

# **CODE BLUE SYSTEM**

**HOSPITAL SULTANAH AMINAH  
JOHOR BAHRU**

**RAPID RESPONSE SYSTEM FOR THE MANAGEMENT  
OF INTRAINSTITUTIONAL MEDICAL EMERGENCIES**

**SECOND EDITION**

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**PRODUCED BY  
EMERGENCY AND TRAUMA DEPARTMENT,  
HOSPITAL SULTANAH AMINAH JOHOR BAHRU.**



**HOSPITAL SULTANAH AMINAH JOHOR BAHRU**

**CODE BLUE 5555**

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## **ACKNOWLEDGEMENT**

### **Director**

Dr Hj Mohtar Bin Pungut @ Hj Ahmad  
Hospital Director  
Hospital Sultanah Aminah Johor Bahru

### **Advisor**

Dr Hj Md Saed Bin Mian  
Consultant Emergency and Trauma Physician  
Head of Emergency and Trauma Services for Johor State  
Hospital Sultanah Aminah Johor Bahru

### **Chief Editor**

Dr Hj Mohd Amin Bin Mohidin  
Consultant Emergency and Trauma Physician  
Head of Emergency and Trauma Department  
Hospital Sultanah Aminah Johor Bahru

### **Editor**

Dr Ng Von How  
Emergency Physician  
Hospital Sultanah Aminah Johor Bahru

## **Contributor**

**Consultant Emergency Physician, Emergency and Trauma Department,**

**Hospital Sultanah Aminah Johor Bahru**

Dr Ahmad Abdul Basitz Bin Ahmad Fatan

Dr Murniza Binti Murad

**Medical Officer, Emergency and Trauma Department,**

**Hospital Sultanah Aminah Johor Bahru**

Dr Ezuwan Bin Ezani

Dr Nurbaiti Fadhliana Binti Md Arifin

Dr Thamotheran A/L Parameswaran

Dr Chan Yee Kit

Dr Sharvini A/P Jeyaseelan

### **Clinical Coordinator**

En Mohd Nurul Izwan Bin Anuar

En Aimie Bin Rahmat

**Code Blue Coordinator, Hospital Sultanah Aminah Johor Bahru**

**(According to Alphabet)**

Dr Anjah Anifah Bt Ahmad

Dr Bong Zhao Sheng

Dr Diyana Bt Mohamad

Dr Fatimatuzzahra Binti Zainal Azmi

Dr Fatin Sakinah Binti Ramlan

Dr Goh Yi Pei

Dr Hemala Devi A/P Krishnan

Dr Indrani A/P Varathan

Dr Ida Arinah Binti Mahadi

Dr Khairol Hadi Bin Abd Aziz

Dr Mardyiana Binti Md Seman

Dr Muizzatul Widad Binti Mosid

Dr Nalini M Nanu

Dr Neerusha A/P Kaisbain

Dr NurFarahani Binti Arpeii

Dr Nur Liyana Binti Johar

Dr Marisa Masera Binti Marzukie

Mr Muhammad Izwan Ismail

Dr Sivaganesh A/L Sivaraman

Dr Tang Wei Chern

# CODE BLUE

## Emergency Medical Management – A Rapid Response System

### 1. Introduction

Code Blue is a rapid response system for emergency resuscitation and stabilization of medical emergency situations that happen within the hospital area. These medical emergencies require immediate attention. A Code Blue is to be initiated immediately whenever a person is found in cardiac or respiratory arrest (unresponsive, pulseless, or not breathing) i.e. the patient needs cardiopulmonary resuscitation (CPR).

Code Blue Rapid Response System is established to ensure that all critical medical emergencies are provided with resuscitation and stabilization **ALMOST** immediately. The Response System is in 2 phases.

- i) The initial response (*first responder*) should always be from the hospital personnel who are at the vicinity; where Basic Life Support (BLS) service should be provided.
- ii) The second response (*second responder*) will be from a specialized and trained in OHCA (out hospital cardiac arrest) patient/ victim which is PHCAS from ETD

The response system is being conducted with a specific response time based upon the service quality standards which have been determined by the hospital authorities. To enable the proper establishment of such system, the following is essential:

- i) All personnel in the hospital should be trained with BLS skills to enable the initiation of critical basic life support at the incident site.
- ii) Basic Life Support equipment should be placed in all strategic locations within the hospital grounds, for example hospital lobby, waiting areas in polyclinics and other high risk areas; where the equipment is portable or mobile to enable rapid response.

Once there is a Code Blue, a team of doctors and paramedics (medical assistants and staff nurses), often a designated "code-team", will rush to the patient taking life-saving measures. The team uses a 'crash cart', wheelchair/stretchers, which contains important aids such as a defibrillator, intubation equipment, suction, oxygen, BVM, resuscitation drugs (adrenaline, atropine, lignocaine) and an I.V. setup to stabilize the patient. The team will utilize BLS and Advanced Cardiac Life Support (ACLS) skills to resuscitate patients.

In areas where patients are routinely admitted, there should be a 'crash cart' or trolley, containing specialized life support equipment, available. If a Code Blue is called in an area without a 'crash cart', the designated code blue team will bring the 'crash cart' or resuscitation kit. A code blue is called for patients who do not have an advance healthcare directive indicating otherwise.

## 2. Objectives of Code Blue

- a) To provide rapid (almost immediate) resuscitation and stabilization for victims of medical emergencies or cardio-respiratory arrest within the hospital grounds.
- b) To establish well-trained and equipped medical emergency (code blue) teams that can be deployed rapidly from pre-determined departments to the medical emergency site.
- c) To initiate training in BLS skills and use of Automated External Defibrillators (AEDs) for all hospital staff whether clinical or non clinical based.
- d) To initiate placement of BLS equipment in various strategic locations within the hospital grounds to facilitate a rapid response for medical emergencies.
- e) To make the hospital safe for emergency.

## 3. Code Blue for Hospital Sultanah Aminah

A Code Blue response for the entire Hospital Sultanah Aminah area can not be handled by any particular department by itself, for example the Emergency and Trauma Department (ETD), due to the logistic difficulties for example difficult terrain and unreasonable distance. If the Code Blue team is handled by the ETD alone, their team members may not be able to attend immediately to emergencies occurring far away from the ETD, for example the Bakawali and Teratai building, *Balai Pelawat*, and Specialist Clinic/Polyclinic or even hospital administration office.

A Code Blue response time ideally should be within a pre-determined service standard in order to improve chances of successful resuscitation; for example, 5 minutes from activation of Primary Code Blue to arrival of Code Blue team at the incident site. Therefore, each department has the responsibility of initiating resuscitation and basic life support for victims of medical emergencies in their workplace and surrounding area. This initial phase of the Code Blue response is the responsibility of each department as all these departments have doctors, paramedics or allied health personnel.

For example, the polyclinic team should cover Hospital Director Office; Imaging and Diagnostic department should cover their own department, Chest team clinic should cover the Teratai building and the Orthopaedic department should cover the main hospital block (*Induk*). The ETD will cover the non-clinical areas or departments in the hospitals such as main building (*Induk*) hospital lobby and overall coverage of the entire hospital grounds. The table in **Section 4** shows the proposal distribution of response teams by department and the area of coverage.

Each department has to have their own medical emergency response team to deal with any such emergency. The formation of these teams (Code Blue teams), training of its members and provision of basic resuscitation equipment kits will be coordinated by the Emergency and Trauma Department. The level of training (BLS), expertise and resuscitation equipment for all the teams will be standardized.

Each team will compose of 3 to 5 members. Basic emergency resuscitation kits, which are easy to transport, should be placed in strategic locations all over the hospital especially in areas where there is high probability of medical emergencies or where hospital staff have been trained

in BLS skills. At least one basic resuscitation kit should be placed in each department workplace so that the primary response teams can quickly mobilize and utilize the resuscitation equipment. If more kits or advanced resuscitation kits are available, especially if the area of coverage is big, then the effectiveness and response time of the Code Blue teams will be better. Further details on these aspects are described in Sections 5, 6, 7 and 8. Whenever a Code Blue is activated, the team in charge of the incident site will attend to the emergency immediately, bringing along their basic resuscitation equipment kits.

The Emergency Department will respond as Secondary Code Blue team to the site of a Code Blue incident once a Code Blue is activated. However, due the previously mentioned logistic difficulties, the response time may be more than 5 minutes. Hence, individual departments or units play a vital role in performing early BLS while waiting for advanced life support care to arrive from ETD. This will improve the victim's chances of survival.

It is equally important that all hospital personnel, especially non-doctors and non-medical, are trained in BLS so that they can also provide early basic life support/Cardiopulmonary Resuscitation (CPR) at the incident site while waiting for the Code Blue team to arrive, thus also improving chances of good outcome for the medical emergency victims.

#### 4. Code Blue teams of Hospital Sultanah Aminah, Johor Bahru

No	Zone	Department of Coordinator	Area of Coverage
1	Emergency & Trauma	Emergency & Trauma	Emergency Department area, Main and L&D building ground floor, Front Parking area, Main entrance lobby, Pharmacy Kecemasan, BDM and Unit Hasil. Second responder coverage of hospital area
2	<i>Bangunan Induk Bawah</i>	Orthopedic	Main building 1 <sup>st</sup> to 3 <sup>rd</sup> Floor
3	<i>Bangunan Induk Tengah</i>	Surgical	Main building 4 <sup>th</sup> to 5 <sup>th</sup> Floor
4	<i>Banguan Induk Atas</i>	Quality	Main building 6 <sup>th</sup> Floor
5	Polyclinic	KPPK (Clinic) Dermatology FPPU	Polyclinic Building, Unit Kewangan, Pantai Medivest, Transportation unit, Hospital Administration Office, Polyclinic Parking
6	L&D, Pusat Bersalin and PGMC	O&G	L&D Building & Royal Ward, Pusat Bersalin, PGMC
7	Medical Building/ Block	Internal Medicine	Block A, B, C, D, Psychiatric Clinic, Surau, Balai Pelawat, Cafeteria, Bangunan Lily
8	PP Block	Internal Medicine	PP1, PP2, PP3, Parking, Medical Record Building
9	Chest	Jabatan Perubatan Respiratory	Teratai & Bakawali Building, Occupational Therapy, Chest Clinic, CAPD & Haemodialysis Unit, Siantan Building
10	Imaging And Diagnostic	Radiology	Department of Diagnostic Imaging Department of Dietetics Department of Nuclear Medicine Parking, Integration Store
11	Forensic	Forensic	Department of Forensic Medicine
12	Haematology	Hematology	Haematology Building
13	OSH	OSH	Rose Building, Rafflesia Building
14	Blood Transfusion	Blood Bank	Department of Blood Transfusion, Unit Pendidikan Kesihatan, Unit Keselamatan

\*KPPK Ketua Penolong Pengarah Klinikal, FPPU Full Paying Patient Unit

## 5. Phases of Code Blue Rapid Response System

### i) Alert system

There should be a smooth and coordinated system in place in order to activate the occurrence of a medical emergency within the hospital grounds to the Code Blue team members.

The current telephone system will be used. If a medical emergency occurs, any hospital personnel anywhere within HSAJB can trigger the Code Blue response by call for help and activates:

- a) Local Alert: depend on the mechanism that made by Zone Coordinator, examples:
  - Announcement through the PA system
  - Display the names of Primary Code Blue team at the strategic location in their zone
  - Once the Code Blue case occurs, the Primary Team should leave her/his job and take the code blue bag and rushing to the location and start the CPR/BLS.
  
- b) Hospital Alert: Code Blue number 5555 →Medical Emergency Call Centre (MECC):
  - 1st Priority: To activate the Secondary Code Blue Team from the ETD (lead by Clinical Coordinator)
  - 2nd Priority: To check (as a second safety net) the activation of the Primary Code Blue Team.

Pre-determined members of the primary Code Blue response team in charge of the vicinity where the medical emergency has occurred will respond to the Code Blue situation as soon as possible. The team members will mobilize their resuscitation equipment kit and rush to the site of the medical emergency. The ETD Code Blue team will also respond to the Code Blue situation.

If any team is unsure whether the site of the medical emergency is covered in their area of coverage, they should still respond to that 'Code Blue' alarm.

The service standard for the duration of time taken between receiving the 'Code Blue' message (Code Blue activation) and arrival of the Code Blue team at the incident site is 5 to 10 minutes.

This service standard will be timed & subject to performance reviews and quality assurance checks in order to determine pitfalls in the alert system and maintain an efficient and rapid deployment of the 'Code Blue' team.

Responsibility of MECC toward Code Blue line:

- Anticipate every call through the Code Blue line is a true Code Blue case
- Code blue call should be answered as soon as possible (< 3 ringing)
- Minimal conversation/question and focus towards activation of code blue team as soon as possible.
- Vital information are
  - Name and particular either public/hospital staff/ paramedic/ Doctor
  - Exact Location
  - Trauma or medical case
  - Adult or pediatric
- Announcement to ETD Code Blue Team- CODE BLUE 3x in the respective area.
- The Code Blue Staff should leave his or her job and run with carry the crash cart to code blue scene
- Record and document in the Code Blue Census

**ii) Immediate Intervention at the Incident Site**

Staff at the site where a medical emergency (patient is unconscious or in cardio- respiratory arrest) has occurred have a responsibility to call for further help, initiate resuscitation using Basic Life Support (BLS) guidelines and use advanced life support skills and equipment if adequately trained and equipped.

- a) The Hospital Code Blue team number/MECC number will be placed in wards, departments, divisions, units, offices, lift lobbies, corridors, canteens, gardens, parking lots, walkways etc and other locations within the hospital grounds.
- b) The hospital personnel who found the victim should activate the Local Alert for Primary Code Blue team or instruct someone to do it for them; they should also call for further help from nearby staff if available.
- c) At the same time, activation of the Hospital Alert should be carried out by dialing the Hospital Code Blue number 5555 to activate Secondary Code Blue ETD team through MECC. Call taker at MECC need to fill up **Borang Panggilan Code Blue 5555** (Appendix 1) and send the form to Bilik Penyelia to keep in the Code Blue File.
- d) Parties responsible or in charge of a particular area (for example, Medical Officer on call or in charge of a ward) must also be informed to come to the site immediately.

- e) While awaiting the arrival of the primary responding Code Blue team, if BLS-trained staff are available, they should start BLS (airway positioning, rescue breathing, chest compression etc).
- f) If there are no BLS-trained staffs who can attend to the victim, the attending staff should wait for experienced help and keep the site clear from crowding (crowd and traffic control) if possible.
- g) If cardiac monitors, manual defibrillators or Automated External Defibrillators (AEDs) are available, these equipment should be attached to the patient to determine the need for defibrillation; this phase is done by experienced staff or staff trained in Advance Cardiac Life Support (ACLS).
- h) Each department, division, ward or unit should strive to ensure that their staffs are trained in at least BLS skills and their resuscitation kits or trolleys are well equipped with at least basic resuscitation equipment and placed in strategic locations.
- i) Staff at each department will be responsible for the maintenance of their resuscitation kits.
- j) If the victim is successfully resuscitated while awaiting the arrival of the Code Blue response team, the attending staff should place the patient in the recovery position and monitor the vital signs.
- k) **All code blue case should be sent to the ETD** for further evaluation and management regardless the outcome.

**iii) Pro QA and Pre-Arrival Activation (PIA) will be activated for cardiac arrest case.**

- a) Name of witness
- b) Contact number of witness
- c) Time
- d) Location of victim
- e) Victim info if available

**iv) Code Blue team arrival**

- a) Once the Code Blue team members receive the Code Blue activation, they have to stop their current tasks, collect their resuscitation kits (equipment bag) and rush to the site of the medical emergency on foot.
- b) They have to deploy themselves rapidly and smoothly and use the shortest route available.

