GUIDELINES ON SURGICAL MANAGEMENT OF SUSPECTED OR CONFIRMED COVID-19

1. Introduction

Due to the dynamic nature of the pandemic situation, recommendations are refined over time, based on the latest evidence and guidelines.

2. General Measures

2.1 Screening

Screening shall be done at all entry points (clinic or patient admission centre) using Mysejahtera app/SJ tracing.

2.2 History taking

- Patient can be categorized as below:
  - Confirmed COVID-19
  - Suspected COVID-19/ Probable COVID-19**/** Person Under Surveillance (PUS)**/**Severe Acute Respiratory Infection (SARI) patient
- Management of the patient undergoing surgery, shall be carried out according to patient's category and urgency of the surgery.

2.3 COVID-19 Testing

- COVID-19 testing should be carried out on all patients undergoing surgery.
- Patients scheduled for elective surgery cases should do COVID-19 testing within 24-36 hours of surgery and should limit their movements.
- The testing strategies is divided into the following:
  a. Patients requiring general anaesthesia and or AGP: *RTK-Ag professional.
  b. Saliva RTK-Ag for patients undergoing surgery under local anaesthesia or non-AGP surgery).

  *RTK-Ag professional is a point-of-care testing conducted by the healthcare professionals using Nasopharyngeal Swab (NPS) or Oropharyngeal Swab (OPS).

2.4 COVID-19 Repeat Screening for Hospitalized Patients

- Patients who have been in the ward and are required to undergo surgery are suggested to repeat RTK-Ag testing after 5 days from admission **OR** earlier in the following scenarios:
  I. When patient develop new onset of symptoms such as ILI or SARI
  II. New evidence of epidemiological link (e.g. household contact COVID-19 positive)

III. Outbreak in the unit in the hospital
IV. Plan of referral/transfer of patient to other hospital for operation purposes.

2.5 Measures to be taken following admission

2.5.1 Infection Prevention and Control (IPC)

a. The number of staffs managing a suspected or confirmed COVID-19 patient should be kept to a minimum.
b. Suspected or confirmed COVID-19 patients should wear a properly fitted surgical mask.
c. In cases requiring surgical intervention, a medical officer or a specialist should be involved, and all staffs must use appropriate PPE based on the risk exposure as stated in the guidelines.
d. Body fluids, tissues, mask and other consumables in contact with the patient should be disposed as per current available recommendations (as for Retroviral Disease patients).
e. The operating theatre should be cleaned as per biohazard based on current available protocols.

2.5.2 Surgical Team

a. All members providing care to suspected or confirmed COVID-19 patient shall be optimally trained in using PPE, sample collection and packaging. (Refer to Annex 8 on Infection Prevention and Control Measures).
b. The number of staff shall be kept to a minimum.

2.6 Anaesthesia

a. **Choice of anaesthesia:** Where applicable, regional anaesthesia is preferred.
b. Specific biohazard measures pertaining to SARS-COV-2 shall be adhered to during and post procedure.
c. **Intubation and extubation**: Appropriate PPE shall be used.

2.7 Designated Area for Suspected and Confirmed COVID-19 Patients

a. Suspected / Probable / PUS patients should be placed at a dedicated area with recommended distancing (at least 2 m) to minimize exposure to other patients.
b. Confirmed COVID-19 cases should be isolated in a dedicated area and should not be mixed with suspected or probable cases.
c. Where available, ventilated COVID-19 patients should be managed in a negative pressure room.

2.8 Operation Theatre

a. All hospitals should have a dedicated OT and ICU for COVID-19 patients.
b. Where available surgery is to be done in a negative pressure ventilation system.

