GUIDELINE ON MANAGEMENT OF CORONAVIRUS DISEASE 2019 (COVID-19) IN PREGNANCY

Key Recommendations

1) **All frontline O&G staffs should be trained** in "donning and doffing" of PPE which should be used at all times. This training initiative should be extended to the **concessionaire workers** as well.

2) Screening of PUI should be done as **per MOH guidelines**

3) All designated O&G hospitals should establish a dedicated **core team who are** responsible for the management of COVID-19 in pregnancy.

4) **Mother and baby friendly policies** for PUI at designated hospitals are **suspended** to reduce the risk of exposure.

5) Designated hospitals should have an **identified labour room (preferable negative pressure ventilation)** to manage PUI and confirmed patients. Designated hospitals should also have an **identified operating theatre** to manage PUI.

6) **Non-designated hospitals** should identify a **specific labour suite and operating theatre** to manage PUI who presents with **imminent delivery**. Pathways should be developed based on individual logistics and resources.

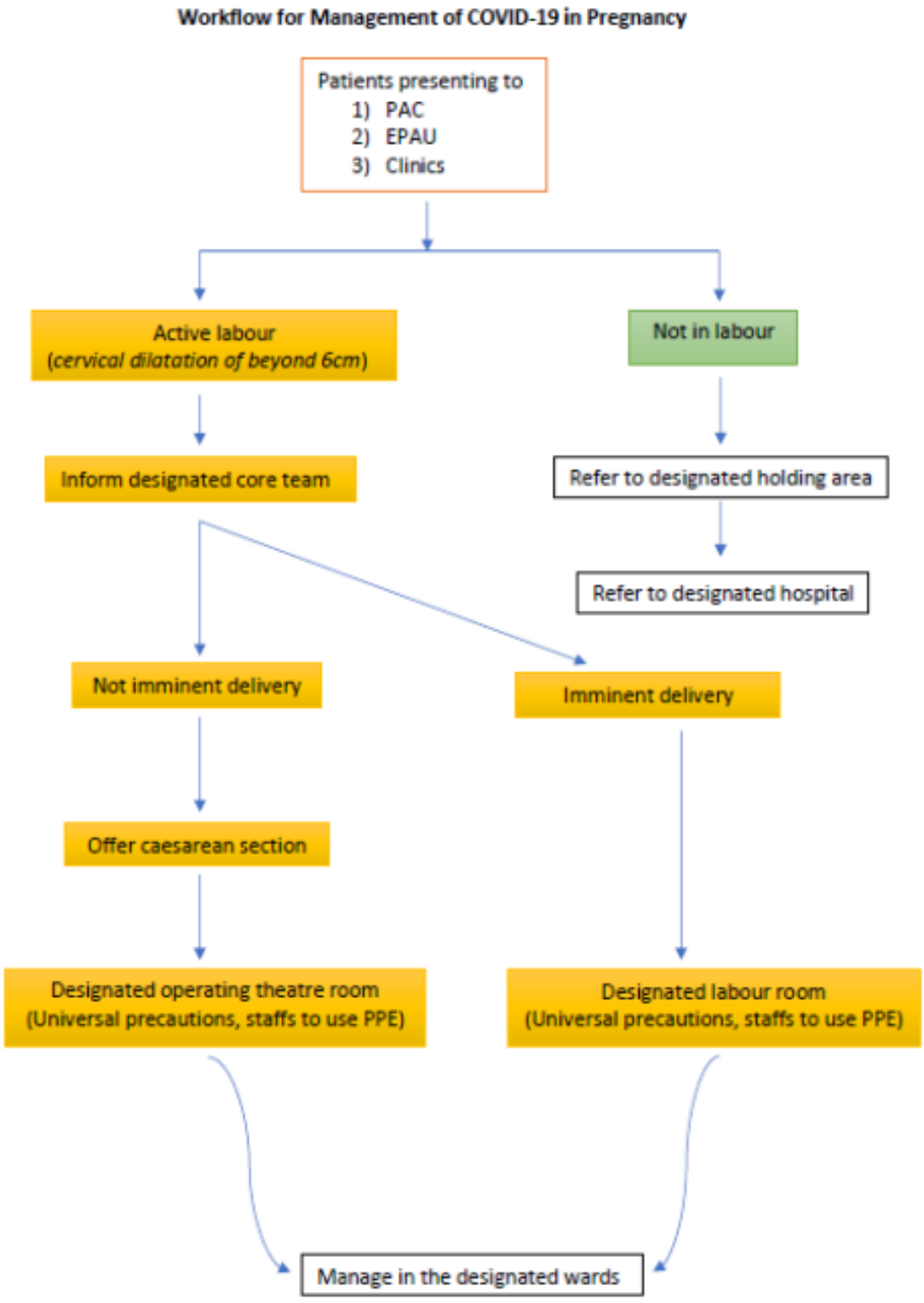
7) In the event of requiring a surgical intervention, **regional anaesthesia** is preferred. If **general anaesthesia** is required, induction and reversal should preferably be done in **negative pressure room**.