- c) The response time (service standard) from time of Code Blue call/activation to arrival of Code Blue team at the scene will be recorded.
- d) There will be time when the arrival of ETD/Secondary Code Blue team is delay due to various reasons; therefore, Primary Code Blue teams should consist of hospital staff from local or nearer departments. Furthermore, it is imperative that any medical personnel at the scene start BLS steps.
- e) If the victim is still in cardio respiratory arrest when the Code Blue response team arrives at the scene, the team will take over the resuscitation task; the staff at the scene should stay around to provide additional assistance if required.
- f) **Every case of code blue will be sent to ETD regardless the patient condition** either sustain return of spontaneous circulation (ROSC) or not. In the ETD, patient disposition will be decided after integration of post cardiac arrest care.
- g) **However, if Code Blue is wrongly activated and the patient is in-patient, then the patient will be sent back to respective ward by respective ward doctor/staff for further management.**
- h) **All primary and secondary code blue team** need to fill up **Code Blue Reporting Form (Double Copy)** (Appendix 2) at ETDHSAJB and the carbon copy will be sent to Quality Department.

#### **iv) Definitive Care**

- a) Medical emergencies that occur in any area either clinical or non-clinical and either involve in-patient or out-patient (public) will be attended to by the Code Blue response teams; these patients will be transported to the ETD for further resuscitation and definitive care as these places usually do not have adequate infrastructure and equipment for advanced care.
- b) If resuscitation is unsuccessful (the victim dies at the scene), the victim still need to be transferred to the ETD for further documentation or confirmation of death.
- c) Every code blue case will be received definitive care after integration of post cardiac arrest care in ETD.

#### **v) Equipment and Training**

- a) All levels of hospital staff should be adequately trained in at least BLS and the use of the AED.
- b) AEDs and basic resuscitation equipment kits should be placed in various areas within the hospital grounds and be easily accessible for medical personnel and the primary Code Blue response team to use.
- c) Equipments for Primary Respond Team:

1. Personal Protective Equipments (Face mask, Apron, Glove)
  2. Bag Valve Mask
  3. Bacterial Viral (BV) Filter
  4. Guerdel/oropharyngeal airway
  5. Extraglottic devices (LMA/LT)
  6. Bag/ first aid box
- d) Basic resuscitation equipment for Secondary Respond Teams:
1. Personal Protective Equipments (Face mask, Apron, Glove)
  2. Oxygen tank and tubing
  3. High flow mask
  4. Bag-valve mask
  5. Bacterial Viral (BV) Filter
  6. Manual defibrillator or AED (For ETD and KIV to other discipline)
  7. Disposable and sterile gloves
  8. Oro-pharyngeal and naso-pharyngeal airways
  9. Extraglottic devices (LMA/LT)
  10. Wheelchair or stretcher
  11. Stethoscope
  12. Syringes and needles
  13. Intravenous drip set (including spirit swab, branula and plaster)
  14. Glucometer
  15. Drugs- Dextrose 50%, Dextrose 10%, Normal saline/Hartmann's, Adrenalin, Atropine, Amiodarone, Diazepam, Tab GTN and Aspirin
  16. 6 parameters of monitor (including BP, PR, RR, SPO2, ETCO2 and Cardiac Monitor)
  17. Torch light
  18. Mechanical CPR device
- e) Advanced life support training can be acquired through the CPR committee.
- f) The maintenance of these resuscitation kits is the responsibility of staff working in places where those kits are placed.
- g) Crash/resuscitation equipment and drugs – to be checked and restocked after each code blue response.

## 6. Code Blue team composition

The Code Blue team is available all the time.

1. Primary Code Blue response team members trained in at least Basic Life Support (BLS).  
The Code Blue team consists of 3 to 4 members:
  - 1 Medical Officer (if necessary)
  - 1 Assistant Medical Officer and 1 staff nurse **OR** 2 Staff nurses

- 1 Medical Attendant

**The Coordinator is responsible to submit the roster of local/primary Code Blue team to the MECC monthly.**

2. ETD Code Blue response team is equivalence to Pra-Hospital team. It is compulsory for each member trained in BLS.

The Code Blue team consists of 3 to 4 members:

- 1 Medical Officer (if necessary)
  - Yellow Zone Senior MO or
  - Green Zone Senior MO
- 1 Assistant Medical Officer (Clinical Coordinator)
- 1 Medical Attendant
- 1 Driver

Each code blue team member will have a designated responsibility such as the team leader, airway manager, chest compression, intravenous line, drug preparation and defibrillation.

## **7. Primary Code Blue Team Activation for Each Zone**

### **i) Zone Emergency And Trauma**

#### a) Area of Cover

- Emergency Department area
- Main and L&D building ground floor
- Front Parking area
- Main entrance lobby
- PGMC
- Pusat Bersalin
- Pharmacy Kecemasan
- BDM
- Unit Hasil.

#### b) Member of primary respond team

- 1 Medical Officer from Yellow Zone
- 1 Clinical Coordinator
- 1 Medical Attendant
- 1 Driver (For Out Building Case)

c) Method of activation

- Passerby call MECC (ext 5555) for code blue activation,
- Subsequently MECC will call for Code Blue Activation by using PA system at Emergency Department
- All the member of primary responds team assembly at Bilik Penyelia and collect all equipment and PPE
- Team members depart to the location

d) Location of equipment and PPE

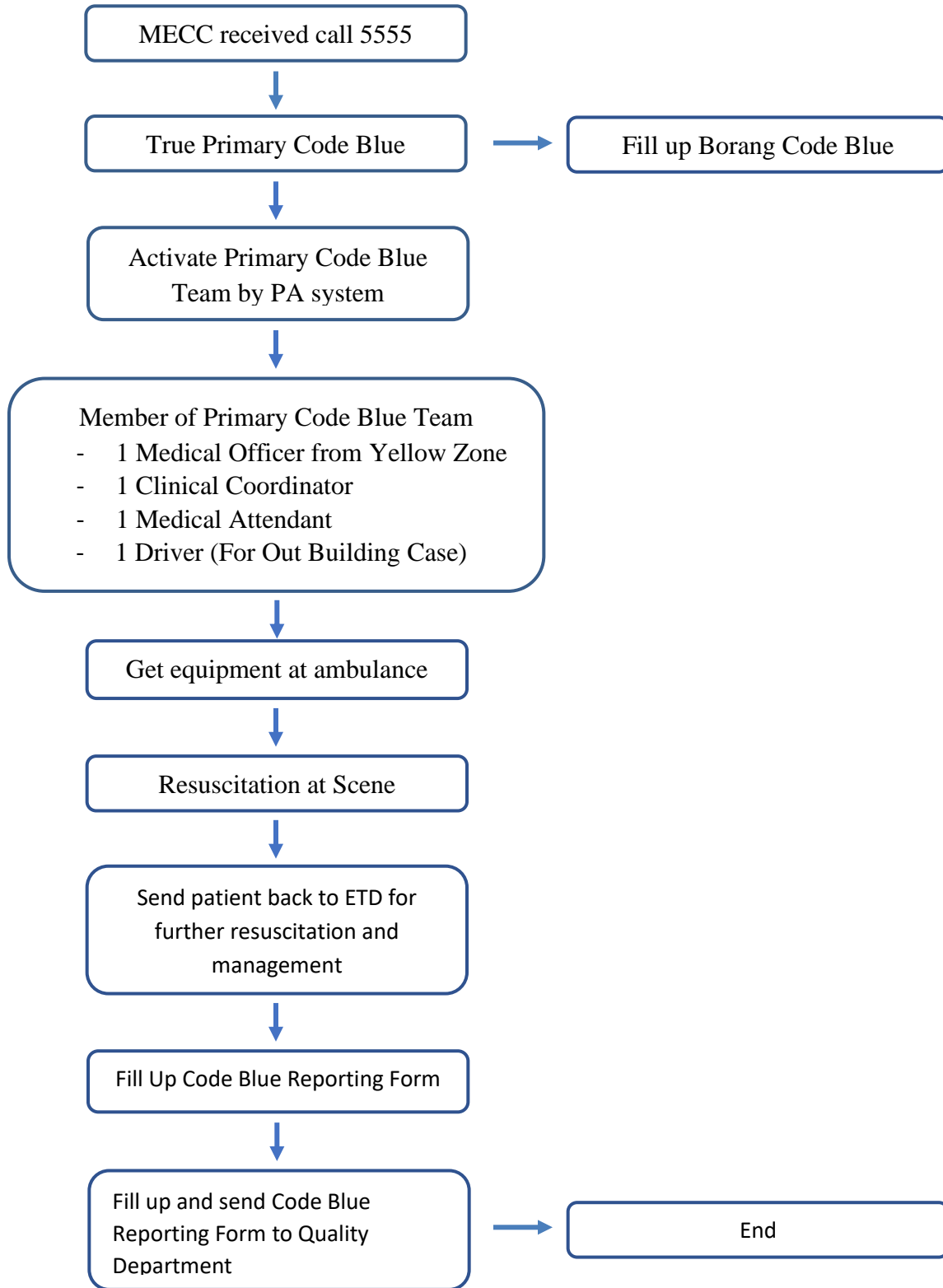
All equipment available inside ambulance and keep in a bag



PPE available inside PPE locker outside Respiratory and Infection Complex (RIC) exit door.



e) Flow chart of Primary Respond Team Activation



## ii) Zone Bangunan Induk Bawah

### a) Area of Cover

- Induk Block from Level 1 to 3
- Including stairs middle, east and west from between GF to Level 1 up till Level 3

#### Ward involved

- ICU, Operation Theatre, Cardiothoracic Ward, East 2 Ward, West 2 Ward, East 3 Ward, West 3 Ward.

### b) Member of primary respond team

- 1 Orthopaedic Medical Officer On call from active ward
- 2 Staff Nurses: Each ward to assign 2 SN in charge of code blue every shift

### c) Job Description

Active Orthopaedic MO On call: to be standby 24 hours and attend STAT if any call of code blue cases

Staff nurse (SN) in charge of code blue in particular shift:

- To get the personal number/speed-dial of the Active MO Orthopaedic On call to notify him/her directly.
- To check emergency trolley in all ward to make sure all equipment for resuscitation and PPE are available every shift.

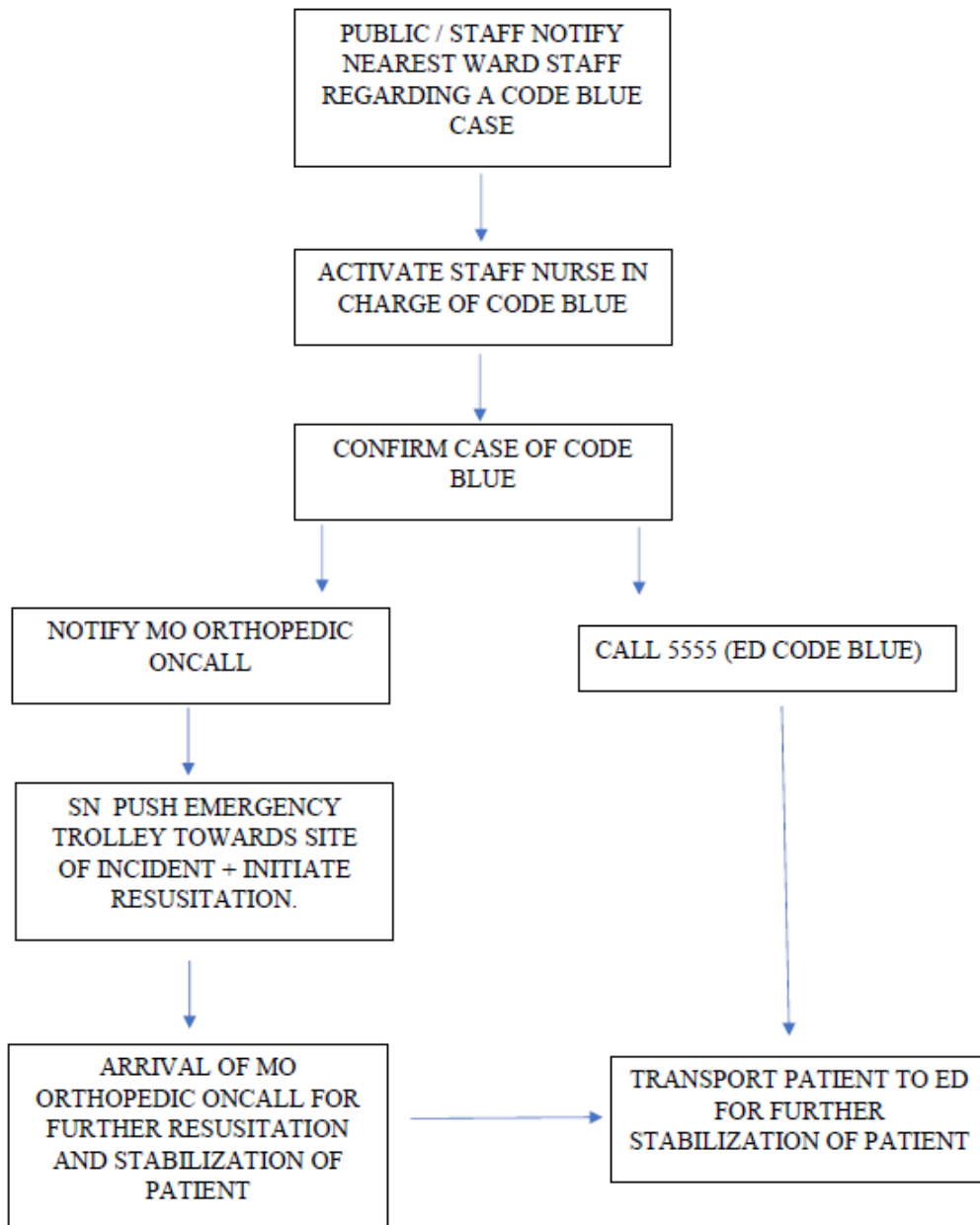
### d) Method of activation

- Public informed nearest ward case of code blue
- SN in charge of code blue to assess the patient to confirm case of code blue  
\*\* SN in charge to call for help from other ward staff (Doctors/SN/PPK) to attend patient as soon as possible
- Push emergency trolley from the nearest ward and to bring PPE towards the patient
- Local team will move the patient to the nearest open/safe place (away from danger) and proceed with resuscitation for the patient.
- MO Orthopedic On call Active Ward will attend the patient and continue resuscitation
- Arrival of ETD Code Blue team (Secondary Team)

### e) Location of equipment and PPE

- Emergency trolley (available in all ward)
- PPE (available in all treatment room)

## FLOW CHART OF CODE BLUE INCIDENT



### iii) Zone Bangunan Induk Tengah

#### a) Area of Cover

- West 4 Surgical
- West 4 NHDU female
- West 4 NHDU male
- East 4 NSM
- East 4 Paediatric
- East 4 Urology
- West 5 Ophthalmology / ENT
- East 5 Covid

#### b) Member of primary respond team (Nearest staffs at the scene)

- 1 Medical Officer
- 1 House officer
- 2 Staff nurses

#### c) Job description

- Staff nurse in-charge of code blue on particular shift
  - To get personal number / speed-dial of the sister in charge and active ward surgical MO oncall to directly notify him / her.
  - To check emergency trolley to make sure all equipment for resuscitation area available
- Sister in-charge per shift at each ward
  - As co-coordinators for code blue activation
  - To standby 24 hours and attend stat if any call of code blue cases
- Surgeon in charge
  - As coordinator for code blue activation
  - To standby and facilitate if any call of code blue cases