3. Pre-Operative Management

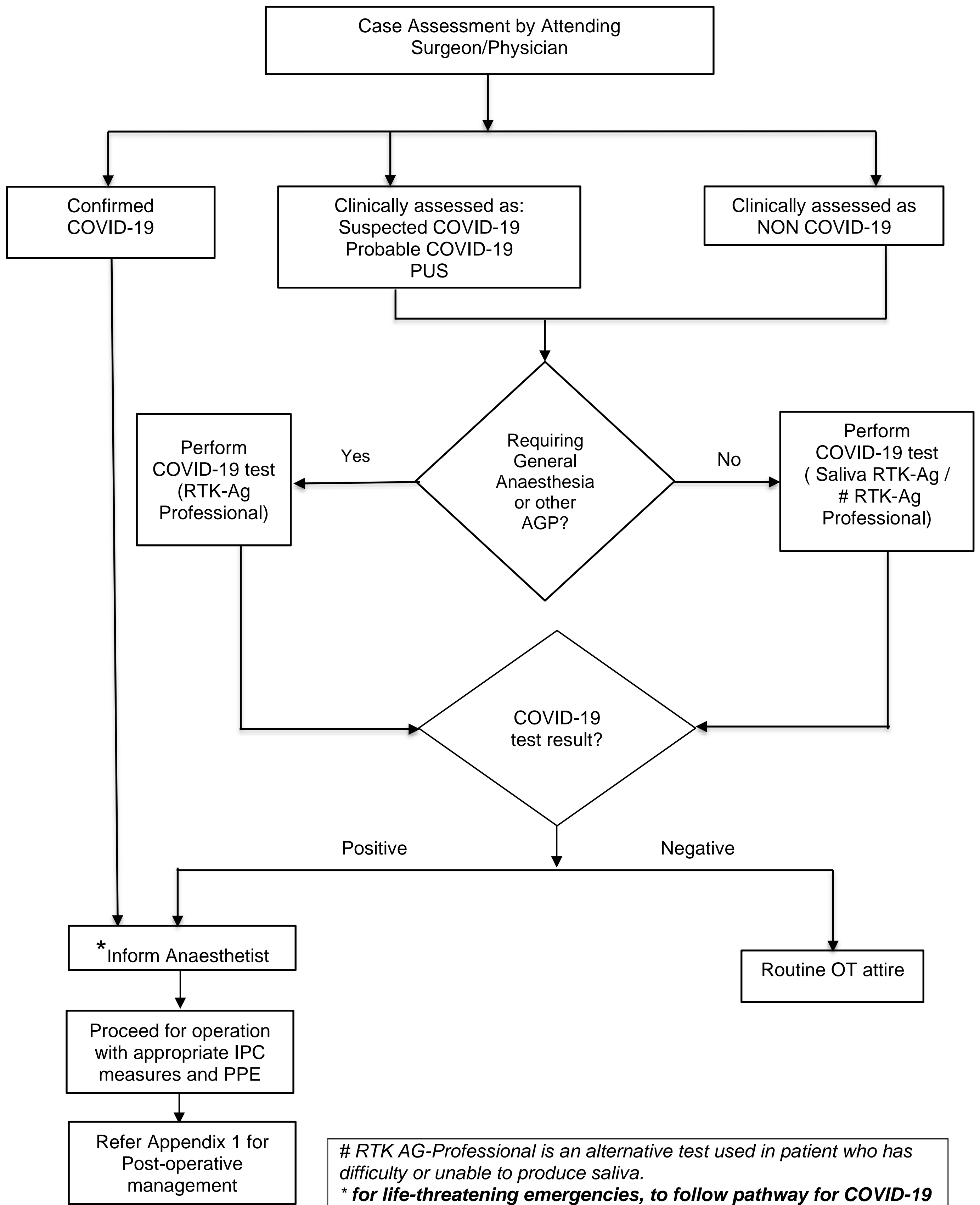
3.1 Acute Emergency and Emergency Operation

a. Attending Surgeon/Physician shall conduct case assessment.
b. For **Confirmed / Suspected / Probable COVID-19 or PUS / SARI** patients, operation shall proceed with appropriate IPC measures and all staff involved should use appropriate PPE as indicated, at dedicated COVID-19 operation theatre.
c. Suspected / Probable COVID-19 or PUS / SARI patients requiring **general anaesthesia or AGP** are required to undergo COVID-19 RTK-Ag professional. Only life-threatening emergency shall proceed without waiting for the COVID-19 test result and all staff involved should use appropriate PPE as indicated. Other emergency cases should have RTK Ag results before OT.
d. For patients undergoing procedure under local anaesthesia and not requiring AGP, Saliva RTK-Ag test can be used and proceed with the procedure based on the test result.

3.2 Urgent and Semi-urgent Operation

a. Attending Surgeon/Physician shall conduct case assessment.
b. Patients requiring general anaesthesia or AGP are required to undergo COVID-19 RTK-Ag professional.
c. Patients undergoing procedure under local anaesthesia and not requiring AGP, Saliva RTK-Ag can be used for testing.
d. Proceed with the procedure once test result is available. For life threatening cases, proceed with surgery without waiting for result of test
e. For confirmed COVID-19 patient, operation shall proceed with appropriate IPC measures and all staff involved should use appropriate PPE as indicated.

