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Tarikh : 4 Mei 2020

SEPERTI SENARAI EDARAN

YBhg. Datuk/Dato'/Datin/Tuan/Puan,

GARIS PANDUAN VERSI 2.0: PENGENDALIAN PEMBEDAHAN SEMASA WABAK COVID19 DI HOSPITAL KEMENTERIAN KESIHATAN MALAYSIA (KKM)

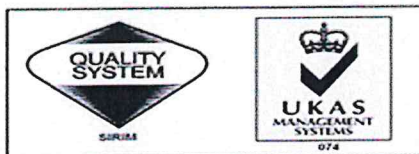
Dengan segala hormatnya saya merujuk kepada perkara di atas dan surat Ruj: KKM 7.600.27/14/40 (5) bertarikh 4 April 2020 adalah berkaitan.

2. Perkhidmatan pembedahan adalah salah satu perkhidmatan yang penting di hospital KKM. Bagi hospital COVID, semasa pandemik COVID19 pengendalian kes pembedahan telah terjejas, walaupun kes pembedahan kecemasan dan separa kecemasan masih dijalankan di hospital tersebut. Bagi memastikan penyampaian perkhidmatan yang lebih berkesan, Program Perubatan bersama beberapa Ketua Perkhidmatan KKM telah membuat semakan dan penambahbaikan garispanduan pembedahan yang terdahulu merangkumi hospital COVID dan hospital bukan COVID. Bersama ini disertakan **Garis Panduan Versi 2.0: Pengendalian Pembedahan Semasa Wabak Covid19 Di Hospital Kementerian Kesihatan Malaysia (KKM)** untuk makluman dan tindakan selanjutnya.

3. Seperti yang dinyatakan dalam surat Ketua Pengarah Kesihatan Ruj: KKM 7.600.27/14/40 (5), adalah diingatkan bahawa hospital KKM perlu terus melaksanakan dan mengamalkan langkah pencegahan COVID antaranya:



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- a. Penjarakkan sosial (*social distancing*) termasuklah semasa pendaftaran, ruang menunggu di Klinik Pakar, kaunter farmasi, *scrub area*, *recovery area* dan sebagainya.
 - b. Temujanji berperingkat (*staggered appointment*) bagi memastikan penjarakkan sosial susulan kehadiran pesakit pada satu-satu masa temujanji.
 - c. Tempoh bekalan preskripsi ubat (*drugs prescription*) dilanjutkan mengikut kesesuaian penyakit. Pengambilan ubat pesakit secara pos atau farmasi pandu lalu (*drive thru pharmacy*) adalah disarankan.
 - d. Kekerapan temujanji susulan (*follow-up*) pesakit perlu dijadualkan semula di mana tidak semestinya pesakit perlu hadir untuk temujanji jika hanya untuk membuat semakan ujian makmal sahaja. Semakan ujian makmal wajar diterokai secara atas talian (*on-line*)
4. Kerjasama daripada pihak YBhg. Datuk/Dato'/Datin/Tuan/Puan untuk melaksanakan pengendalian pembedahan seperti yang dinyatakan dalam garis panduan versi 2.0 ini adalah sangat dihargai.

Sekian terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,



(DATUK DR. ROHAIZAT BIN YON) (MMC:26029)

Timbalan Ketua Pengarah Kesihatan (Perubatan)

Kementerian Kesihatan Malaysia

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Timbalan Ketua Pengarah Kesihatan (Perubatan)
Kementerian Kesihatan Malaysia

s.k

Ketua Setiausaha
Kementerian Kesihatan Malaysia

Kementerian Kesihatan Malaysia

Timbalan Ketua Pengarah Kesihatan (Kesihatan Awam)
Kementerian Kesihatan Malaysia

Timbalan Ketua Pengarah Kesihatan (Penyelidikan dan Sokongan Teknikal)
Kementerian Kesihatan Malaysia

Pengarah
Bahagian Perkembangan Perubatan

Pengarah
Bahagian Kawalan Penyakit

Pengarah
Bahagian Perkembangan Kesihatan Awam

Semua Pengarah Kesihatan Negeri

Semua Ketua Perkhidmatan
Kementerian Kesihatan Malaysia

Setiausaha Sulit Kanan Kepada
YB Menteri Kesihatan

Setiausaha Sulit Kanan Kepada
YB Timbalan Menteri Kesihatan I

Setiausaha Sulit Kanan Kepada
YB Timbalan Menteri Kesihatan II

**GUIDELINES FOR MANAGEMENT OF SURGERY
DURING COVID-19 PANDEMIC
(VERSION 2/2020)**

(Note: The guideline will be updated accordingly)