#### d) Method of activation

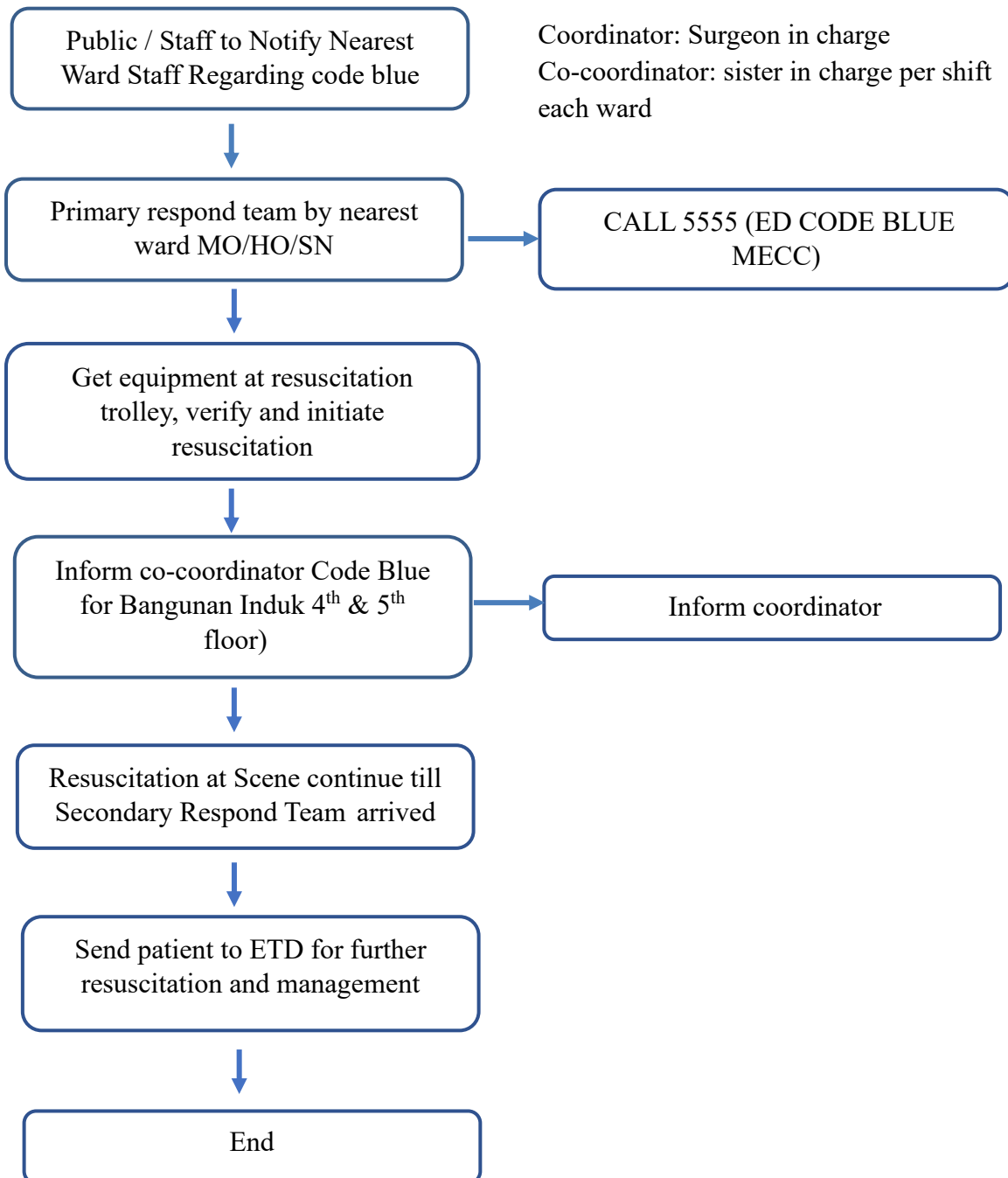
- Passerby / public / staff notify the nearest ward staff at counter regarding code blue
- Primary team respond by local/nearest ward MO, HO, SN.
- Verify situation and perform resuscitation.
- Inform sister in charge/surgeon in charge (coordinator of Bangunan Induk level 4 & 5 code blue).
- At the same time call MECC (ext 5555) for code blue activation.

- Resuscitation continues until MECC team come for secondary respond.

e) Location of equipment and PPE

- All equipment available at resuscitation trolley in each ward
- PPE will be placed beside each of resuscitation trolley.

f) Flow chart of Primary Respond Team Activation



#### iv) Zone Bangunan Induk Atas

##### a) Area of Cover

- Main building 6<sup>th</sup> Floor

##### b) Member of primary respond team (Unit Kualiti/Unit Kawalan Infeksi)

- 1 Medical Officer
- 1 or 2 Staff nurses
- 1 Medical Attendant

##### c) Method of activation

- Passerby call Unit Kualiti/ Unit Kawalan Infeksi staff
- Subsequently the staff will call for Code Blue Activation by calling 5555
- All the member of primary responds team collect PPE bag at the Quality Unit and if not available to get resuscitative equipment from West 5/East 5 wards.
- Team members depart to the location

##### d) Location of equipment and PPE

Equipment bag available at Unit Quality and if not, to get resuscitative equipment at level 5 ward emergency trolley

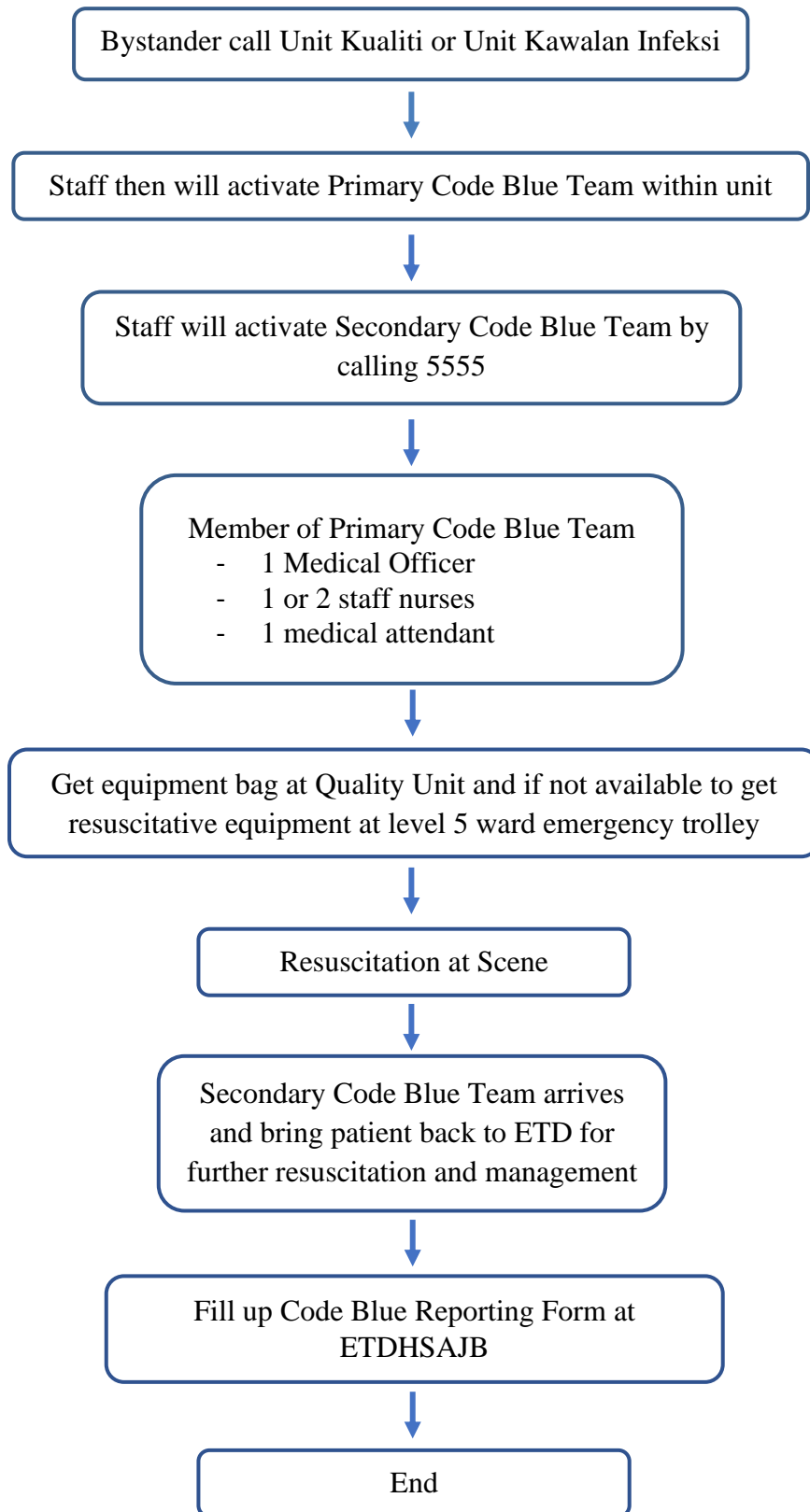
- Personal Protective Equipment (Face mask, Apron, Glove)
- Bag Valve Mask
- Bacterial Viral (BV) Filter
- Guerdel/oropharyngeal airway
- Extraglottic devices (LMA/LT)
- Bag/ first aid box



ENT / Ophthalmology



e) Flow chart of Primary Respond Team Activation at Level 6



## v) Zone Polyclinic

### a) Area of Cover

#### Polyclinic Ground Floor (Aras 1)

##### 1. O&G Clinic (A) covers

- O&G clinic with waiting area and ESWL

##### 2. SFUC (B) covers

- Minor OT, SFUC with waiting area and adjacent public toilet

##### 3. Ophthalmology (C) clinic covers

- Ophthalmology Clinic and waiting area, Endoscope room, Pharmacy with waiting area, Lift to Office and adjacent basement public toilet

##### 4. MOPC (D) covers

- MOPC with waiting area and corridor up to plastic clinic, Foyer 2, Organ donation room, Full Paying Patient Unit, *Kaunter Mesra* and adjacent staircase leading up to Matron Office

##### 5. Paediatric (E) covers

- Paediatric clinic with waiting area

##### 6. Plastic & Reconstructive Surgery (F) covers

- Plastic & Reconstructive clinic with waiting area.

##### 7. Cardiology (S) covers

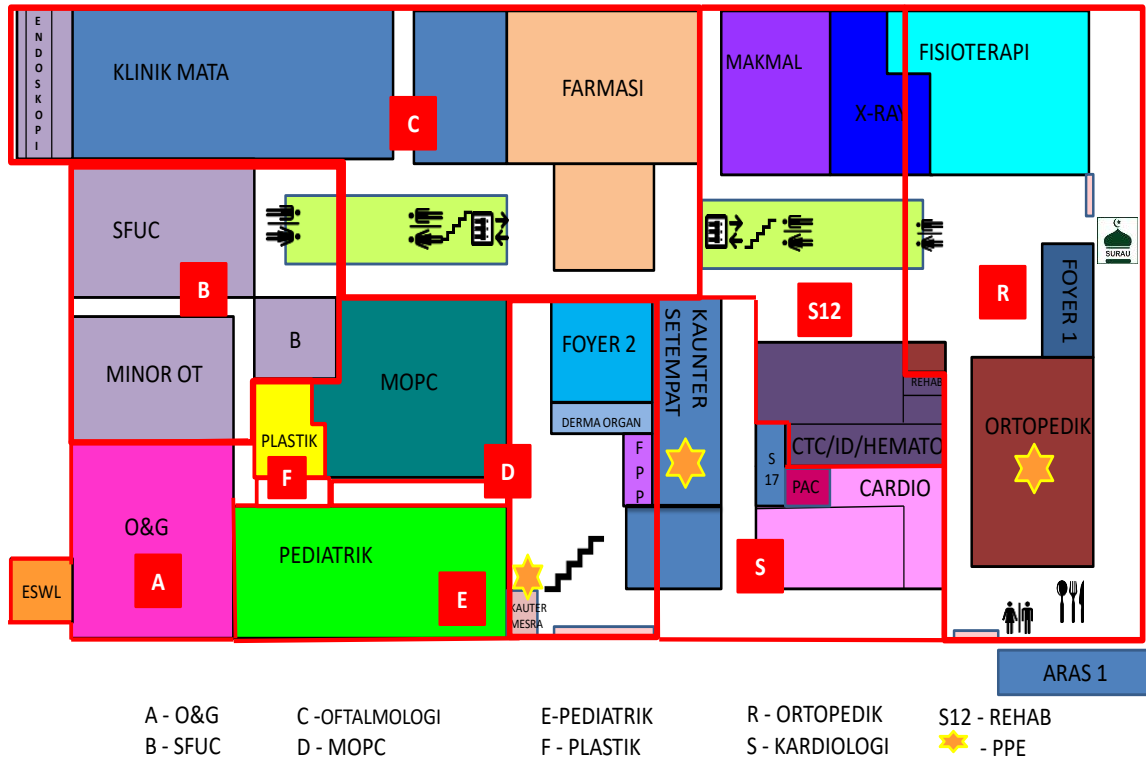
- Cardiology clinic with waiting area, Blood taking room (S17), Pre-anaesthesia clinic (PAC), *Kaunter Setempat* with waiting area and corridor in front up to the newspaper stand.

##### 8. Rehabilitation (S12) covers

- Cardiothoracic clinic, Infectious Disease (ID) clinic, Hematology clinic, Rehabilitation clinic with their respective waiting areas and corridors, Laboratory (*Makmal K*) and X-ray (*Kaunter N*) with waiting area and corridors, adjacent garden, Lift to Urology and adjacent basement public toilet.

### 9. Orthopaedic (R) covers

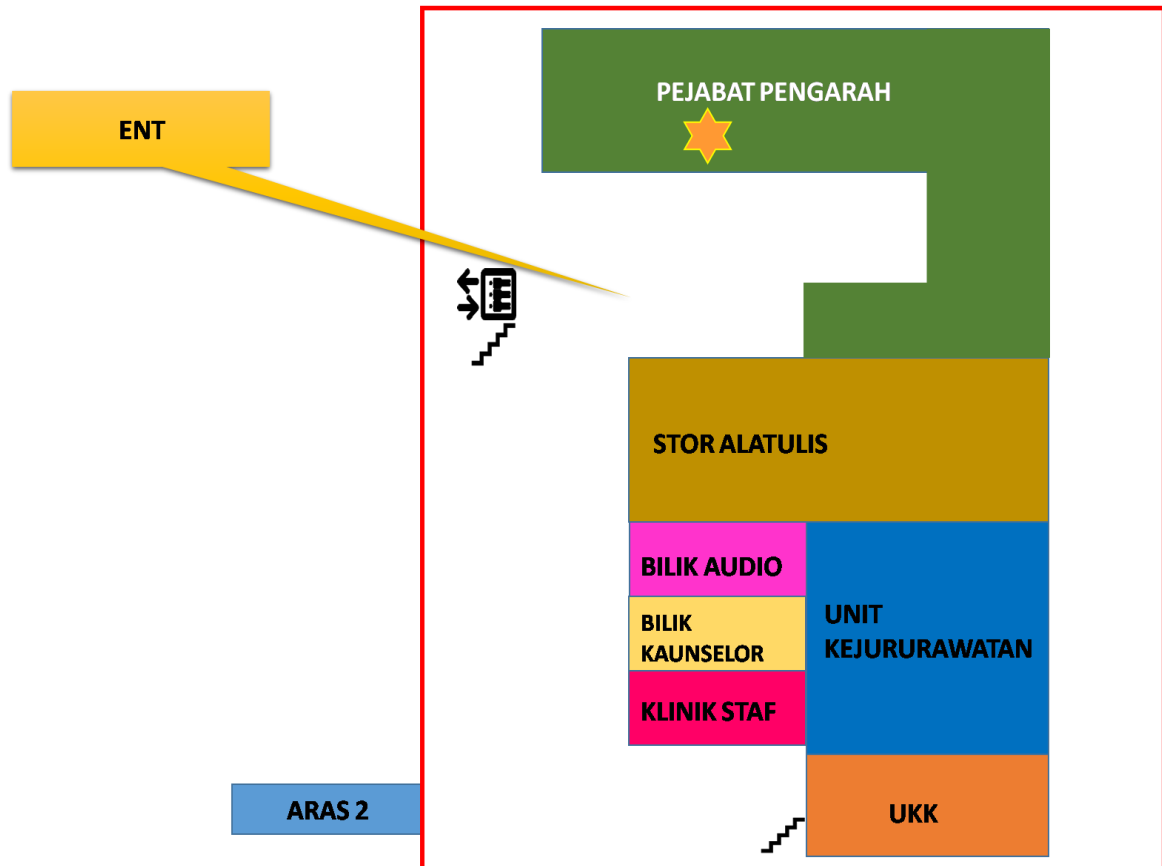
- Orthopaedic clinic with waiting area, Cafeteria, adjacent public toilet, Physiotherapy, Foyer 2, Surau and the walkway along the canal in front of surau.