Flow Chart for the Surgical Management of Acute Emergency/ Emergency/ Urgent/ Semi Urgent Operation in Suspected or Confirmed COVID-19 Patients

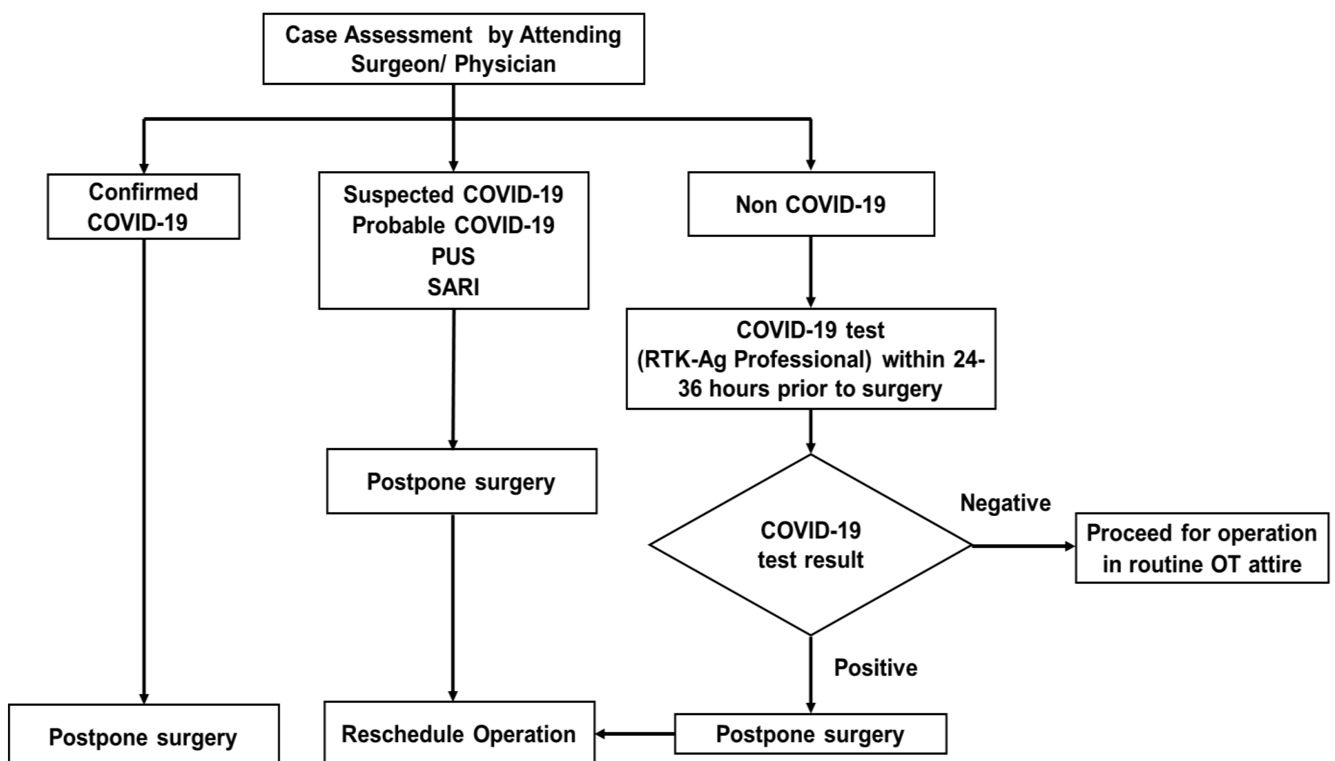


 # RTK AG-Professional is an alternative test used in patient who has difficulty or unable to produce saliva.
**** for life-threatening emergencies, to follow pathway for COVID-19 positive patients while waiting for confirmed COVID-19 status***

3.3 Elective Surgery

a. For Confirmed COVID-19 patient, operation shall be postponed and referred for COVID-19 management and rescheduled after patient's recovery.
b. For Suspected COVID-19 / Probable COVID-19 / PUS / SARI patients, operation shall be postponed and rescheduled.
c. For patients requiring AGP, they are required to undergo RTK-Ag test if the test has not been performed. It is recommended to be performed within 24-36 hours prior to the surgery or on the spot, upon admission. If the test result is negative, operation shall proceed in the usual manner and personnel shall use the routine OT attire.