INTRODUCTION

1. COVID-19 is transmissible by respiratory droplets when a person is in close contact (within 1 m) with someone who has respiratory symptoms (e.g., coughing or sneezing) and is therefore at risk of having his/her mucosae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets. Transmission may also occur through fomites in the immediate environment around the infected person. Therefore, all Healthcare Workers (HCW) must practice Standard Precautions when handling all patients with additional Transmission-based Precautions (i.e., contact, droplet, airborne) based on the activities carried out.
2. Healthcare workers involved in the operation theatre are advised to don PPE based on the risk exposure and probability of the patient acquiring COVID-19 according to patient's assessment stated in this guideline.
3. Currently worldwide, there are limited published data on the prevalence of positive COVID-19 in pre-operative assessment. However in Malaysia, a total number of **5,164 samples** were taken over 20 days (11th - 30th April 2020) **revealed that there were only 5 positive cases (0.11%) identified. This shows 99.9% of patients sampled were negative for COVID19.** Hence, a more targeted and cased-based approach to pre-operative sampling is required.
4. Due to the dynamic nature of the pandemic situation, recommendations are meant to be refined over time based on the latest available evidence and guidelines and should be evaluated on a case-by-case basis with feedback from subject matter experts over the duration of the crisis.
5. This revised Guideline is aimed to enhance the previous Guideline issued by DG of Health on "*Garis Panduan Bagi Pengendalian Pembedahan Kecemasan Dan Separa Kecemasan Semasa Wabak Covid-19 Di Hospital Kementerian Kesihatan Malaysia (KKM)*" dated 4th April 2020.

TERMINOLOGY

EMERGENCY SURGERY		
Acute Emergency	Patient condition, which requires immediate operation, i.e. life-threatening situation, failing which life/limb will be lost. Surgery may proceed without baseline investigation/patient being fasted.	
Emergency	Patient condition which haemodynamically stable that requires operative procedure to be carried out, otherwise life is threatened or morbidity is increased.	A. Trauma (< 6 hours) <ul style="list-style-type: none"> - Non-life threatening condition but if the operation is carried out after 6 hours, it will increase patient morbidity and mortality risk.
		B. Non-trauma (< 8 hours) <ul style="list-style-type: none"> - Non-life threatening condition but if the operation is carried out after 8 hours, it will increase patient morbidity and mortality risk.
Urgent	Patient condition, which requires operative procedure within 24-hours otherwise there is increased in morbidity.	
Semi-urgent	Patient condition, which requires operative procedure within one week otherwise there is increased in morbidity.	

*** For prioritisation of cases according to discipline please refer Guidelines Perioperative Mortality Review (POMR): Prioritisation of Cases for Emergency and Elective Surgery (2nd Revision) 2018**

TERMINOLOGY

ELECTIVE SURGERY		
Category 1	Malignancy Case requiring operative procedure within 1/12 after diagnosis is made and patient is fully optimised.	
Category 2	Non-malignancy	Intermediate Case requiring operative procedure within 3/12, which if it was not done, it will become an emergency case.
Category 3	Non-malignancy	A. Congenital Case requiring operative procedure within 6/12, which if it was not done, it will not become an emergency case but may affect patient's development
		B. Functional/Quality of Life Case requiring operative procedure within 6/12, which if it was not done, it will not become an emergency case but may affect the patient's function and quality of life.
		C. Corrective Case requiring operative procedure on the next available date within 1 year, which if it was not done, it will not become an emergency case and will not affect patient's function and quality of life.

AEROSOL GENERATING PROCEDURES (AGP)

Definition:

Defined as any medical and patient care procedure that results in the production of airborne particles/ aerosols that creates the potential for air borne transmission of infections and may otherwise only be transmissible by the droplet route.

1. Intubation, extubation and related procedures, for example, manual ventilation and open suctioning of the respiratory tract (including the upper respiratory tract).
2. Tracheotomy or tracheostomy procedures (insertion or open suctioning or removal).
3. Bronchoscopy and upper ENT airway procedures that are both diagnostic and therapeutic.
4. Upper gastro-intestinal endoscopy where there is open suctioning of the upper respiratory tract.
5. Surgery and post-mortem procedures involving high-speed devices.
6. High-speed drilling procedures or operation.

7. Non-invasive ventilation (NIV); bi-level positive airway pressure ventilation (BIPAP) and continuous positive airway pressure ventilation (CPAP).
8. High frequency oscillatory ventilation (HFOV).
9. Induction of sputum.
10. High flow nasal oxygen (HFNO).
11. Cardiopulmonary resuscitation.
12. Nebulization.
13. Chest thoracotomy/chest tube insertion.

PRE OPERATIVE MANAGEMENT

A. Acute Emergency and Emergency Operation

- i. All patients are required to go through a thorough clinical assessment including:
 - i. **History taking from patient** (including history of close contact, travel history, and other respiratory symptoms)
 - ii. **Physical examination** (including vitals signs and lungs auscultation)
 - iii. **Laboratory Investigation** (including FBC and relevant investigation may be performed if indicated)
 - iv. **Radiological Investigation** (Chest X-ray is mandatory for all patient. Lung USG and other radiological investigation may be performed when indicated)
 - v. **High risk group** (Immunocompromised patients, elderly (> 65 y.o), cancer patients and patients with Co-morbid)
- ii. If any one of the above criteria is present and patient's clinical assessment is suggestive of a COVID-19 case, patient should be classified as a **“High Probability”**. If none of the above criteria is present, patient should be classified as a **“Low Probability”**.
- iii. For Acute Emergency and Emergency Operation, all high probability patients are required to take COVID-19 diagnostic test via RT-PCR as per local hospital protocol. Priorities may change and if point-of-care testing (MOH approved Rapid Test Kit Antigen) becomes available, it may be utilized where feasible apart from the COVID-19 test via RT-PCR.
- iv. Operations shall proceed without waiting for the COVID-19 test result and all staff involved should don appropriate PPE as indicated (refer Personal Protective Equipment component).
- v. For **“Low Probability”** patients, COVID-19 diagnostic test is not indicated. Operations shall proceed in the usual manner and personnel shall don the routine OT attire with an additional face shield.