## Polyclinic Mezzanine Floor (Aras 2)

Otorhinolaryngology (X) covers the entire floor which includes the administrative office, Stationary store, Audiology Room, Staff Clinic, Matron's Office and *Unit Komunikasi Korprat* (UKK).

\*In the presence of doctors in administrative office they will be the primary responder.



## Polyclinic 1<sup>st</sup> Floor (Aras 3)

### 1. Neurosurgery (V) clinic covers

- Neurosurgery clinic, the corridor outside their clinic and the staircase up to the *Unit Komunikasi Korprat* (UKK).

### 2. Dermatology (W) clinic covers

- Dermatology clinic, and the area by the side and the back of the clinic.

### 3. Otorhinolaryngology (X) clinic covers

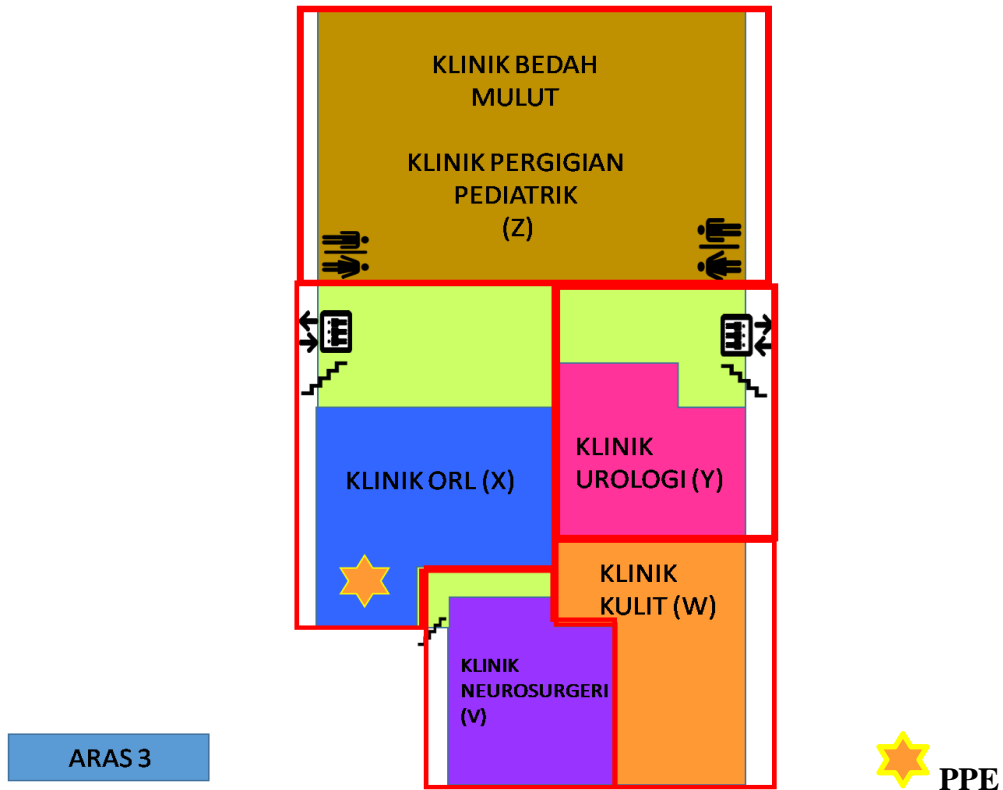
- Otorhinolaryngology clinic with waiting area, upstairs lift with the corridor in front of it, staircase, mezzanine floor and staff toilet.

### 4. Urology (Y) clinic covers

- Urology clinic with waiting area, lift, whole staircase up to mezzanine floor public toilet and the area by the side of the clinic.

### 5. Dental (Z) clinic covers

- Dental clinics with waiting area, adjacent staff toilet and public toilet and the area by the side and back of the clinic.



## Outside The Polyclinic

### 1. MOPC (D) covers

- In front of lobby patient drop off point, Differently-abled (*OKU*) car park in front of cafeteria, Polyclinic new car park and Specialist car park.

### 2. SFUC (B) covers

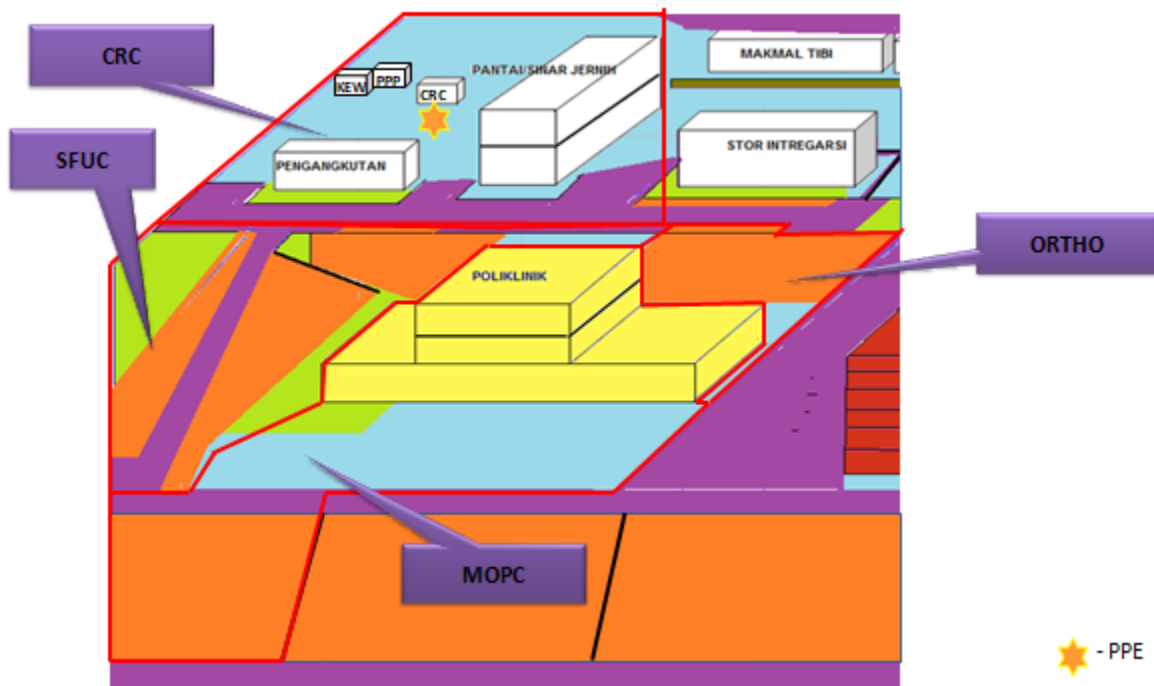
- Side of polyclinic staff car park after barrier up to Director of hospital car park

### 3. Orthopaedics (R) covers

- Car park behind Physiotherapy, Surau and the walkway.

### 4. Clinical Research Center

- Accasia Building including Hospital Supervisor Office (*Pejabat Penyelia*), Transportation Unit (*Unit Pengangkutan*), *Kewangan*, Medivest building and staff car park behind Clinical Research Center and the road in front from the departure barrier up to Integration store.



b) Member of primary respond team from each department

Individual departments in Polyclinic have their own Blue Code team which consists of:

- 1 Advisor – Department Specialist
- 1 coordinator - Senior Medical Officer or Department Supervisor who alerts the team in an event

Ground Team that responds

- 1 Medical Officer
- 1 Assistant Medical Officer
- 1 Staff Nurse
- 1 Attendant

Departments consisting of Allied Health and Non-Clinical Staff must have:

- 1 coordinator and
- 1 Other staff

\* The respective department coordinator is responsible to update the Medical Officer in-charge of the Polyclinic of their Blue code team members on 1st January every year.

c) Method of activation

- Any staff who spots someone who is unconscious or pulseless, immediately calls for help by asking nearest person to go to the nearest clinic/counter to ask for a doctor to attend to patient.
- In the meantime, he/she can start resuscitation if BLS trained. (\*However, during Covid-19 pandemic it is advisable to be in full PPE before attempting to resuscitate anyone.)
- The staff who receives the news at the clinic will inform the clinic Code Blue team coordinator.
- The coordinator calls the speed dial of the incident site coordinator and alerts the Polyclinic Whatsapp group for Primary Respond Team in-charge of incident site to rush to the site.

**\*Meanwhile the coordinator sends his team to the incident site for patient assessment and this team will be in site until the designated team arrives.**

- The Primary Respond Team from the department in charge immediately rushes to the location with the PPE and resuscitation kit.
- The Primary Respond Team activates the Secondary Respond Team (5555) after assessing patient if the criteria is met.
- The Polyclinic coordinator calls the respective department coordinator to confirm if the Code Blue Team has responded.
- The Primary Respond team fill up Code Blue Reporting Form at ETDHSAJB to send to Quality Unit.

d) Location of equipment and PPE

Key locations where PPE is kept:

- Kaunter Setempat
- Kaunter Mesra
- Orthopaedic Clinic
- Otorhinolaryngology Clinic
- Administrative Office
- Clinical Research Centre (CRC)

PPE kept at key locations will consist of

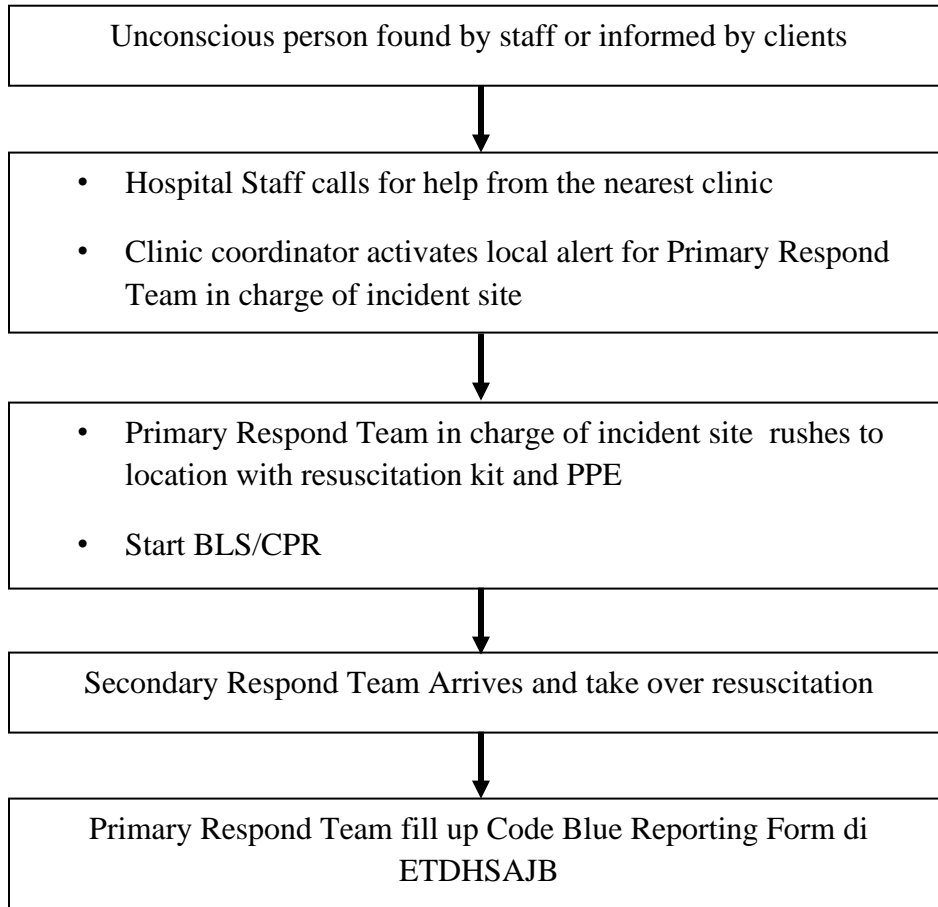
- Jump suit
- Mask
- Face shield
- Gloves

Mandatory for each department to have the following in their resuscitation kit

- Long sleeve apron
- Mask
- Face Shield
- Gloves
- Ambu bag with viral filter
- Guedal airway
- First aid box

e) Flow chart of activation of primary respond team

**FLOW CHART OF PRIMARY RESPOND TEAM ACTIVATION**



## vi) Zone L&D

### a) Areas of cover

- OAC
- Labor Room
- Bilik Saringan
- L&D 1<sup>st</sup> class
- Officers ward
- PGMC