Flow Chart for the Surgical Management of Elective Operation in Suspected or Confirmed COVID-19 Patient



4. Personal Protective Equipment

a. All personnel involved during the procedure / surgery should don the appropriate PPE. Personnel performing operation on Confirmed COVID-19/Suspected/Probable/PUS/SARI should always don appropriate PPE as the following:

Recommended Personal Protective Equipment
1. PAPR or Fit-tested N95 respirator 2. Coverall or Isolation gown (fluid repellent long-sleeved gown) 3. Eye Protection (face shield/ goggle) 4. Sterile surgical gloves 5. OT cap (when wearing isolation gown) 6. Followed by sterile OT gown

b. All personnel should strictly adhere to proper procedure of donning and doffing according to Policies and Procedures on Infection Prevention and Control.

5. Post–Operative Management

5.1 Confirmed COVID-19 Patient

a. Patients shall be extubated and monitored in Operation Theatre before transferred to the ward.
b. If patient is transferred to ICU, they shall be placed in a dedicated critical care area.

5.2 Suspected/ Probable/ PUS/ SARI

a. After the completion of surgery, patient shall be extubated in the same operation room or dedicated airborne infection isolation room (AIIR) / negative pressure room. Patient shall be transferred to the dedicated ward and COVID-19 result shall be traced. If the result is positive, patient shall be transferred to dedicated COVID-19 ward for further management. For Suspected COVID-19 / Probable COVID-

19 / PUS/SARI patient, the requirement for isolation shall be as per national protocol.

b. If the patient requires ICU admission, extubation shall be done in ICU based on patient's condition. Patient shall be isolated and COVID-19 result shall be traced. If the result is positive, patient shall be transferred to dedicated COVID-19 ICU for further management. For Suspected COVID-19 / Probable COVID-19 / PUS/SARI patient, isolation shall be as per hospital protocol.

6. Management of Surgical in Obstetric Patients

6.1 Elective caesarean sections

a. The indication of performing an **elective caesarean section should be as per routine obstetric indications** while COVID-19 infection per se is not an indication for a caesarean section.

b. As per the updated MOH guidelines, **all patients undergoing an elective caesarean should have an RTK-antigen professional performed 24-36 hours** before the procedure as described above (page 1, annex 22).

c. Although it is best to delay an elective delivery and surgery for COVID-19 positive mothers, the management and **optimal timing of delivery** of COVID-19 positive patients, suspected, probable, PUS and SARI **should be individualized** after discussion with a senior obstetrician.

d. **Elective caesarean section** should ideally be **delayed between 7-10 days** if feasible while regional anesthesia is preferred unless contraindicated. Seek an anaesthetic review and assessment before the caesarean section.

e. Adhere to IPC measures and PPE recommendations if the elective surgery is obstetrically indicated within 7-10 days of confirmation while repeated COVID-19 RTK-Ag testing is not recommended.

f. The need for a **COVID-19 PCR prior to an elective caesarean section should be individualized** based on the clinical suspicion and to consult a specialist if unsure.

6.2 Emergency caesarean sections

a. As per the MOH guidelines, an **RTK-antigen professional** is recommended for patients undergoing **emergency caesarean sections**, especially for **CS category 3 and 4*.

b. However, for *****CS category 1*** where there is immediate threat to the life of the mother of the fetus and ****CS category 2*** caesarean sections where there is maternal or fetal compromise, the **caesarean section should be performed without undue delay associated** with the turn over time of RTK-Ag results. **Adhere to IPC measures and PPE recommendations** since the RTK-Ag results are unavailable and consult a senior obstetrician as well as discuss with an anaesthetist if unsure.