8) Patients in labour should be offered a **caesarean section as mode of delivery** until more evidence on safety of vaginal deliveries is established.

9) Handling of bodily fluids, specimens including **placentas and patient apparels** should be handled based on standard **universal precautions**.

10) **Breastfeeding** should ideally be **deferred until confirmatory diagnosis** excludes COVID-19 infection in the mother.

Workflow for Management of COVID-19 in Pregnancy



A. SCREENING

This is based on MOH recommendations of screening for Coronavirus which is generic across all disciplines

a) How to screen (refer Annex 1)

Ask 3 questions to all patients

i. Do you have any fever or acute respiratory infection (sudden onset of respiratory infection with at least one of: shortness of breath, cough or sore throat)?
ii. Do you have any history of travelling to or residing in affected countries in the past 14 days?
iii. Do you have any contact with a confirmed COVID-19 case within the past 14 days?

b) Where to screen

At all possible entry points

i. O&G Clinic
ii. Patient Admission Centre (PAC)
iii. Early Pregnancy Assessment Unit (EPAU)

c) Who to screen?

Every patient

d) If tested positive

Kindly refer to the ID team as per MOH protocol

B. INFORMATION FOR O&G UNITS

a) O&G Team

i. Each O&G unit should establish have a core team to manage PUI and the team should comprise of at least
   - Two O&G Specialist
   - Two O&G Registrars
   - Two Midwives

ii. This identified team should be on-standby for all suspected patients and should be optimally trained in management of COVID-19 patients apart from handling the personal protective equipment (PPE).

iii. Training on “donning and doffing” of PPE is compulsory and they should also manage specimen collections and exercise universal precautions at all times.

b) Universal precautions

i. The number of staffs managing a PUI should be kept to minimum.
ii. The PUI should wear an appropriate mask (3-ply face mask) at all times.
iii. The intrapartum management of PUI should be by the core team, both incorporating vaginal or caesarean deliveries.
iv. Despite no evidence of vertical transmission, it is good clinical practice to treat the body fluids, tissues (placenta) and apparels as potentially biohazards.
v. The labour suite and the operating theatre should be cleaned based on universal recommendations following a biohazard exposure.

Steps to wear PPE	Steps to remove PPE
Hand rub	Remove gloves
Wear N95 mask (Should be fit checked)	Hand rub and hygiene
Wear face shield / goggle	Remove gown
Wear disposable gown (Ensure back is covered)	Hand rub and hygiene
Wear double gloves	Remove mask
	Hand rub and hygiene

c) Transfer and documentation

i. All PUI must first be given a 3-ply face mask to use at all times.
ii. All staffs managing a PUI should wear a complete PPE and these patients should be transferred to the holding area (via passage of minimal exposure) where appropriate screening and investigations can be performed.
iii. It is important to minimize exposure for patients and health care workers.
iv. Documentation of all health care workers involved in managing PUI is essential.

d) Designated labour suite

i. The location of such labour suites should ideally be nearest to the point of entry which is either at the Patient Admission Centre or the

isolation ward but this should depend on the resources of the individual hospitals.

ii. Each O&G unit is recommended to have their own logistics based on their own resources.
iii. Labour rooms should preferably have negative pressure ventilation.
iv. Disposable equipments are preferred. Cleansing of the labour room should adhere to biohazard decontamination protocols.