### b) Members of Primary Respond Team

- Medical Officer
- House Officer
- Staff Nurse

### c) Method of activation

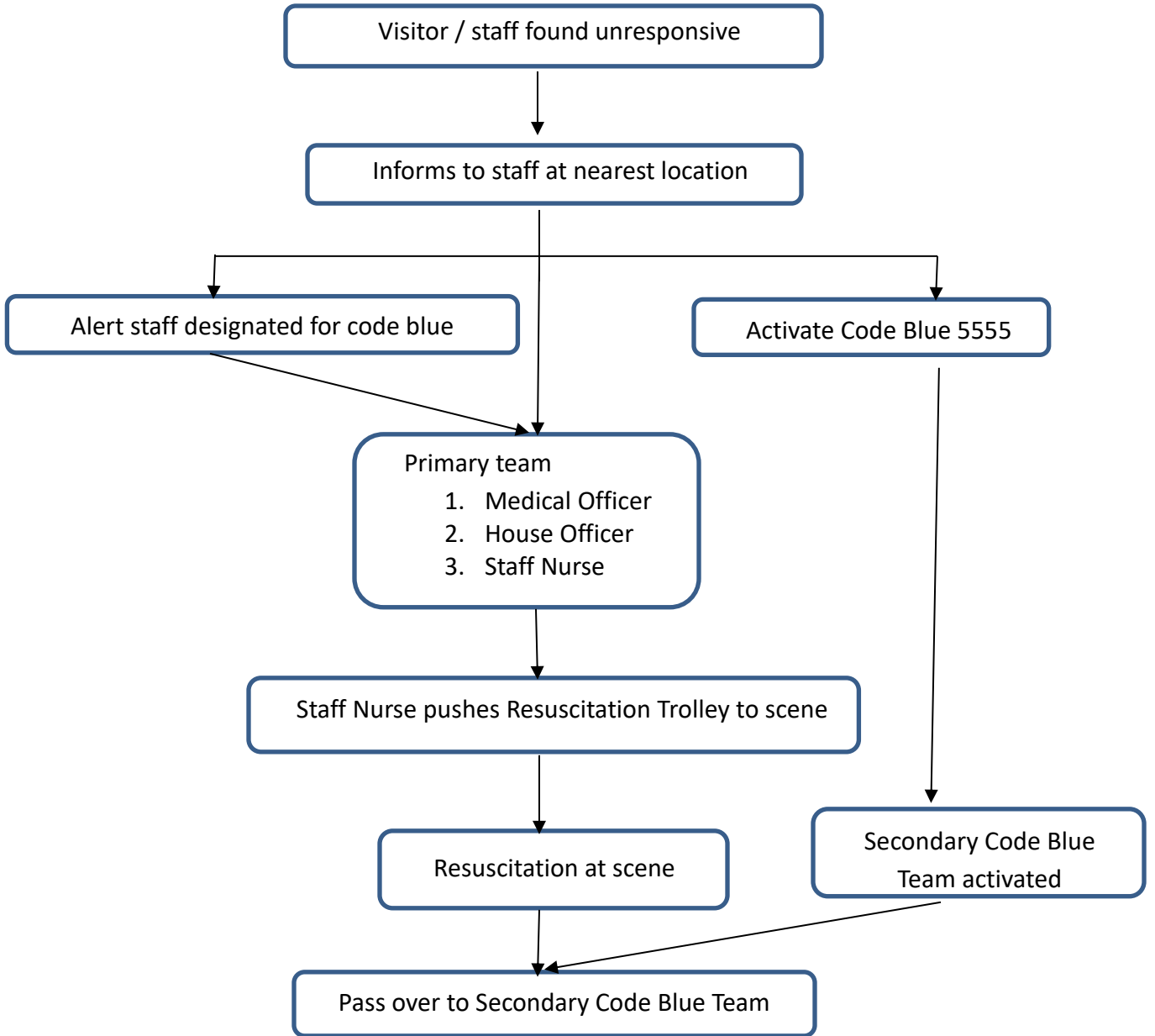
- Passer-by inform staff at nearby ward for code blue activation
- Staff inform Primary Respond Team (Medical Officer, House Officer and designated Nurse of ward) and call MECC (Ext. 5555) to activate code blue
- All members of Primary Respond Team collect PPE from ward and departs to scene
- Staff Nurse pushes ward's Resuscitation Trolley to scene

### d) Location of equipment & PPE

- Resuscitation Trolley – ward hallway
- PPE – Sister's room



e) Flow chart of Primary Respond Team



## **vii) Zone Medical Buildings/Blocks**

### a) Areas of cover

- Block A, B, C, D
- Psychiatry clinic
- Surau
- Cafeteria
- Balai Pelawat

### b) Members of Primary Respond Team

- 2 staff nurses
  - BR1 staff nurse for Block A and Block B
  - D1 staff nurse for Block C and Block D
- 1 HO/MO

### c) Method of activation

- A person coded
- Bystander runs to the nearest ward equipped with code blue bag located at:
  - o Block A, Block B – BR1
  - o Block C, Block D, Surau, Cafeteria, Balai Pelawat – D1
  - o Psychiatry clinic – Medical Daycare
- Bystander informs medical personnel
- Medical personnel calls 5555
- A primary responder team consisting of 1 MO, 2 staff nurses takes code blue bag and runs to the scene to deliver resuscitative measures until secondary response team arrives.

### d) Location of equipment & PPE

- BR1 – COVERS BLOCK A & B
- D1 – COVERS BLOCK C & D, SURAU, KAFETERIA, BALAI PELAWAT
- MEDICAL DAYCARE – COVERS PSYCHIATRY BLOCK

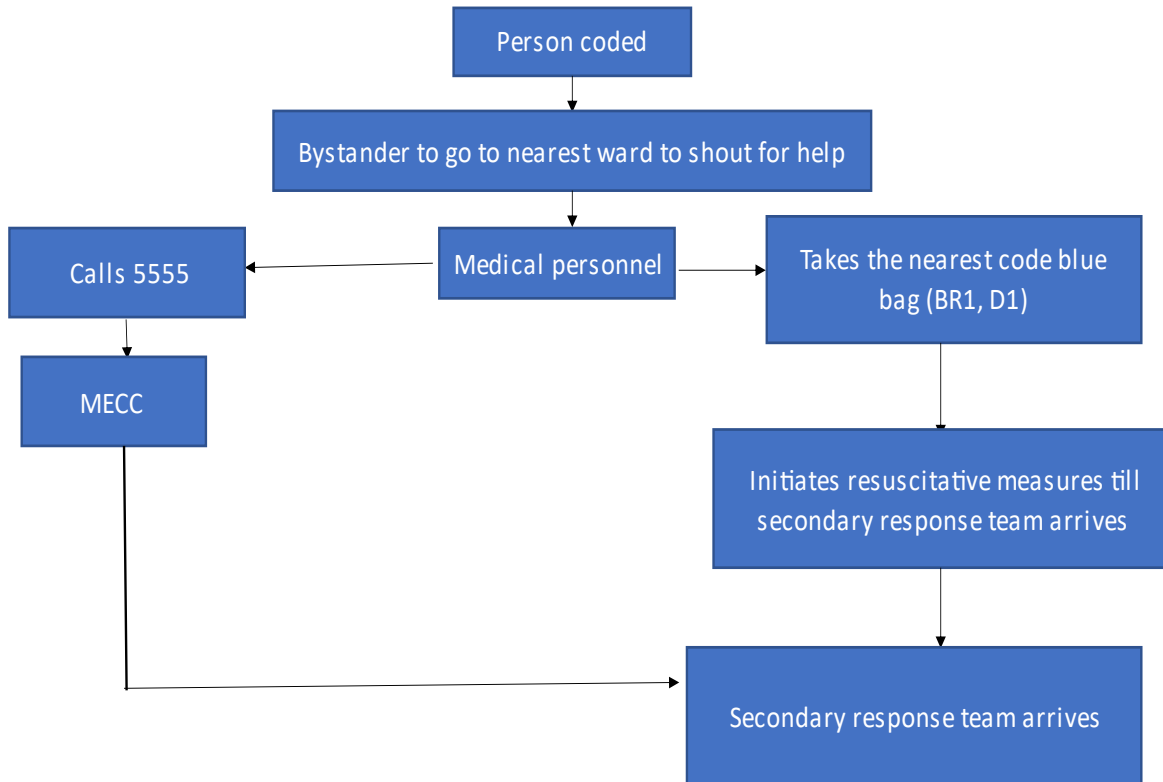
**PHOTO OF CODE BLUE BAG**



**CHECKLIST CODE BLUE EQUIPMENTS**

BIL	ITEM	QUANTITY
1	PPE (Face mask/ Apron / Glove)	5
2	Bag Valve Mask	1
3	Bacterial Viral (BV) Filter	1
4	Guerdel / Oropharyngeal air way Size 11 / 10 / 9 / 8 / 7	1
5	Extraglottic devices (LMA / LT)	1
6	Bag / first aid Box	1

e) Flow chart of Primary Respond Team



## **viii) Zone PP Block**

### a) Areas of cover

- PP1
- PP2
- PP3
- Record Office
- Car park

### b) Members of Primary Respond Team

- PP1, PP2, PP3 and carpark area:
  - 2 nurses and 1 MO from PP1
- Record office
  - 2 MOs and 1 record office staff

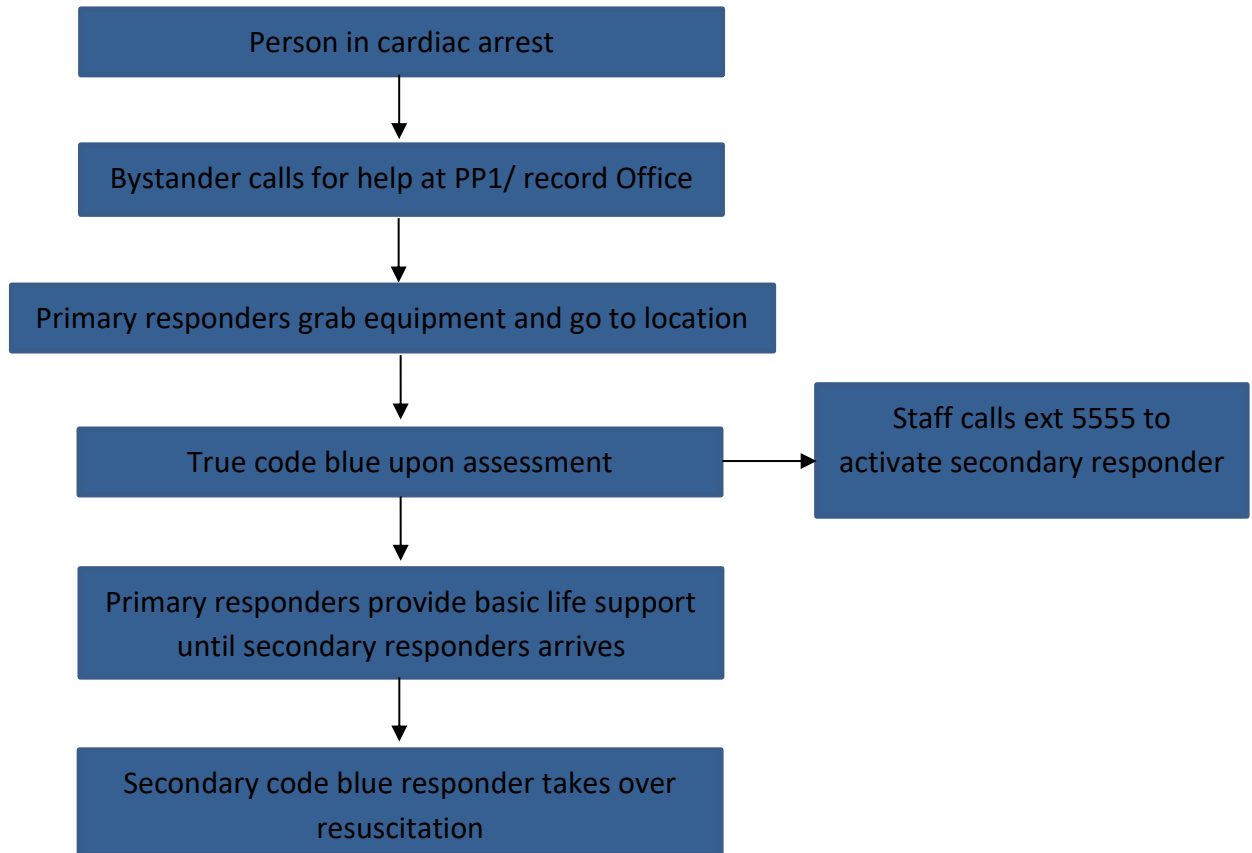
### c) Method of activation

1. PP1, PP2, PP3 and Car Park
  - Bystander to call for help at PP1 ward
  - SN from PP1 to call EXT 5555 to activate secondary code blue
  - 1 MO and 2 staff nurses from PP1 grabs code blue bag and go to location to perform resuscitation until secondary code blue arrive
2. Record office
  - Bystander to call for help at record office counter
  - Record office staff to call EXT 5555 to activate secondary code blue
  - 2 MOs and 1 staff from record office grabs code blue bag and go to location to perform resuscitation until secondary code blue arrive

### d) Location of equipment & PPE

- PP1
- Record office

**Flow Chart of Primary Respond Team Activation (PP1, PP2, PP3, Car Park & Record Office)**



## **ix) Zone Chest**

### a) Area of Cover:

- Chest Clinic
- Bangunan Teratai
- Bangunan Bakawali
- Hemodialysis Unit (HDU)
- Bangunan Siantan-(Continuous Ambulatory Peritoneal Dialysis (CAPD) and Neurofisiologi)
- Occupational Therapy
- Microbiology Unit

### b) Member of primary respond team

1. Unit Histopatologi (Ext: 2679) Unit Hematologi (Ext : 2362), Unit Patologi Kimia (Ext : 2630), Unit Mikrobiologi(2662)

→ 2 Medical officers

→ 2 Medical Lab Technologist (MLT)

2. Chest Clinic → 1 Medical Officer

→ 2 Staff Nurse

→ 1 MA

3. HDU, Neurophysiology, CAPD, Occupational Therapy

→ 2 Medical officers (From the Hematology Unit)

→ 2 Staffs (MA/ SN/ Occupational Therapist)

### c) Method of activation:

1. Unit Histopathology, Unit Hematology, Unit Pathology Kimia, Unit Microbiology, Chest Clinic

- Passerby contact the counter person
- MLT at the counter will alert the Medical Officer at respective unit.
- One medical officer will respond to the patient, another MO / Staff will inform the second responder by calling 5555, subsequently collect the equipment bag from the office/ reach out for the resuscitation trolley.

## 2. HDU, Neurophysiology, CAPD, Occupational Therapy

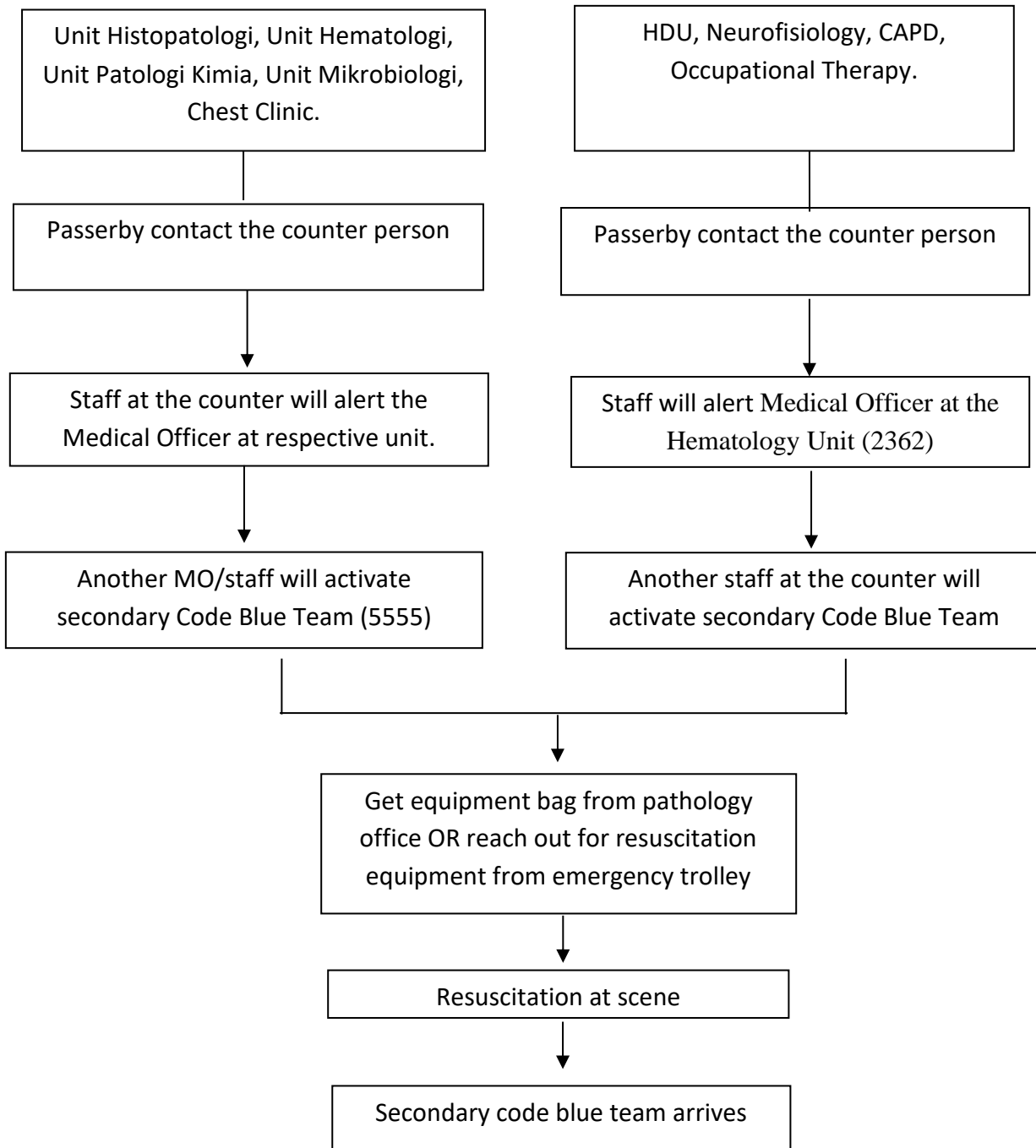
- Passerby contact the counter person
- Staff will respond to the patient, staff will inform the second responder by dialing 5555, subsequently collect the equipment bag from the office/ reach out for the resuscitation trolley.
- MA/ Staff will subsequently alert the Medical Officer at the Hematology Unit (2362)

### d) Location of the equipment and PPE

The equipment bag will be placed at the Office of Pathology Department (Bangunan Teratai) meanwhile the PPE will be collected from respective unit.