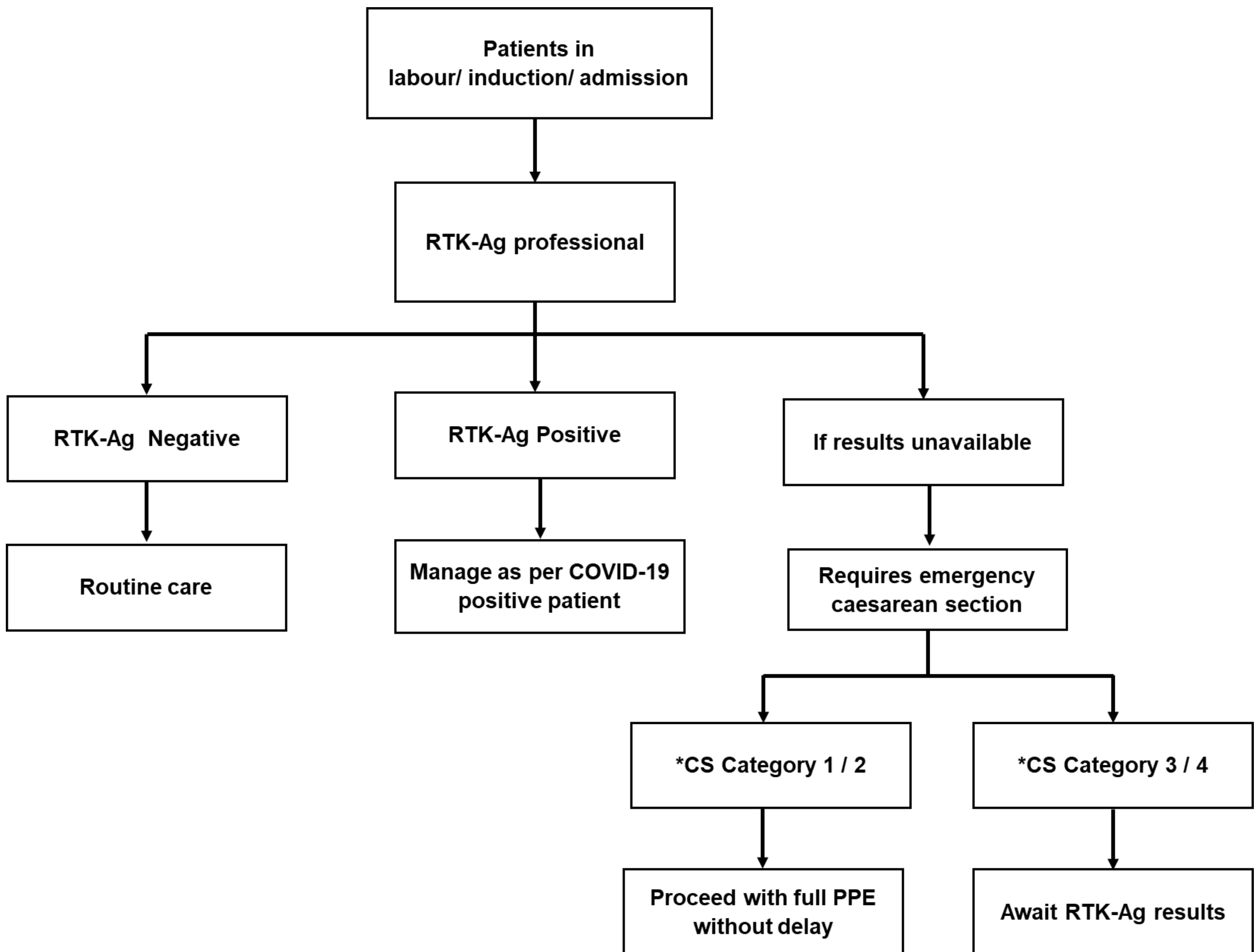
c. Regional anaesthesia is recommended unless contraindicated.

d. During an **emergency caesarean section**, manage suspected, probable, PUS or SARI patients as per COVID-19 patients with **strict adherence to IPC measures with PPE recommendations** without undue delay while the RTK-Ag professional results are obtained.

6.2 Patients in labour

a. All obstetric patients admitted to the ward or in labour have a risk of having an emergency caesarean section and hence should have an **RTK-Ag professional performed during admission.**

