of all staff involved should be written on white board in theatre / stickers can be used to identify non sterile team
- If definite GA (general anaesthesia) or emergency (Category 1 or 2 caesarean section) AGP PPE to be worn by **ALL staff in theatre**
- **Risk assess likelihood of an AGP** (Aerosol generating procedure) decision on level of PPE ie use of FFP3 mask based on clinical and patient considerations for all other surgical procedures.
- If GA only essential staff in theatre during induction, intubation and extubation ie: Intubating anaesthetist, ODP and one other member of staff
- Personnel in red zone to don PPE before patient arrives: use best practice and buddy system
- Label theatre doors with poster indicating **IN USE for COVID** case to avoid accidental entry
- No staff should enter or exit theatre until the case is completed. If additional staff are required they should not enter the theatre until they are in appropriate PPE

Before woman leaves labour ward;

- Ensure woman is wearing a surgical facemask
- Ensure the woman is cannulated and it is working
- Ensure the woman is catheterised
- Anaesthetic pre-assessment if not already performed by transfer anaesthetist
- Copy of consent form to accompany the woman and placed in a clear plastic bag to avoid contamination in theatre
- Birth partner to remain in labour ward room
- **Information to have ready for theatre: Allergy status, G&S status, Blood results, Drugs in labour: LMWH, ranitidine, analgesics when last given**

Transfer to theatre;

- Theatre to communicate to labour ward when they are ready for the patient
- Patient transferred to theatre by staff wearing appropriate PPE, accompanied by clean runners to facilitate door opening, corridor clearing.

On woman's arrival to theatre;

- Woman to go directly into Theatre 1 via first set of double doors accompanied by staff in appropriate PPE
- NO birth partner allowed in theatre complex with patient
- Perform obstetric WHO check list (laminated copy on white board) will need a copy of consent form for this
- Transporting bed to be re-made outside theatre, using appropriate cleaning products available there, by maternity staff in PPE
- Patient Midwife to remove PPE from LW room, wash and then don non-sterile PPE with three pairs of gloves.
- Midwife to auscultate fetal heart with CTG machine then remove a pair of non-sterile gloves

Donning

- This will be performed in the scrub area of theatre 1. Don as per STH guideline: see posters
- **Order of donning**:

1) The ODP and circulator who will be **Non-Sterile PPE** don in either the corridor or in theatre, they buddy each other. Simultaneously the scrub nurse and anaesthetist who will be **Sterile PPE** don in the green scrub area. They are buddied and checked by the ODP and circulator.

2)The 2 surgeons who will be **Sterile PPE** don in the scrub area. The midwife dons in the corridor and checked by the green area person.

3) The second anaesthetist **Non-Sterile PPE** dons in the corridor or scrub area.

4) The neonatal team who are **Non-Sterile PPE** can don in the corridor or the neonatal resuscitation room and buddy each other before woman arrives (if urgent neonatal team can don in baby resus room concurrently as sterile PPE team (2)

- **Anaesthetist and ODP to wear third pair of a size bigger blue gloves and use the Yorkshire "Bib" apron covering the neck area if performing GA.**

Conduct of regional anaesthesia

- Neuro-axial anaesthesia should be first choice mode of anaesthesia
- The best skilled anaesthetist to perform spinal
- Perform spinal anaesthesia in sterile PPE to keep on throughout case (can change outer gloves if soiled)
- Have intraoperative IV analgesic drugs ready, try and avoid conversion to GA intraoperatively and ensure patient informed of reasons why.
- Epidural top up as per normal practice

Conduct of general anaesthesia : AGP HIGH RISK

- Tracheal intubation of the patient with COVID-19 is a high-risk procedure for staff, irrespective of the clinical severity of disease.
- Limit staff present (when possible) at tracheal intubation: one intubator; one assistant; and one to administer drugs and monitor the patient.
- All other staff to leave theatre via doffing area (they will have to re don when return if GA mid op and not wearing FFP3 masks already)
- Use modified COVID 19 GA checklist along with the I AM HAPPY checklist.
- The best skilled airway manager present should manage the airway to maximise the first pass success.
- Use of video-laryngoscope first line is recommended
- A second generation supraglottic airway device for airway rescue.
- Place a HME filter at the end of the endotracheal tube before intubation, attach catheter mount to this.
- Do not face mask ventilate unless needed, and use a 2-person, low flow 6 litres, low pressure technique if needed eg: hypoxia / bradycardia.
- Confirming endotracheal tube position is difficult wearing PPE; capnography and equal chest movement.
- Inflate the tracheal tube cuff to seal the airway before starting ventilation.
- Avoid circuit disconnection as aerosol risk - push twist all connections.
- Use a standard OAA/ DAS failed tracheal intubation algorithm with a cognitive aid if difficulty arises.
- Anaesthetist and ODP to remove outer “Yorkshire bib” apron and blue gloves immediately after patient intubated and attached to sealed circuit.
- Alcohol gel remaining gloves
- Discard disposable equipment safely after use. Decontaminate reusable equipment fully and according to manufacturer’s instructions.
- If possible wait 10 minutes before other staff enter theatre eg: category 3 or 4 LSCS

Surgery

- WHO checklist Time Out before surgery starts
- Surgery to be performed by most skilled operator
- Any extra equipment that is required will be passed from the runner in the green zone onto a trolley in the yellow (anaesthetic room) and into the red zone
- The individual in the yellow zone must wipe the trolley with Tristel after each use

- Single use and disposable kit should be used where possible

Blood transfusion and Cell salvage

- Transfusion products will come from porter, to clean runner, to staff within the yellow zone to then be checked, the box should stay outside the red zone.
- Cell salvage can be considered for high risk of bleeding cases eg: placenta praevia / AIP /Abruption/LSCS at full dilatation/ Laparotomy for bleeding / uterine rupture. Set up with giving set already attached to reinfusion bag to avoid contamination. This is important considering blood conservation strategies to plan for potential shortages.