For CAPD, HDU and Chest Clinic: Resuscitation trolley and PPE is available at respective unit.

e) Flowchart of primary respond team activation.

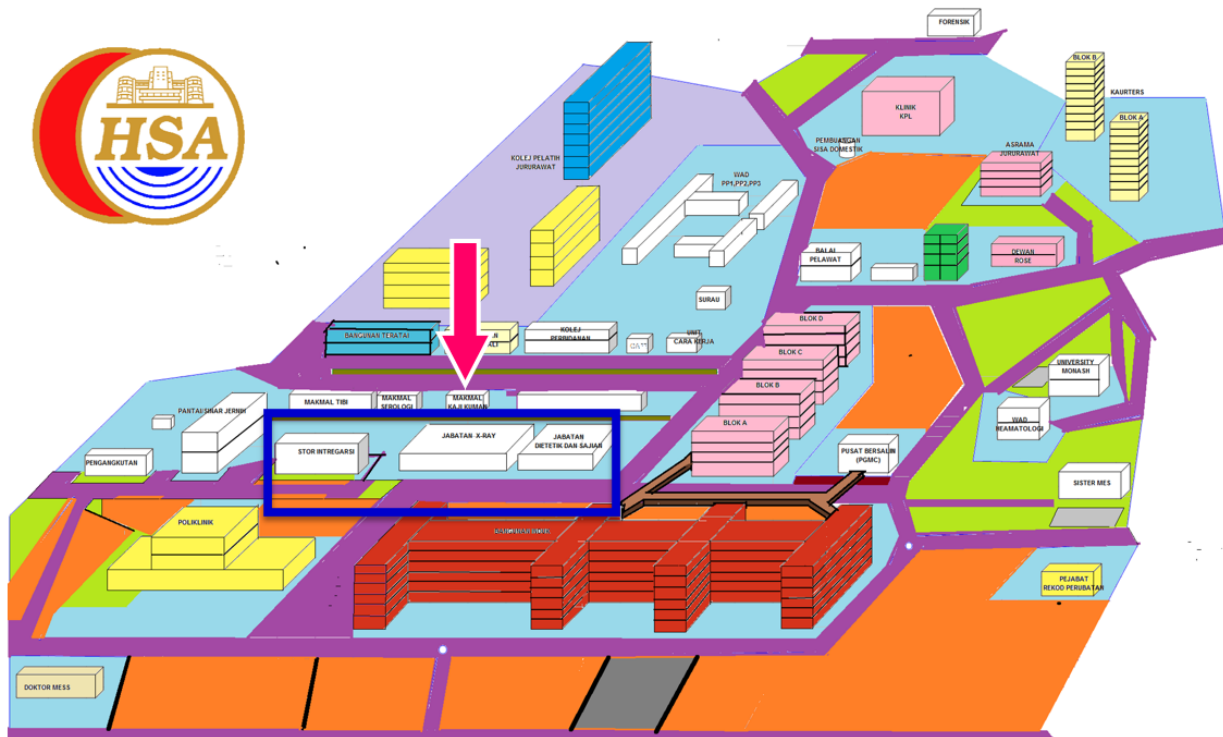


This is only applicable during office hour. After office hour and weekend, respective unit / department are required to directly contact Secondary Respond Team (ext: 5555)

## x) Zone Imaging and Diagnostic

### a) Area of Cover

- Department of Diagnostic Imaging
- Department of Dietetics
- Department of Nuclear Medicine
- Parking
- Integration store



### b) Member of primary respond team (outside vs inside department)

#### 1. Outside department but within coverage:

- 1 Medical officer: in charge of room 6 (ultrasound) or room 5 (ROTD)
- 1 Staff nurse: 'runner' or if no runner, person in charge in CT
- 1 Radiographer: 'runner' or person in charge of TPC
- 1 Health care assistant (PPK): 'runner'

\*ROTD: imaging requests room

- Radiology department consist of multiple modalities which includes X-ray, CT scan, MRI, ultrasound or angiography suite. Each modality has its own doctor, staff nurse and radiographer in charge.
- If the emergency happens within the department, the staff in each modality will be the primary respond team

### c) Method of activation

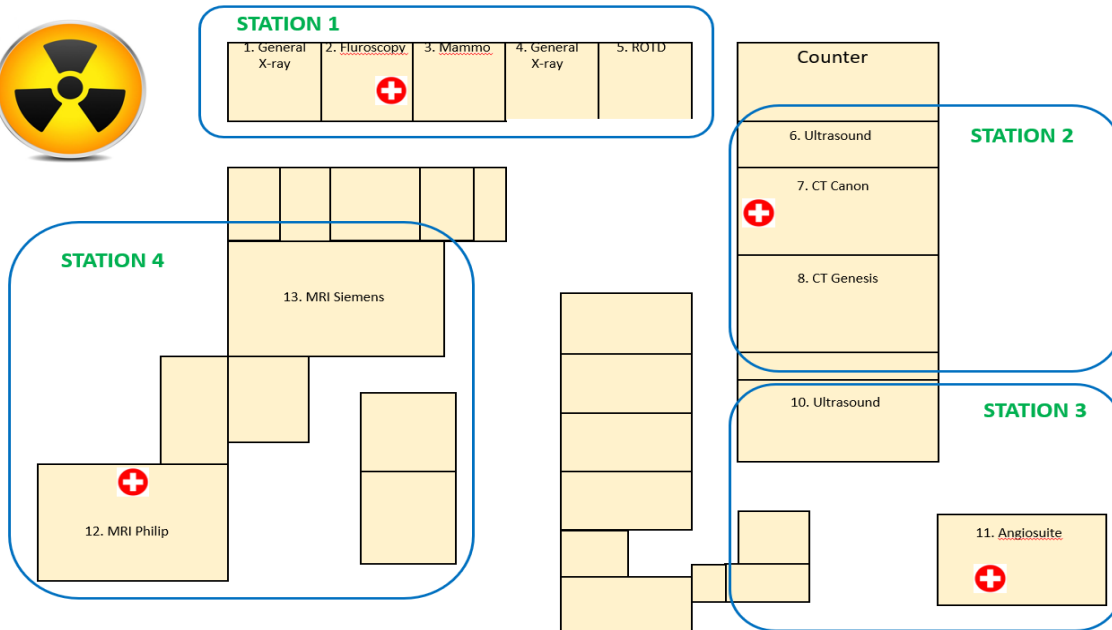
#### 1. Outside department.

- Staff at the site where a medical emergency occur call for further help at the radiology counter – located nearest to the main entry.
- Counter staff will alert:
  - Primary code blue team (room 6) – just beside radiology counter
  - Secondary code blue team (5555)
- Once the primary Code Blue team members receive the Code Blue activation, they have to stop their current tasks, collect their resuscitation kits (located at Room 6), wear PPE and rush to the site of the medical emergency.

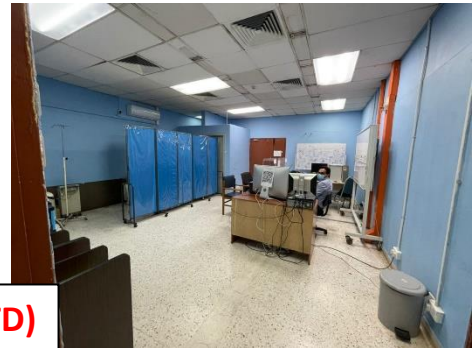
#### 2. Inside department

- Staff at each modality where emergency happens (eg: MRI, CT, ultrasound or angio) will alert the doctor, staff nurse and radiographers in charge (local primary responder).
- Activate secondary code blue (5555).
- The local primary responder will stop their tasks, wear PPE, get the emergency trolley and start resuscitation.
- Each stations have their own dedicated resuscitation trolley and PPE.

d) Location of equipment and PPE



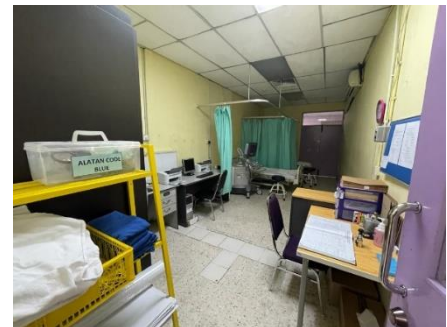
Main counter



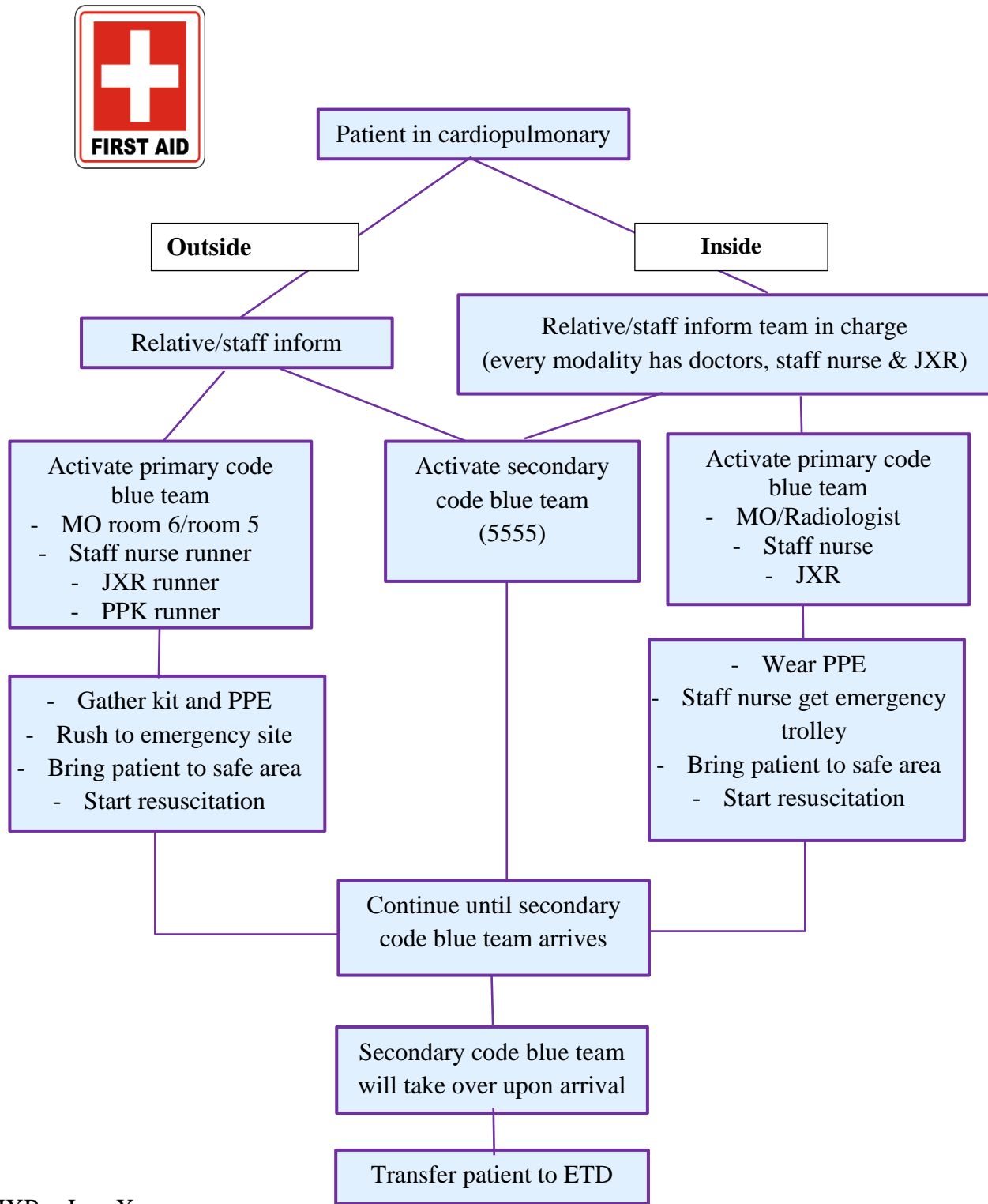
Room 5 (ROTD)



Ultrasound Room 6



e) Flow chart of Primary Respond Team Activation



\*JXR – Juru Xray

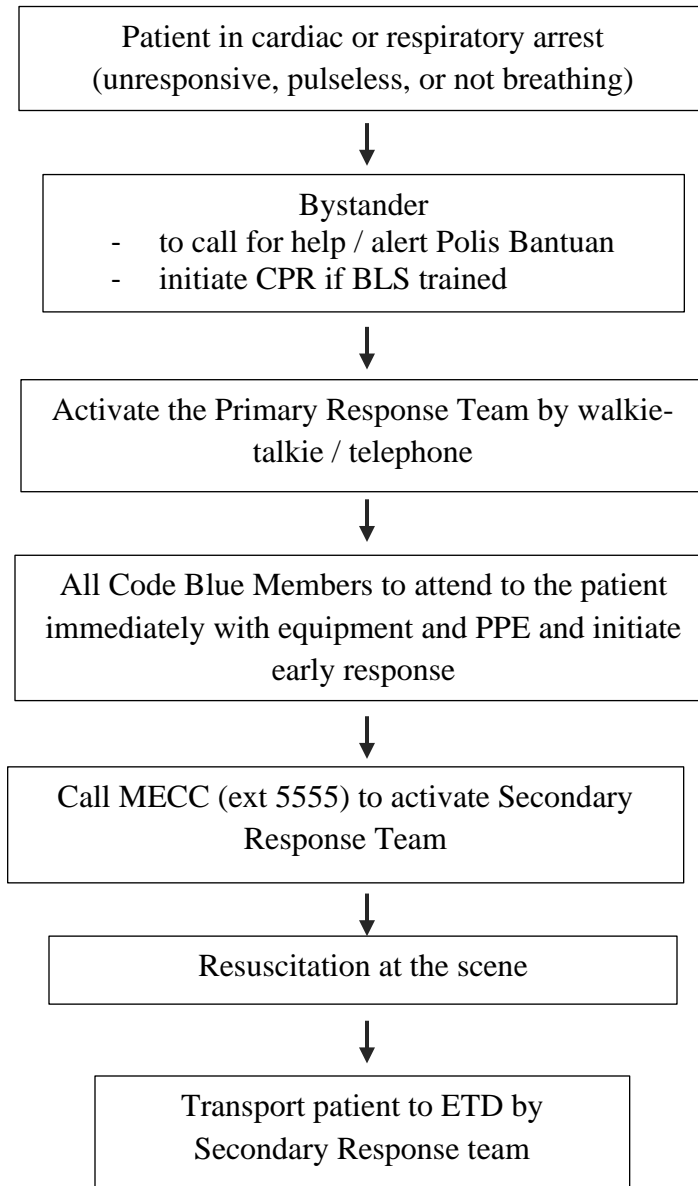
\*PPK – Pembantu Perawatan Kesehatan

## xi) Zone Forensic

- a) Area of coverage
  - Mortuary building including the car park compound
  
- b) Member of primary respond team
  - During office hours
    - Coordinator
    - Medical Officer Oncall
    - Medical Assistant
    - Medical Attendant
  
  - Out of office hours
    - Medical Assistant
    - Medical Attendant
  
- c) Method of activation
  - Passerby call/shout for help
  - Polis bantuan using the walkie talkie to alert the staff at the counter
  - Code blue activation by telephone to alert the primary respond team
  - Subsequently call MECC (ext 5555) to activate secondary response team
  - Collection of all equipment and PPE
  - Team members depart to the location
  
- d) Location of equipment and PPE
  - Personal Protective Equipments (Face mask, Apron, Glove)
  - Bag Valve Mask
  - Bacterial Viral (BV) Filter
  - Extraglottic devices (LMA/LT)
  - Bag/ first aid box



e) Flowchart of primary respond team activation.