e) Non-designated labour suites

i. All non-designated O&G units should be prepared to manage PUI who presents in imminent labour.
ii. A core team should be identified and the delivery should be conducted by HCW with PPE.
iii. The location of this labour suite should ideally be located nearby the Patient Admission Centre or at a location with minimal exposure to other patients.
iv. Each unit should ideally have their own written protocols in the event of having such patients presenting with imminent delivery.
v. Post-delivery, the patient and the baby should be transferred to the designated admitting hospital.
vi. Cleansing of the labour room should adhere to the biohazard decontamination protocol.

f) Designated operation theatre

i. All tertiary hospitals should have a dedicated operating theatre for patients suspected with COVID-19.
ii. This theatre should ideally be fully equipped and although a negative pressure ventilation is recommended, it is more essential for patients requiring general anaesthesia and hence this will depend on the resources and each individual hospital.
iii. Most operation theatres have its own air handling units.
iv. The location of this theatre should ideally be easily accessible from the point of contact but this should depend on the individual logistics and resources of each hospital.
v. The benefits of having this theatre nearby to the point of entry will also facilitate crash caesarean sections if required.

g) Non-designated operating theatre

i. Non-designated O&G hospitals should also have contingency plans in place to manage PUI who presents in active labour and requires a caesarean section.

ii. A specific theatre with defined pathways should be created based on the local logistics to facilitate PUI requiring unscheduled surgical interventions

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h) Husband and baby friendly policies to be suspended for PUI

i. For PUI or confirmed patients, there should be minimal risk of exposure to others
ii. Husband and baby friendly policies are suspended for these patients.

i) Elective surgeries

i. Elective surgeries will be suspended if the COVID-19 situation warrants it.
ii. If the patient is suspected to have COVID-19 and is due for an elective surgery, it is recommended that such procedures be deferred for at least 14 days.
iii. This is applicable for full paying patients and day care surgeries as well.

C. INTRAPARTUM MANAGEMENT OF PATIENTS SUSPECTED OR CONFIRMED TO HAVE COVID-19

a) Mode of delivery

i. The evidence on how best to manage a pregnant mother is still limited.
(The only available evidence with regards to intrapartum care comes from the recent Lancet paper of 9 patients where all of them had a caesarean section. This paper showed no evidence of vertical transmission)
ii. There are also concerns of prolonged exposure of staff during the entire intrapartum period and the risk of aerosol exposure is significant, especially in the second stage of labour when the patient strains or pushes.
iii. Hence, in view of the above concerns coupled by the fact that almost all centres do not have negative pressure equipped labour suite, PUI should be offered a caesarean section as a mode of delivery unless delivery is imminent. This is at least until we have more concrete evidence with regards to the intrapartum management of patients with COVID-19.
iv. If a PUI refuses a caesarean section despite counseling, the refusal of treatment forms should be filled and this should be documented in

the clinical notes.

b) Foetal monitoring

i. The monitoring of such patients should follow standard obstetric care and most do not require continuous CTG monitoring.

c) Analgesia

i. The use of Entonox is not to be used for PUI.
ii. Other modalities of analgesia are not contraindicated.

d) Anaesthesia

i. If a patient requires a surgical intervention, regional anaesthesia is highly recommended as this will be a safer option as compared to general anaesthesia.
ii. However, if the only possible option is general anaesthesia, this should ideally be performed in a negative pressure setting with the routine biohazard measures implemented during and post procedure. The patient can then be transferred via a portable ventilator. This however should be based on the individual logistics of each hospitals.
iii. The extubation of such patients should also be done in a negative pressure setting as to minimize the risk of aerosol transmission.

e) Breastfeeding

i. Breastfeeding is not recommended until maternal status has been confirmed to be negative of COVID-19.
ii. Despite counselling, if the mother is still keen for breastfeeding prior to confirmation, she is required to sign the refusal of treatment form.

f) Vaccinations

i. No contraindications for routine neonatal vaccinations.

g) Postnatal care

i. Following delivery, the PUI should be transferred to the dedicated wards for monitoring as per MOH guidelines.