Flow Chart for the Management in Obstetric



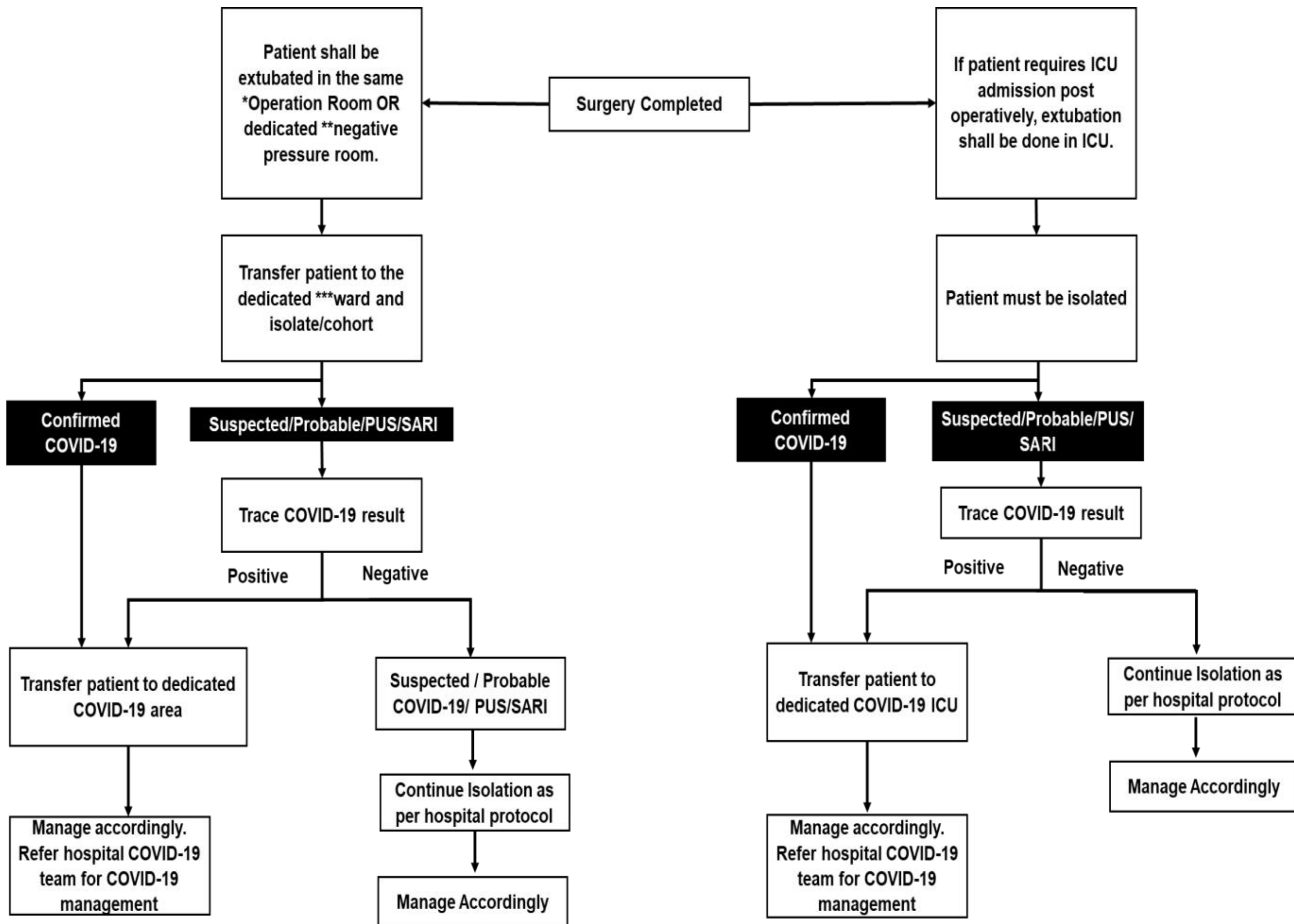
***CS Category** *based on Classification for urgency for Caesarean Birth (NICE)*

Classification for urgency for Caesarean Birth (NICE)

Category 1:	Immediate threat to the life of the woman or fetus (for example, suspected uterine rupture, major placental abruption, cord prolapse, fetal hypoxia or persistent fetal bradycardia).
Category 2:	Maternal or fetal compromise which is not immediately life-threatening.
Category 3:	No maternal or fetal compromise but needs early birth.
Category 4:	Birth timed to suit woman or healthcare provider. [2004, amended 2021]

Notes: Word CS is added in front of the word Category (CS Category)** to avoid confusion with Category used to describe severity of COVID-19 infection.*

Post-Operative Management for Confirmed COVID-19/Suspected/Probable/PUS/SARI



Note:

* If patient extubated in OT, the patient shall remain in OT during the recovery period. Patient shall not be transferred to Recovery Bay. OT cleaning should be based on Policies and Procedures on Infection Prevention and Control, Ministry of Health Malaysia, Chapter 12: Environmental.

** If patient extubated in negative pressure room, patient shall remain in the room during the recovery period before the patient is transferred back to the ward.

*** To limit potential COVID-19 exposure, hospitals (regardless of status i.e. Full COVID-19, Hybrid COVID or Non-COVID) shall have dedicated area or ward to cohort the patients.