## vii) Zone Haematology

### a) Area of coverage

- Haematology ward and carpark surrounding it

### b) Members of Primary Response Team

- Office Hours (Sun-Wed 0800H-1700H, Thu 0800-1530H)
  - 1 Medical Officer/Specialist
  - 1 Sister in Charge
  - 2 Staff Nurses
- After Office Hours
  - 2 Staff Nurses (at least 1 is BLS trained)

### c) Method of Activation

Passer-by calls for help and alerts medical personnel in the ward

### d) Location of Equipment and PPE

Plastic container case containing the necessary equipment are readily packed in Emergency Trolley in the ward right in front of Transplant Room 1

PPE available readily in boxes in front of Sister's Room on 2<sup>nd</sup> floor of Haematology Ward.



Figure 1 Emergency Trolley in front of Transplant Room 1



Figure 2 Equipment for Primary Response Team

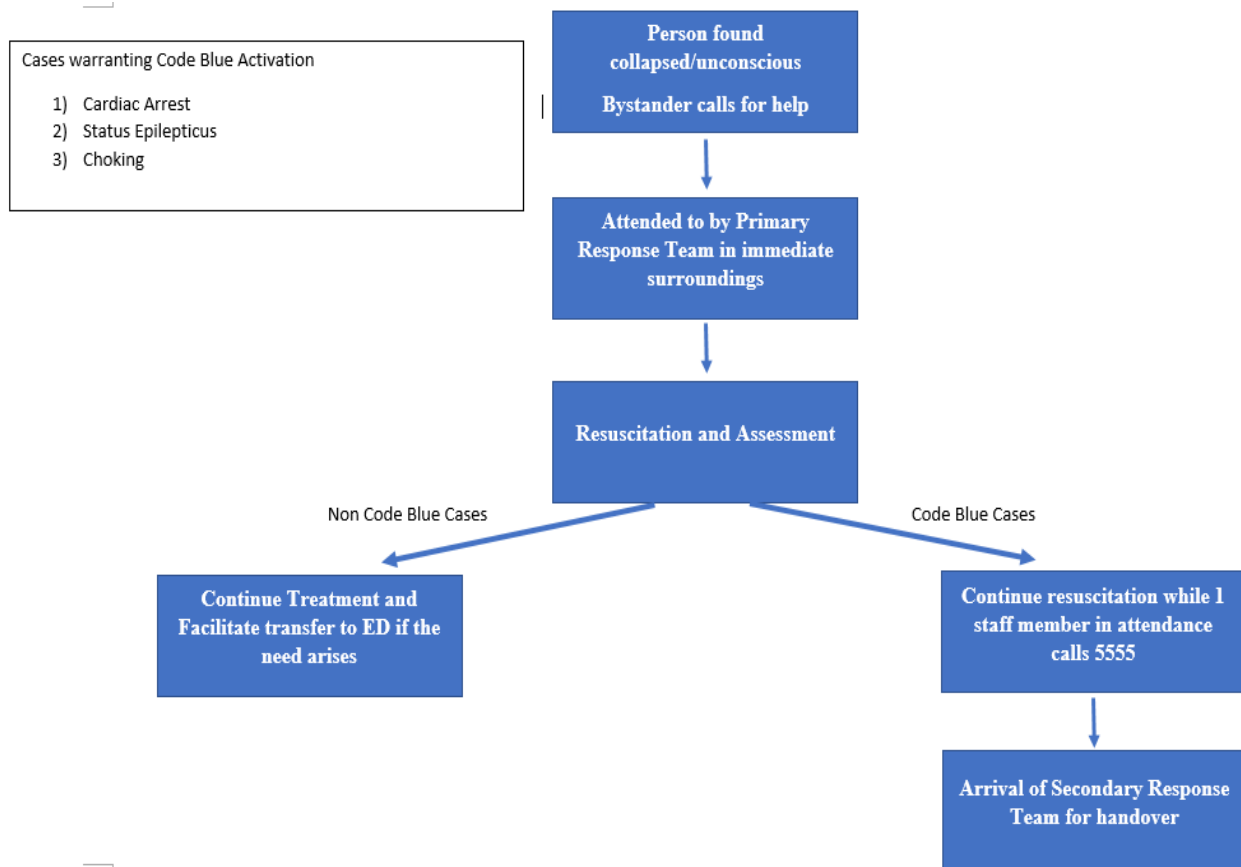


Figure 3 PPE in front of Sister's Room, Haematology Ward



Figure 4 PPE in front of Ward Sister's Room

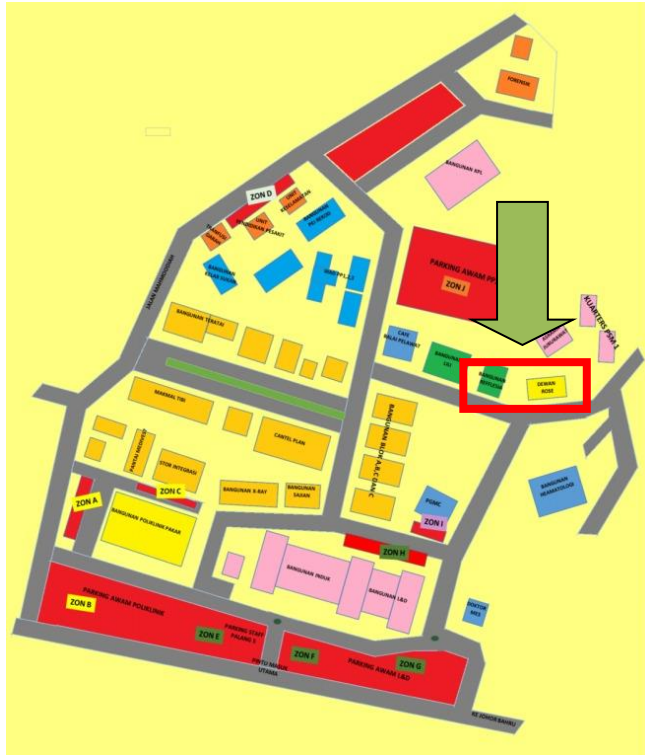
e) Flowchart of primary respond team activation.



### xiii) Zone OSH

#### a) Area of coverage

- Rafflesia building
- Rose building



#### b) Members of Primary Response Team

1. Rose and Rafflesia building during office hour (Sun-Wed 0800H-1700H, Thu 0800-1530H)  
→ **OSH and Psychiatry team**
  - 1 Medical Officer/ 1 House Officer
  - 1 or 2 Staff Nurse
  - 1 Medical Assistance
2. Rafflesia and Rose building after office hours → **Psychiatry team**
  - 1 Medical Office/ 1 House Officer
  - 2 Staff Nurses (at least 1 is basic life support trained)

### c) Method of Activation

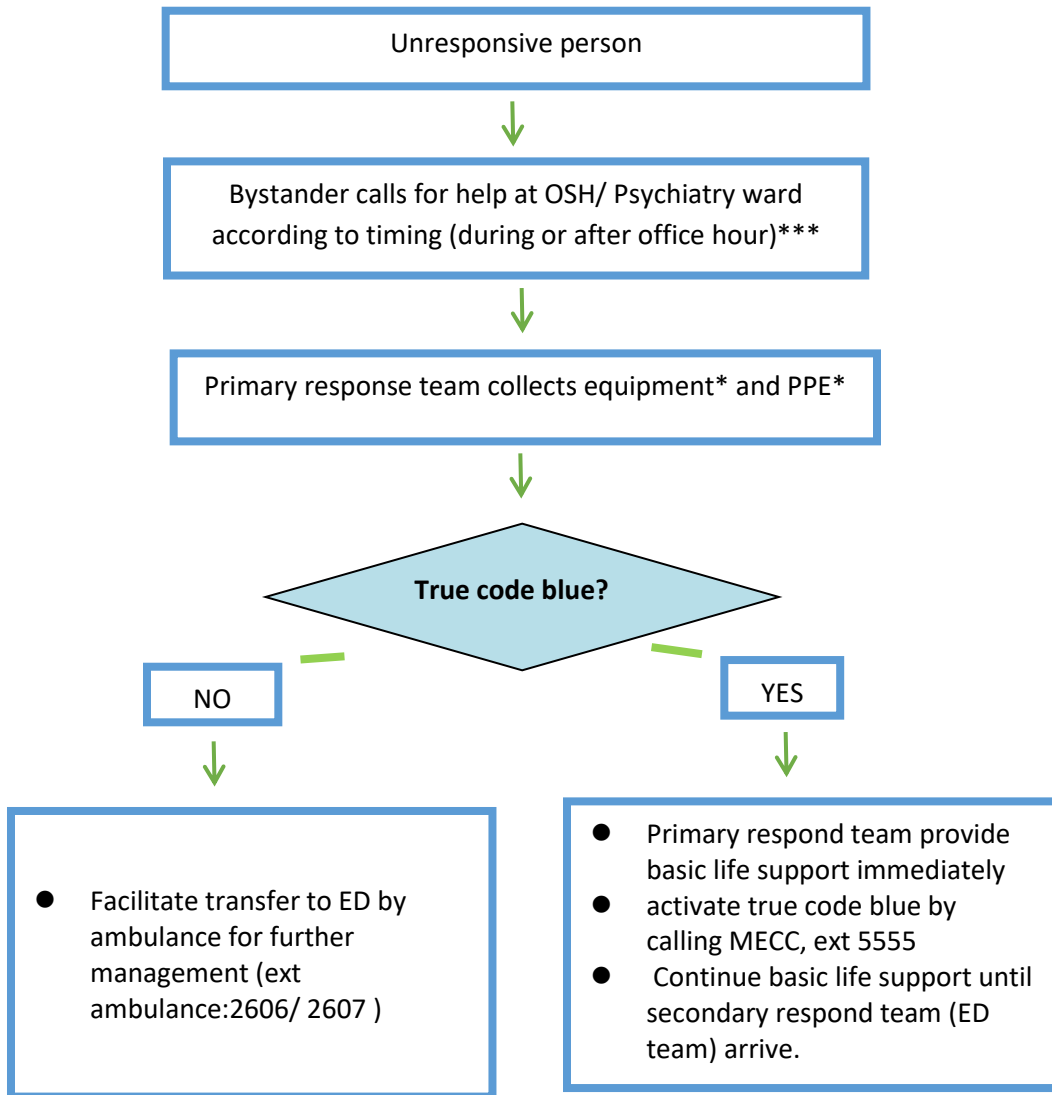
- Passerby alert primary respond team by:
  - a . call hospital phone number and direct to **OSH team** (ext: 3406) or **Psychiatry ward** (ext: 2693)
  - b . directly call the nearest staff available
  
- Once the Primary respond team members alerted, they have to stop their current tasks, collect the code blue bag\* (located at Rafflesia ward), wear PPE (face mask, apron, glove) and rush to the site of the medical emergency.
  
- All members must arrive at the scene with PPE and the equipment within 5 minutes after code blue activation.
  
- Assessment of the patient condition, if its true code blue case i.e. cardiac or respiratory arrest (unresponsive, pulseless, or not breathing),
  - a. to proceed with cardiopulmonary resuscitation
  - b. one of the primary response team will call Medical Emergency Call Centre, (MECC ext: 5555) for code blue activation.
  
- Resuscitation continued by primary response team while waiting for the secondary response team to arrive.
  
- Secondary response team arrives and sends patient to ETD by ambulance.

### d) Location of Equipment and PPE

Plastic container case containing the necessary equipment are readily packed in Emergency Trolley at the Rafflesia ward. The equipment includes:

- Personal protective equipment (face mask, apron, glove)
- Bag valve mask
- Bacterial viral filter
- Oropharyngeal airway
- Laryngeal mask airway
- First aid box

e) Flowchart of primary respond team activation.



**\*\*\* Primary respond team**  
**OSH team** - ext: 3406  
(office hour only)  
**Psychiatry team** - ext: 2693  
(during/ after office hour)

#### xiv) Zone Blood Transfusion

##### a) Area of coverage

- Pusat Pendermaan Darah HSAJB
- Unit Keselamatan
- Unit Pendidikan



Picture 1 : Area of Cover

##### b) Members of Primary Response Team

1. Each code blue team member will have a designated responsibility such as the team leader, airway manager, chest compression, intravenous line, drug preparation and defibrillation.
2. Action card will be provided near the Emergency Trolley.