h) Minimizing exposure to staff

i. The management of PUI should be by the core team but the number of staffs should be kept to a minimum.
ii. The recommended number of staffs during an imminent vaginal delivery are two midwifes who are part of the core team.
iii. The recommended number of staff to manage a patient during caesarean section is seven:
    - One Obstetrician
    - One Assistant
    - One Anaesthetist
    - One GA Nurse
    - One Scrub Nurse
    - One Circulating Nurse
    - One Floating Nurse
iv. Additional staff may be required, for example the paediatric team for resuscitation of baby.
v. Routine neonatal examination and care can be performed outside the operating theatre to minimize exposure unless the neonate warrants urgent resuscitation.

i) Concessionaire workers

i. The concessionaire workers should also be trained on appropriate "donning and doffing" of PPE as they may also be exposed to PUI.

D. SCREENING QUESTIONNAIRE

History taking / 病历

Bil.	Questions
1.	Date of departure 出航日期
2.	Place of departure 出发地点
3.	Date of arrival to Malaysia 抵达马来西亚日期
4.	Airline / Flight number 航空公司/ 航班号码
5.	Flight transit
6.	Duration of visit in China

7.	Purpose of visit in China	
8.	Date of onset of symptoms 症状发作日期	
9.	**Fever**? 发烧？	Yes / No 有 / 没有
		How many days? _____ 天
10.	**Cough**? 咳嗽？	Yes / No 有 / 没有
		How many days? _____ 天
	Any phlegm? 有痰液？	Yes / No 有 / 没有
	Colour of phlegm? 痰液的颜色？	White / yellow / green 白 / 黄 / 青 色？
	Blood stain in phlegm? 痰液里有血迹？	Yes / No 有 / 没有
11.	**Difficulty breathing?** 呼吸困难 / 气喘？	Yes / No 有 / 没有
		On movement or at rest? 走动时 / 休息时？
12.	**Chest pain?** 胸口痛？	Yes / No 有 / 没有
		Left / Right / Central 左边 / 右边 /正中？
		On movement or at rest? 走动时 / 休息时？
13.	**Vomiting**? 呕吐?	Yes / No 有 / 没有
		How many days? _____ 天
		How many times per day? 一天_____次？
	Any blood stains? 呕吐里有血迹？	Yes / No 有 / 没有
14.	Other symptoms	

E. EQUIPMENTS

a) Equipment list for vaginal deliveries

BIL	LIST	QUANTITY	DISPOSABLE	REUSEABLE
1.	VE SET		√	
2.	AMNIOTIC HOOK	1	√	
3.	BABY TOILET	1	√	
4.	DELIVERY FORCEPS:			√
5.	ARTERY FORCEPS	2		√
6.	SPONGE FORCEP	1		√
7.	EPISIOTOMY SCISSORS	1	√	
8.	CORD SCISSORS	1	√	
9.	DELIVERY SETS		√	
10.	CORD CLAMP		√	
	EPISIOTOMY SET:		√	
11.	STITCH SCISSORS		√	
12.	NEEDLE HOLDER			√
13.	DISSECTING FORCEPS - TOOTH			√
14.	DISSECTING FORCEPS - NON-TOOTH		√	
15.	SPONGE HOLDER	1		√
16.	TRAY		√	

b) Equipment list for caesarean sections

BIL	LIST	QUANTITY	DISPOSABLE	REUSEABLE
1.	LSCS SET	1		√
2.	WRIGGLEY'S FROCEPS	1		√
3.	GA STERILE GOWN	2	√	
4.	REINFORCE GOWN	4	√	
5.	3 METRE CONNECTING TUBBING	2	√	
6.	YAUNKER SUCKER	3	√	
7.	CORD CLAMP		√	
	GA SET:			√
8.	CLEANING SET (USE DRESSING SET)	1	√	
9.	ETT TUBE		√	
10.	LARYNGOSCOPE (SHORT BLADE & LONG BLADE)	1	√	
11.	LARYNGOSCOPE (SHORT & LONG HANDLE)	1	√	
12.	ISLAND DRESSING	1	√	
13.	KIDNEY DISH	1	√	