Neonate

- Delayed cord clamping DCC should be targeted as usual.
- Trans-warmer mattress will not be required between mother's legs for premature babies
- Aim for 1 minute DCC if the baby is breathing and crying
- If no signs of life cut the cord and transfer to the cot and wheel cot to neonatal resus room in the yellow zone.
- The neonatologist to carry baby to resuscitaire. Midwife to remain in theatre.
- Neonatal team guidance for resuscitation outside of the scope this document
- If no resus required in a term baby it can remain in the cot in theatre. Neonatal team to be informed they are no longer required.
- Cord clamp to be applied and surgical clamp to be removed from cord.
- Baby to be well wrapped in warm towels and a hat applied.
- Not for skin to skin as no partner in theatre
- Temperature to be checked at 15, 30 and 60 minutes
- Midwife on labour ward to be asked via phone to generate baby number and baby wristbands and bring to clean runner to be handed to midwife
- Vitamin K to be administered to the baby in theatre

Extubation if GA

- The bed prepared with clean bedding, 2 slide sheets and incopad is pushed into theatre.
- Patient is transferred onto the bed under anaesthesia (avoid coughing at this point)
- Extubation is potentially a risk for droplet contamination and AGP, so need to minimise coughing and spread eg: **consider using a clear plastic drape over the patients face and chest**
- After extubation ensure the patient immediately has the facemask applied
- Once airway irritability subsided then can change to 6 litres oxygen via Hudson mask
- Only essential staff to remain in theatre during extubation
- Once awake patient should be asked to clean hands with alcohol gel and wear a surgical facemask

Documentation

Documentation should be where possible performed by a scribe (clean runner) who is in the clean

zone and will record appropriate entries: laminated wipeable charts eg: WHO checklist, and anaesthetic charts can be used in theatre with disposable pens provided.

Doffing

- Staff to doff into biohazard bags in sluice area as per safe doffing guidance with buddy as high risk of contamination.
  Staff leave by designated exit via the sluice door onto the corridor

Postoperative theatre process

Recovery

- Recovery should occur within theatre in the red zone
- Wait for a minimum of 20 minutes in theatre
- Two PACU staff to remain with the woman until recovered when she can be transferred back to the return to designated COVID-19 room
- Anaesthetist to remain with patient if Level 2/3 critical care required
-

Transfer of the woman back to labour ward

As before to transfer back to labour ward accompanied by staff members wearing appropriate PPE and a cleaner runner to facilitate clearing corridor and opening doors.

Decontamination and Air Changes

- The theatre is left to stand after vacation for 20 mins then terminally cleaned.
- There is no requirement to have a quarantine zone around theatre when this occurs
- Environmental decontamination of equipment will follow AMBER clean
- Neutral detergent, then chlorine based cleaners should be used on all surfaces
- Table decontamination in theatre with neutral detergent followed by chlorine based disinfectant
- Particular care should be taken on touch interfaces on the anaesthetic machine
- 70% alcohol solutions should be used on patient care equipment, alternatively it may be disposed of if not amenable to such cleaning e.g. blood pressure cuff
- Specifically, re-usable bottles of Chlorhexidine spray 0.5%, alcohol gel bottles and Ethyl-chloride spray bottles in the red zone must be wiped down

Death in theatre

- Leave airway and HME filter in place
- All body handlers adopt PPE for aerosol generating procedures
- After placing the patient in a body bag the bag exterior and trolley should be decontaminated

- Those removing the patient from theatre should doff their PPE prior to leaving the contaminated area

Welfare

These cases are likely to be long and emotionally demanding. Staff should be given appropriate time to recover and recharge before further duties. Urgent further cases may be best performed by a new team if possible.

 # TEAM NHS

T Take Care of each other

E Enjoyment

A Activity

M Make time to talk

N News feed

H Healthy food

S Sleep

MANDATORY		
Developed By:	AUTHOR TITLE (NAME)	JOB TITLE
	Dr Fleur Roberts Dr Mel Woolnough Dr Cat Meer Leanne Likaj Louise Singh Porus Bustani	Consultant Anaesthetist Consultant Anaesthetist Consultant Anaesthetist Matron Postnatal wards Obstetric Theatres Consultant Neonatologist
	APPROVAL GROUP NAME	DATE
Approved By:		

LINKS TO REFERENCES:

These joint guidelines from OAA/ RCOA/ICM were released March 16th 2020:

https://static1.squarespace.com/static/5e6613a1dc75b87df82b78e1/t/5e7201706f15503e9ebac31f/1584529777396/OAA-RCoA-COVID-19-guidance_16.03.20.pdf

OAA update on PPE 20th March 2020

https://static1.squarespace.com/static/5e6613a1dc75b87df82b78e1/t/5e74a80a1ff9b93077d05e4e/1584703502911/PPE-infographic-20.03.20.pdf

This government guideline for infection control and prevention provides guidance to PPE states for different roles and procedures released on March 27th 2020

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876577/Infection_prevention_and_control_guidance_for_pandemic_coronavirus.pdf

RCOG Guidelines for all areas from 28th March 2020:

https://www.rcog.org.uk/globalassets/documents/guidelines/2020-03-28-covid19-pregnancy-guidance.pdf