PRE OPERATIVE MANAGEMENT

B. Urgent and Semi-Urgent Operation

- i. All patients are required to go through a thorough clinical assessment including:
 - i. **History taking from patient** (including history of close contact, travel history, and other respiratory symptoms)
 - ii. **Physical examination** (including vitals signs and lungs auscultation)
 - iii. **Laboratory Investigation** (including FBC and relevant investigation may be performed if indicated)
 - iv. **Radiological Investigation** (Chest X-ray is mandatory for all patient. Lung USG and other radiological investigation may be performed when indicated)
 - v. **High risk group** (Immunocompromised patients, elderly (> 65 y.o), cancer patients and patients with Co-morbid)
- ii. If any one of the above criteria is present and patient's clinical assessment is suggestive of a COVID-19 case, patient should be classified as a **“High Probability”**. If none of the above criteria is present, patient should be classified as a **“Low Probability”**.
- iii. For Urgent and Semi-Urgent Operation, all high probability cases are required to take COVID-19 diagnostic test via RT-PCR as per local hospital protocol. Following the COVID-19 test, an evaluation should be made by the surgeon. If the operation cannot be delayed, patient shall proceed with operation (**Refer Appendix 1**). Whenever possible to delay the operation, one should wait for the confirmation of COVID-19 test results. If COVID-19 test is positive, patient should undergo operation at a dedicated COVID-19 OT in COVID-19 hospital. In a Non COVID-19 hospital, patient should be transferred out to the nearest COVID-19 hospital for further management.
- iv. Priorities may change and if point-of-care testing (MOH approved Rapid Test Kit Antigen) becomes available, it may be utilized where feasible apart from the COVID-19 test via RT-PCR.
- v. If the COVID-19 test is negative, operations shall proceed in the usual manner and personnel shall don the routine OT attire with an additional face shield.
- vi. For **“Low Probability”** cases, COVID-19 diagnostic test is not indicated. Operations shall proceed in the usual manner and personnel shall don the routine OT attire with an additional face shield.

PRE OPERATIVE MANAGEMENT

C. Elective Operation

- i. All patients are required to go through a thorough clinical assessment including:
 - i. **History taking from patient** (including history of close contact, travel history, and other respiratory symptoms)
 - ii. **Physical examination** (including vitals signs and lungs auscultation)
 - iii. **Laboratory Investigation** (including FBC and relevant investigation may be performed if indicated)
 - iv. **Radiological Investigation** (Chest X-ray is mandatory for all patient. Lung USG and other radiological investigation may be performed when indicated)
 - v. **High risk group** (Immunocompromised patients, elderly (> 65 y.o), cancer patients and patients with Co-morbid)
- ii. If any one of the above criteria is present and patient's clinical assessment is suggestive of a COVID-19 case, patient should be classified as a **“High Probability”**. If none of the above criteria is present, patient should be classified as a **“Low Probability” (Refer Appendix 3)**.
- iii. All **“High Probability”** cases are required to take COVID-19 diagnostic test via RT-PCR as per local hospital protocol. Following the COVID-19 test, if the COVID-19 test is positive, patient should be referred to Infectious Disease Physician/Physician for the management of COVID-19. If the COVID-19 is negative, patient may be referred to Anaesthesiology Clinic for Pre-op assessment and admitted to the ward for optimization before surgery if indicated.
- iv. Priorities may change and if point-of-care testing (MOH approved Rapid Test Kit Antigen) becomes available, it may be utilized where feasible apart from the COVID-19 test via RT-PCR.
- v. For **“Low Probability”** cases, COVID-19 diagnostic test is not indicated. Operations shall proceed in the usual manner and patient may be referred to Anaesthesiology Clinic for Pre-op assessment.

PRE OPERATIVE MANAGEMENT

D. Personal Protective Equipment (PPE)

- i. All personnel involved during the procedure / surgery should don the appropriate PPE. Personnel involved with **High Probability** patients and those performing **Aerosol Generating Procedures (AGP)** should always don appropriate PPE as the following:

Option 1:

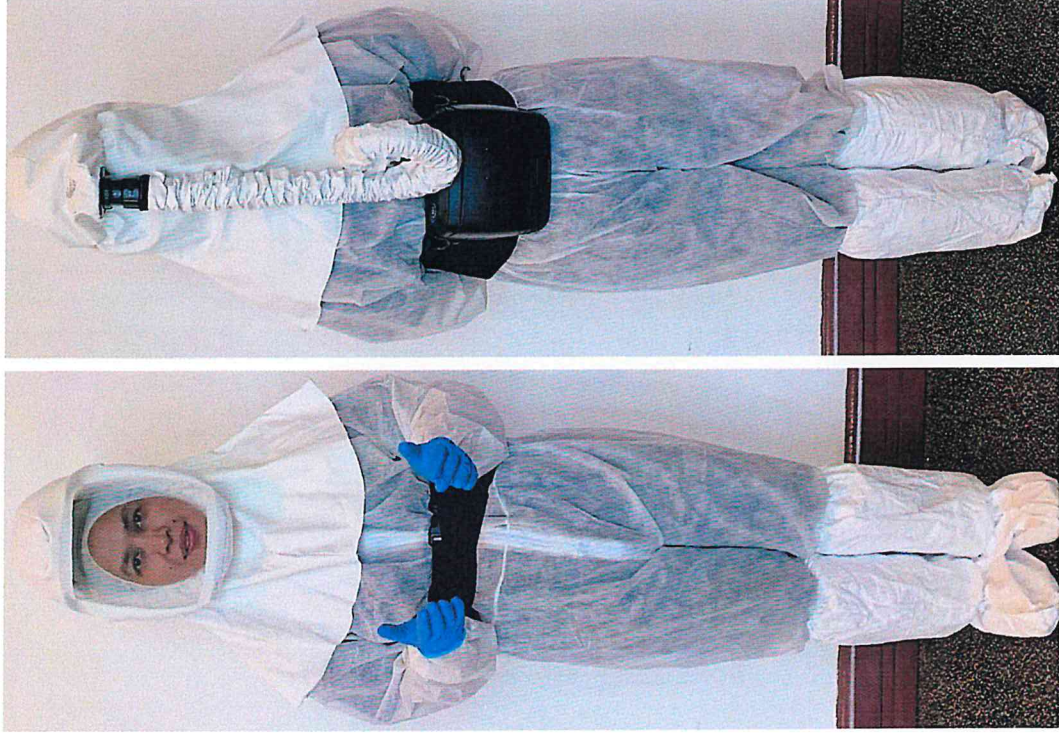
1. Powered Air-purifying Respirator (PAPR)
2. Sterile Coverall suit (if available) **OR** Isolation Gown (fluid repellent long-sleeved gown)
3. Eye Protection (face shield/ goggle) depending on type of PAPR
4. Sterile Surgical Gloves
5. Boot Cover / Shoe Cover
6. Followed by sterile OT gown (if sterile coverall suit is not available)

Option 2:

1. Fit-tested N95 mask
2. Sterile Coverall suit (if available) **OR** Isolation Gown (fluid repellent long-sleeved gown)
3. Eye Protection (face shield/ goggle)
4. Sterile Surgical Gloves
5. Boot Cover / Shoe Cover
6. Head Cover (when wearing Isolation gown)
7. Followed by sterile OT gown (if sterile coverall suit is not available)

- ii. All personnel should strictly adhere to proper procedure of donning and doffing according to Policies and Procedures on Infection Prevention and Control and are also encouraged to shower after doffing of PPE.

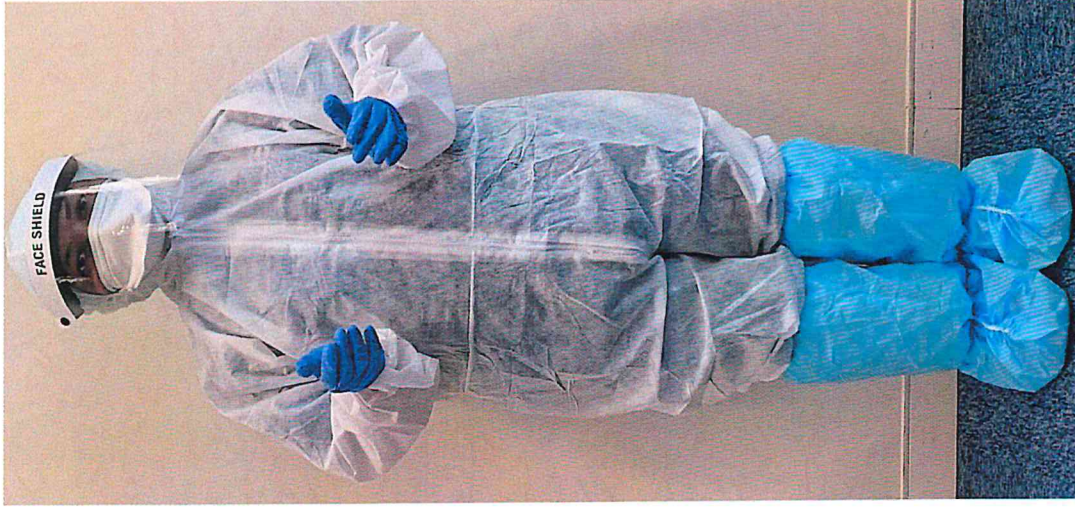
PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR PERSONNEL INVOLVED WITH HIGH PROBABILITY PATIENTS (1/2)



OPTION 1:

1. PAPR
2. Sterile coverall suit (if available) OR Isolation Gown (fluid repellent long-sleeved gown)
3. Eye Protection (face shield/ goggle) depending on type of PAPR
4. Sterile Surgical Gloves
5. Boot Cover / Shoe Cover
6. Followed by sterile OT gown (if sterile coverall suit is not available)

PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR PERSONNEL INVOLVED WITH HIGH PROBABILITY PATIENTS (2/2)



OPTION 2

1. Fit-tested N95 mask
2. Sterile coverall suit (if available) OR Isolation Gown (fluid repellent long-sleeved gown)
3. Eye Protection (face shield/ goggle)
4. Sterile Surgical Gloves
5. Boot Cover / Shoe Cover
6. Head Cover (when wearing Isolation gown)
7. Followed by sterile OT gown (if sterile coverall suit is not available)