- ✚ Medical Officer -
  - Medical Officer in-charge blood donation centre
  - As the team leader
  - Primary assessment
  - Choose person in charge and instruct the member of primary team
- ✚ 2 Staff Nurse / Medical Assistant
  - Among staff on duty in Pusat Pendermaan Darah
  - Leave all the current task
  - Bring the equipment to incident location
- ✚ Clinical Coordinator
  - Non-medical staff
  - To activate the secondary response team by calling 5555
  - Provide information needed:
    - Name of witness
    - Contact number of witness

- Time
- Location of victim
- Victim info if available

#### c) Method of Activation

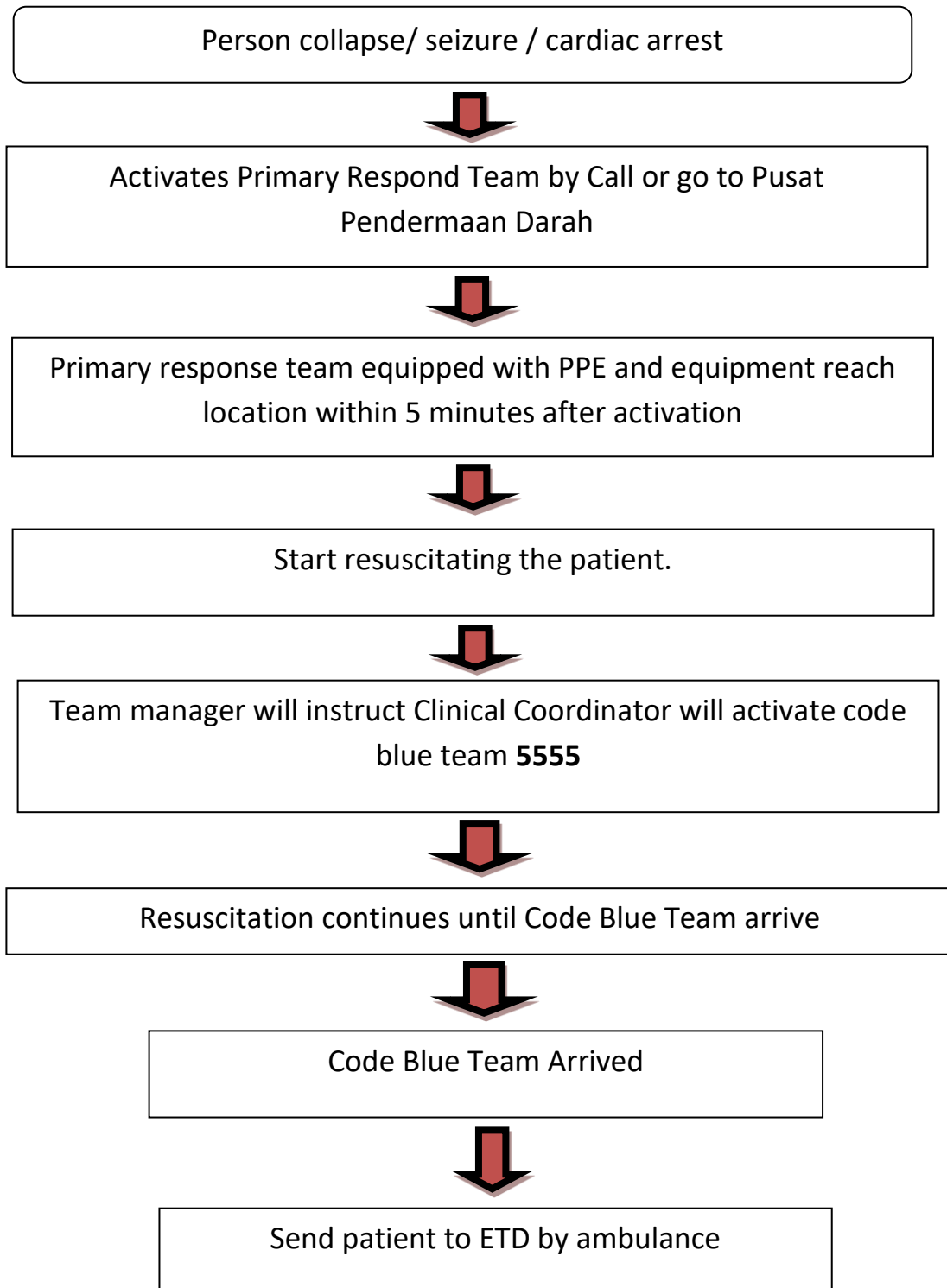
- Passerby call primary respond team
  - by phone call to Pusat Pendermaan Darah
  - direct call the nearest staff available
- Once Primary respond team activated,
- All member primary respond team wearing PPE, medical officer will go first to the scene while staff nurse or medical assistant will bring the equipment.
- All member must arrive at the scene with PPE and the equipment within 5 minutes after code blue activation
- Assessment patient condition and proceed for resuscitation. Team manager will assign each member's task such as airway, chest compression, intravenous line, drug preparation and defibrillation
- Clinical coordinator activates secondary Code Blue Team (ext: 5555) once ordered by medical officer in-charge.
- Resuscitation continued by primary response team while waiting for Secondary Code Blue Team arrive.
- Secondary Code Blue Team arrives and the send patient to ETD by ambulance
- During weekend or after office hour when no staff around can directly call 5555.
- Code blue extension and Pusat Pendermaan Darah extension number will be attached at the lamp pole along the alley.
  - Phone number Pusat Pendermaan Darah: 07-2200169
  - Code Blue : 5555

#### d) Location of Equipment and PPE

All equipment available in blood donation area, same location at emergency trolley



e) Flowchart of primary respond team activation.



## **8. Education, Training and Quality Assurance**

BLS (compulsory) or ACLS certification for team members is required every three (3) years.

Review of all policies and procedures.

Review of regulatory standards.

Response time (service standards) measurement.

An Audit

BLS, ACLS and MTLS/ATLS courses will also be provided to staff from various hospital departments and units to improve the standard of care and outcome for the code blue response as these staff will play a vital role as first responders for code blue situations.

Parties interested in attending these courses should contact the Emergency and Trauma Department or CPR committee (Anesthesiology department).

## **9. Communication**

MECC

Specific dial/ext or hand phone number to activate the primary Code Blue team

## **10. Coordination with other departments/units:**

Input will be acquired from other departments and units regarding the absence or presence of their current medical emergency response. If there is no emergency response plan in place, ETD of HSAJB will get input regarding their requirements for emergency medical care and coordinate with them on how to establish an emergency medical response using the code blue system. For departments already having a code blue response team, we would like to get input on how to improve the Code Blue response.

## **11. Budget requirements**

Basic and advanced resuscitation kits (bag/trolley/wheelchair)

Resuscitation equipment and drugs

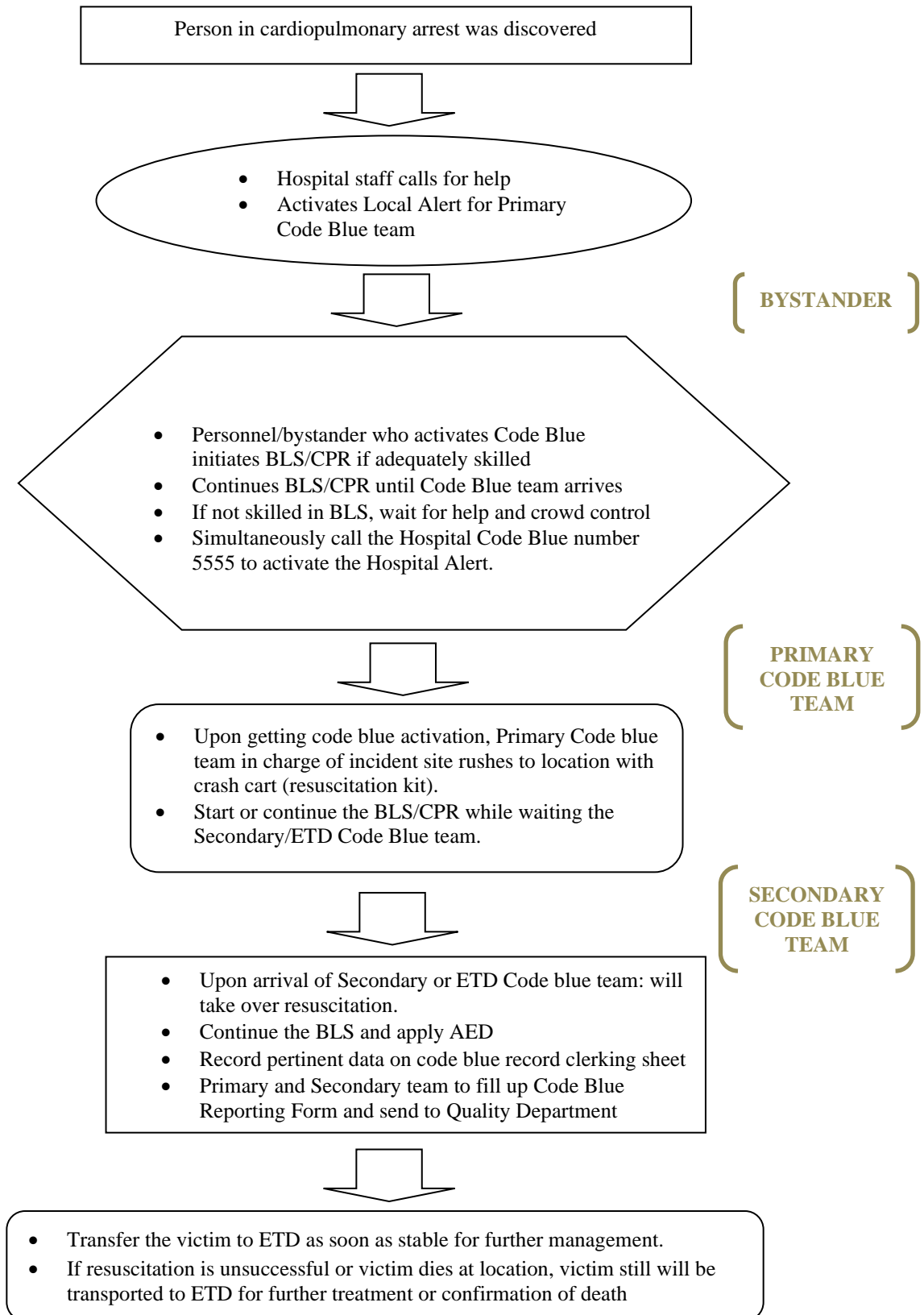
## **12. Dry run**

Trial runs and simulations will have to be conducted to iron out unanticipated and anticipated problems that will be faced when activating and conducting Code Blue responses.

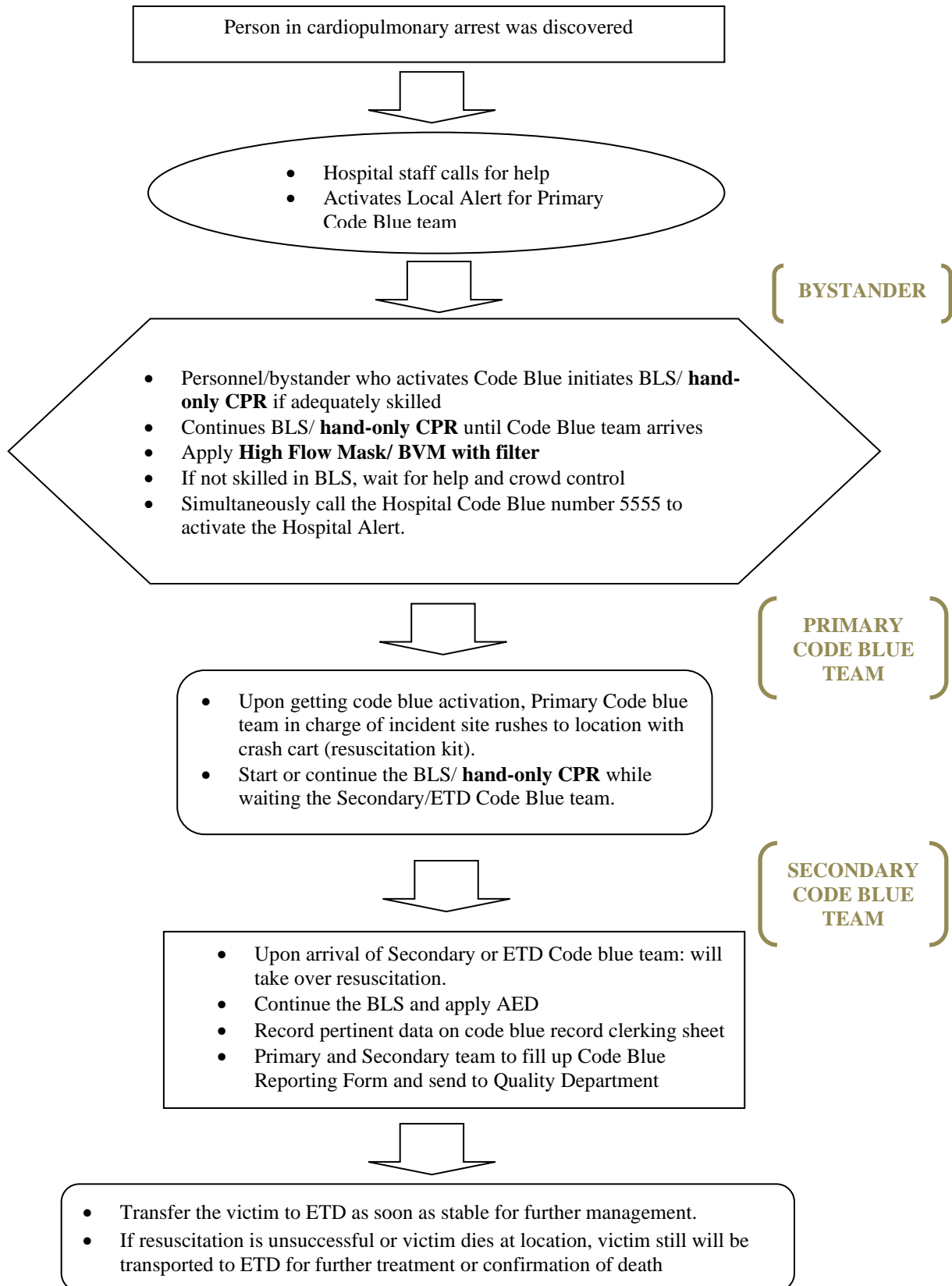
## **13. Target clientele and areas**

Any person (patients, relatives, visitors or general public) within the hospital area.

## 14. A) CODE BLUE ALGORITHM



## 14. B) CODE BLUE ALGORITHM DURING PANDEMIC COVID-19



## **15. Emergency and Trauma Department Phone Directory**

- a) Medical Emergency Call Center 1 : Ext 3248
- b) Code Blue Direct Call : Ext 5555

## Appendix 1

Borang Terima Panggilan Code Blue 5555

Masa: \_\_\_\_\_

Tarikh: \_\_\_\_\_

Tempat: \_\_\_\_\_

Nama Panggilan: \_\_\_\_\_

(Doktor / Staff Hospital / Public)

Type of Case: Trauma / Medical

Adult / Paediatric

Chief Complaint:

- Cardiac Arrest / Acute Myocardiac Infarction / Prolonged Seizure / Airway Obstruction
- Lain-lain (Sila Nyatakan) \_\_\_\_\_

Action: Code Blue Activation / Pra Hospital Activation / Bukan Code Blue

Sila hantar borang ini kepada penyelia untuk disimpan di dalam Code Blue Census

## Appendix 2

### Code Blue Reporting Form

Fasa Pengaktifan Primary Code Blue Team Masa \_\_\_\_\_

Fasa Pengaktifan Secondary Code Blue Team Masa \_\_\_\_\_

Tarikh \_\_\_\_\_

Tempat \_\_\_\_\_

Nama Call Taker (MECC) \_\_\_\_\_

#### Fasa Penghantaran Pasukan Code Blue

	Primary Code Blue (Nama)		Secondary Code Blue (Nama)
Ahli 1		Pegawai Perubatan	
Ahli 2		Penyelia	
Ahli 3		PPP	
Ahli 4		Pemandu Ambulan	

Masa Despatch Secondary Code Blue Team: \_\_\_\_\_

#### Fasa Rawatan Di Tempat Kejadian

Tanda Vital: BP: \_\_\_\_\_ HR: \_\_\_\_\_ SPo2: \_\_\_\_\_

Tahap Kesedaran (AVPU):

Alert  Verbal  Pain  Unresponsive

Rawatan Kecemasan:

CPR  Intubasi  Bantuan O2  Defibrillation

Other

Ubatan Intravena:

Adrenaline  Diazepam  D50%

IVD NS  D10%  Other

Provisional Diagnosis: \_\_\_\_\_

Ulasan Pakar Kecemasan:

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