POST OPERATIVE MANAGEMENT

A. Post – operative care for High Probability Patients

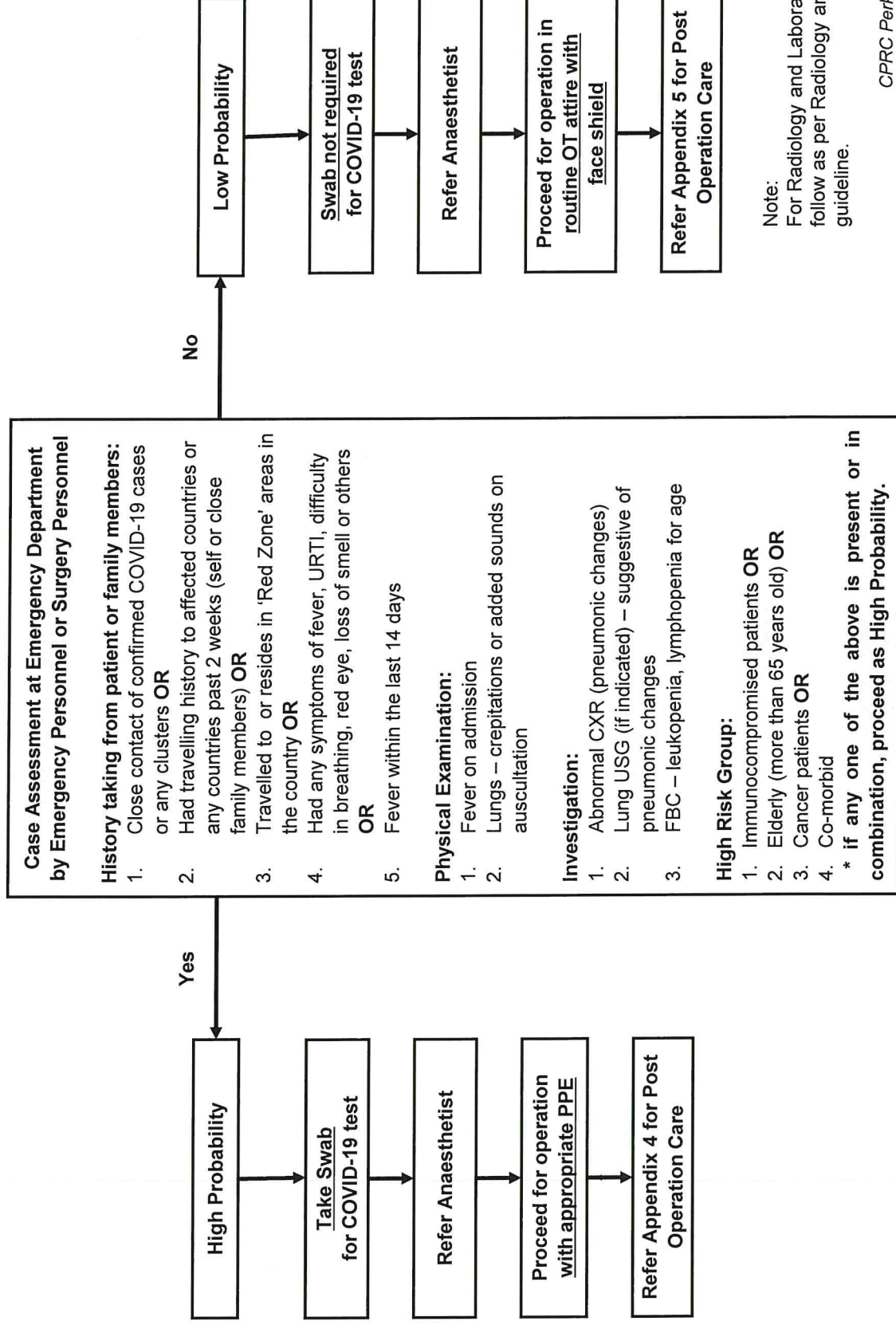
- i. After the surgery is completed, the patient can be transferred out either to the Intensive Care Unit (ICU) or ward.
- ii. Patients shall be extubated in Airborne Infection Isolation Room (AIIR) / negative pressure room, Operation Theatre (if there is no dedicated or available AIIR) or in ICU. If the patient is extubated in ICU, there shall be a dedicated area whereby the patients must be cohorted/isolated from other patients in ICU until the screening result received.
- iii. OT cleaning should be based on Policies and Procedures on Infection Prevention and Control Ministry of Health Malaysia, Chapter 12: Environmental.
- iv. For stable patient, the patient shall be transferred to ward where the patient must be cohorted/isolated until the screening result received.
- v. If the screening result is positive, patient shall be transferred to dedicated ICU and ward for COVID-19 and refer to ID Physician for co-management. If required, patient shall be sent to dedicated COVID-19 hospital.
- vi. If the screening result is negative, patient shall be transferred to normal ICU or ward.
- vii. Healthcare workers managing these High Probability patients must adhere to a strict PPE donning and doffing in ICU and ward.

B. Post – operative care for Low Probability Patients

- i. Post operative care for the Low Probability patients shall be managed in usual manner.

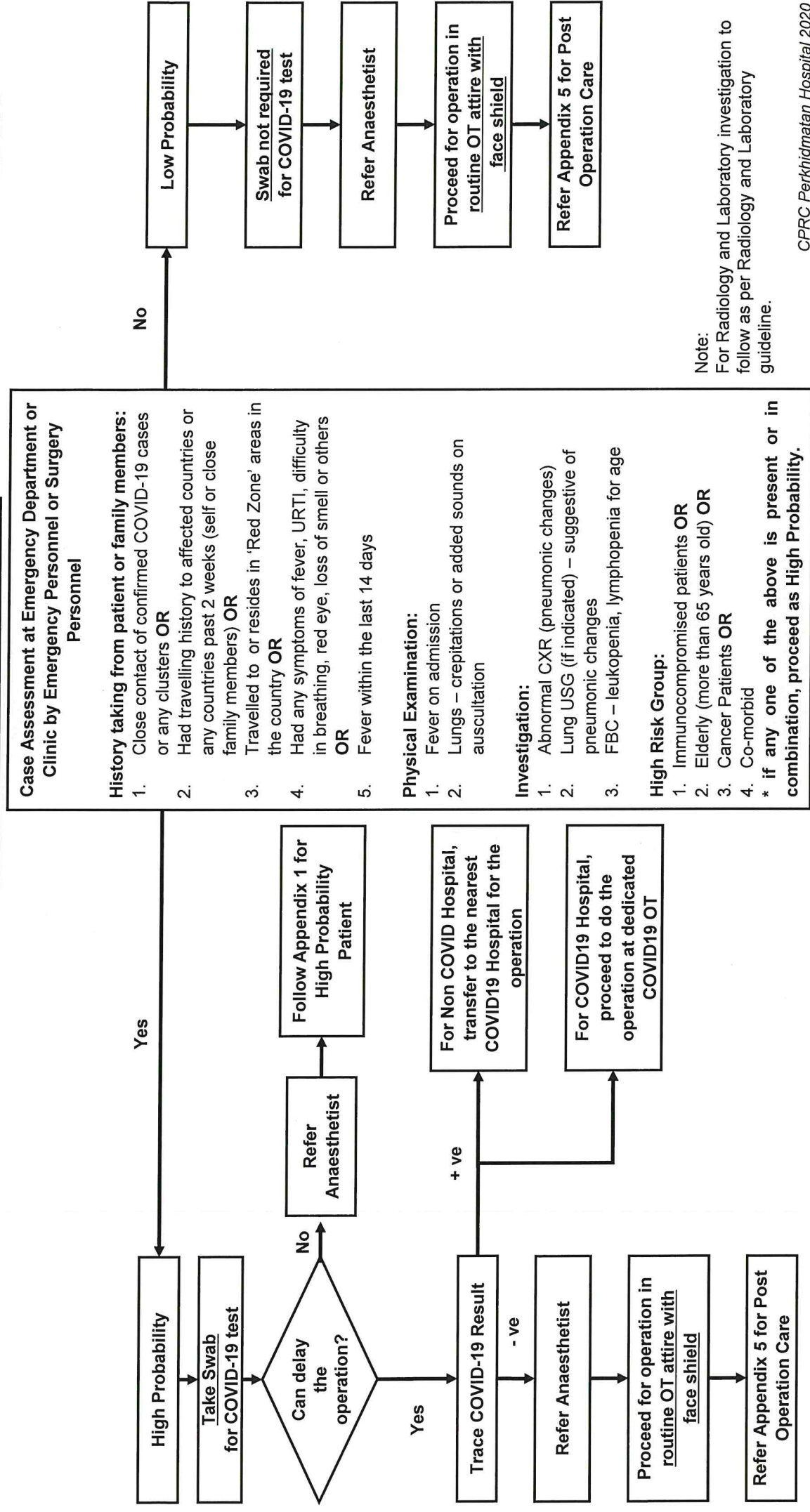
ACUTE EMERGENCY AND EMERGENCY OPERATION

APPENDIX 1



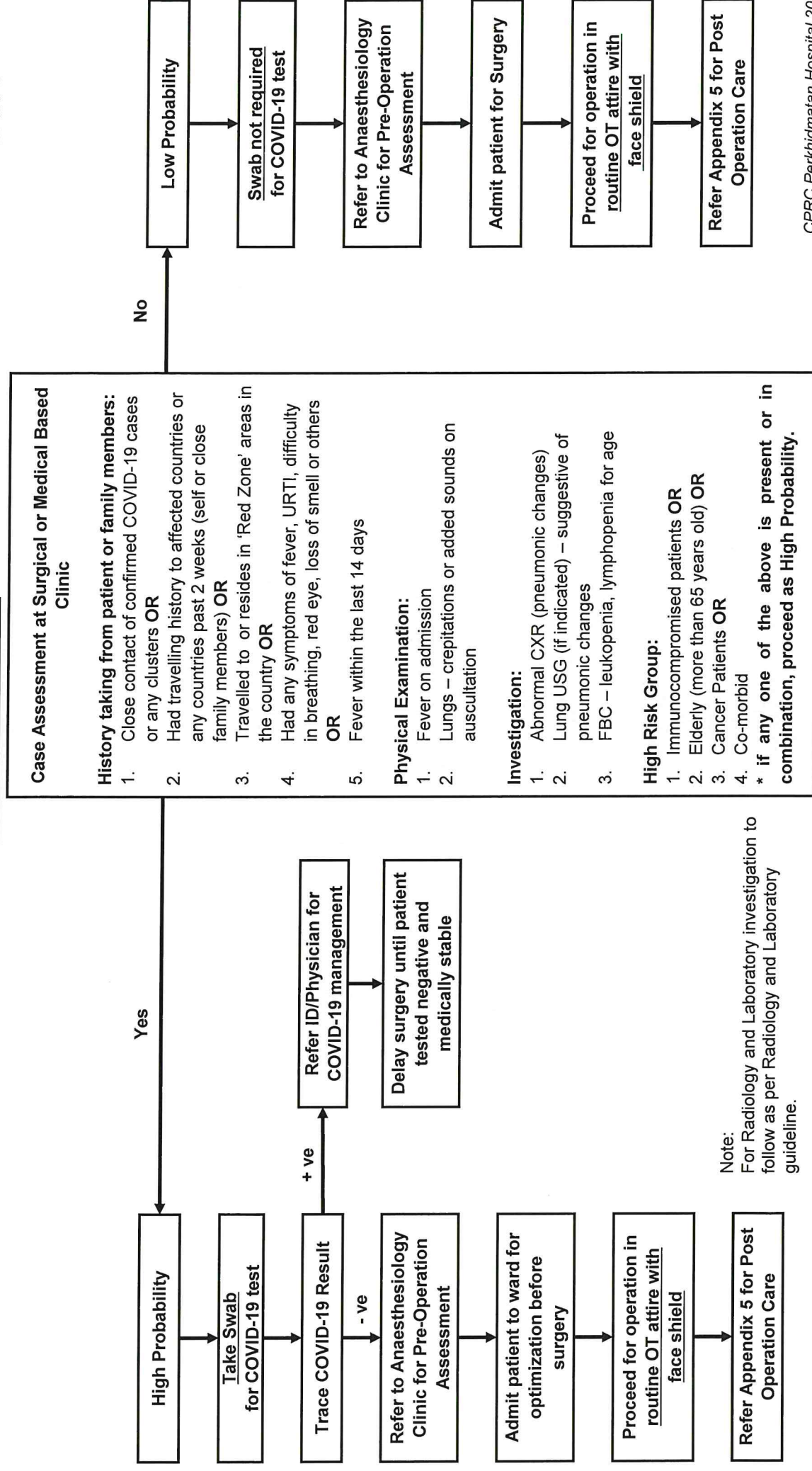
URGENT AND SEMI-URGENT OPERATION

APPENDIX 2



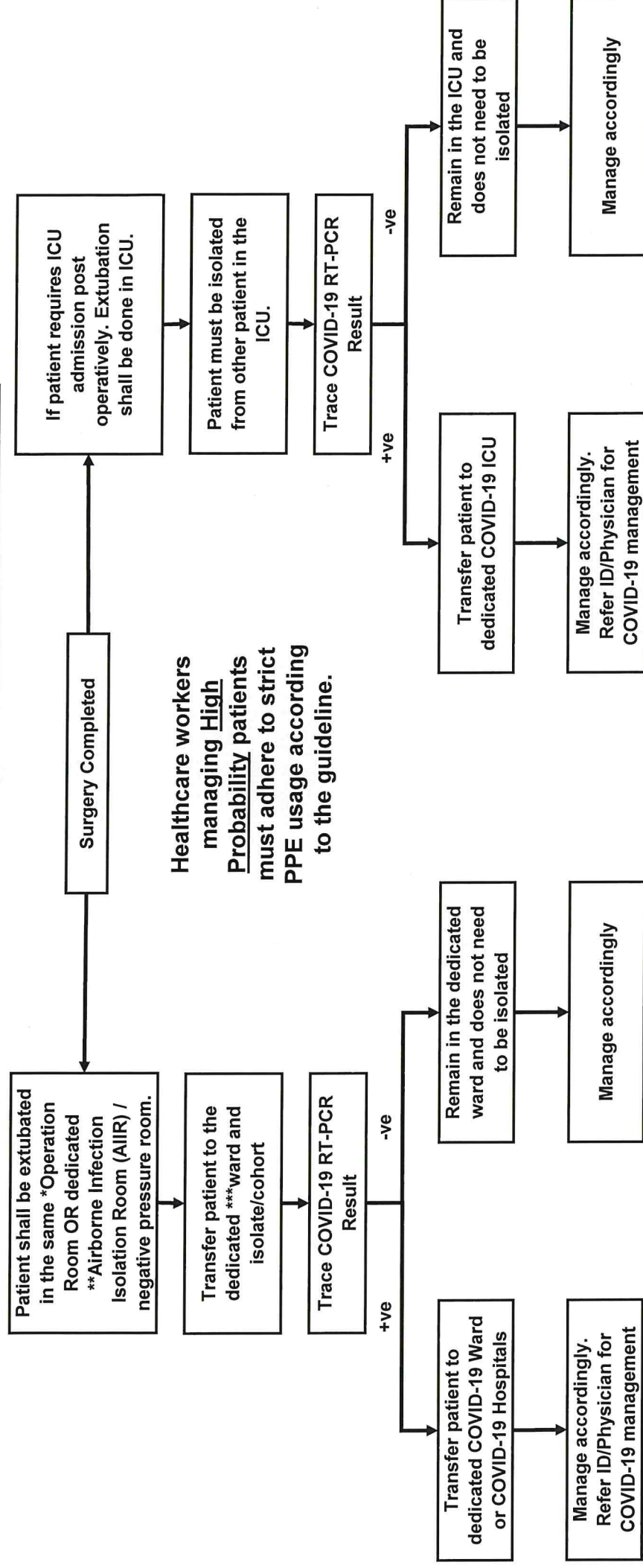
ELECTIVE OPERATION

APPENDIX 3



POST OPERATION CARE FOR HIGH PROBABILITY PATIENTS

APPENDIX 4



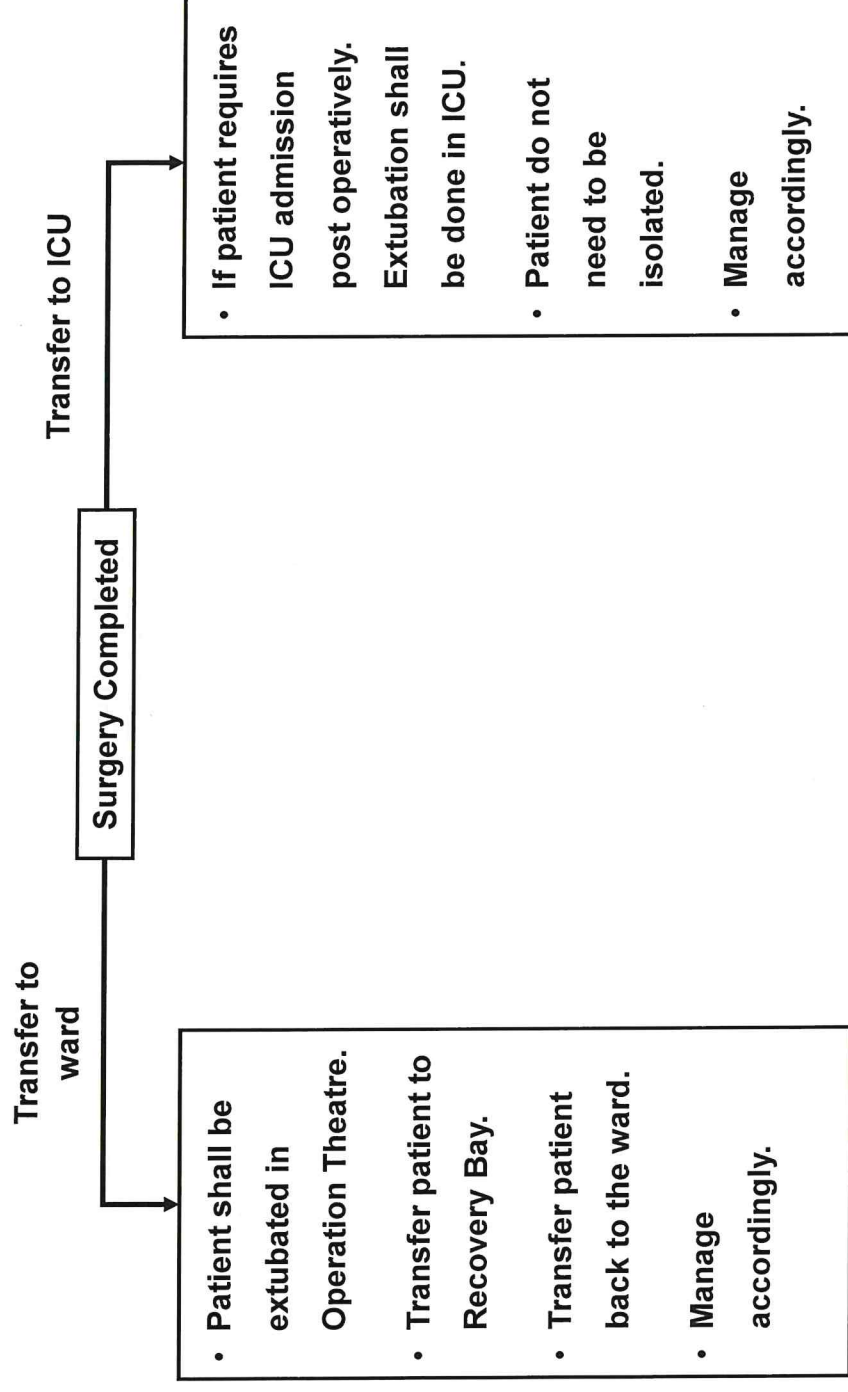
* If patient extubated in OT, the patient shall remain in OT during the recovery period. The patient shall not be transferred to Recovery Bay. OT cleaning should be based on Policies and Procedures on Infection Prevention and Control Ministry of Health Malaysia, Chapter 12: Environmental.

** If patient extubated in Airborne Infection Isolation Room (AIIR)/ negative pressure room, the patient shall remain in the room during the recovery period before the patient is transferred back to the ward.

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

POST OPERATION CARE FOR LOW PROBABILITY PATIENTS

APPENDIX 5



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14. Infection Control Unit, Medical Development Division MOH
15. Surgery and Emergency Unit, Medical Development Division MOH

Due to the evolving dynamics of the COVID-19 pandemic, the guidelines may be revised should the need arise. For any enquiries or feedback regarding this guideline, kindly contact:

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