GUIDELINE ON MANAGEMENT OF CORONAVIRUS DISEASE 2019 (COVID-19) IN DIALYSIS CENTRES & NEPHROLOGY UNITS

Key Recommendations

- All haemodialysis (HD) centres and state health authorities should have a contingency plan for treating haemodialysis patients during the containment and endemic phase of COVID-19 outbreak
- Hospitals should plan for the isolation and treatment of HD patients admitted to the ward. In-patient and out-patient facilities for HD needs to be upgraded. Requests for additional resources including human resource and budget needs to be planned
- Patients and health care workers should be provided with instructions on hand hygiene, respiratory hygiene and cough etiquette
- HD centres should implement measures to screen staff and patients who meet the clinical AND epidemiological criteria of COVID-19 (Refer Annex 1 Case definition of COVID-19)
- HD centres should have plans for the isolation for patients with confirmed, probable or suspected COVID-19 infection and close contacts
- Stable COVID-19 positive patients category 1 and 2 should be managed as outpatients at their own dialysis centre (refer Annex 28 Section 4). The centre is responsible for closely monitoring their own patients and reporting confirmed COVID-19 cases to the health authorities.
- Confirmed COVID-19 category 2 with warning signs to category 5 dialysis patients should be admitted to appropriate centres for close monitoring and continued haemodialysis support. The decision to admit for all other categories should be assessed on a case-by-case basis
- All patients who are close contacts of COVID-19 can be dialysed in their own HD centre, with adherence to the SOP
- HD centres will need to dialyse patients:-
  1. either in isolation rooms or separate shifts or in a separate area, at least 1 metre apart from other patients OR
  2. Private/NGO HD Centres to make arrangements for temporary transfer of their patients to other private HD providers with the capacity to accept them
- All HD health care workers should be provided with full personal protective equipment (PPE) and trained on these procedures

Each HD centre is responsible for ensuring arrangements have been made if the centre is unable to provide treatment to their own patients

Management of COVID-19 in Haemodialysis Patients

SCREENING AT HD CENTRE

- Check for fever, scan MySejahtera app
- Ask for clinical and epidemiological criteria of COVID-19 (Refer Annex 1 Case Definition of COVID-19)
- Check if patient has done any self-testing for COVID-19 in the last 2-3 days
- Fill up Borang Deklarasi Saringan Penyakit COVID-19 / MySejahtera COVID status

1. Confirmed COVID-19 category 1- 2 OR
2. Probable/suspected COVID-19 OR
3. Close contact

Confirmed COVID-19 category 2 with warning signs to category 5

Admit to hospital

Dialysis in own HD centre

1. Patient to wait at designated separate waiting area/in own vehicle until called into centre.

2. Patient to wear mask & advice on hand hygiene.

3. Determine transport to HD centre.
   - Own transport or dedicated vehicles
   - Do not use public transport (apply same precautions as per Annexe 2, section 7 for details on transport)

4. Hemodialysis at own HD centre
   - Isolation room at own HD centre or
   - If isolation room is not available, the HD session should be done at a separate or last shift of the day, at least 1 metre apart from other stations
   - for duration of isolation, please refer to current Guidelines (refer Annexe 2)

5. Dedicated equipment should be used and disinfected after haemodialysis session*

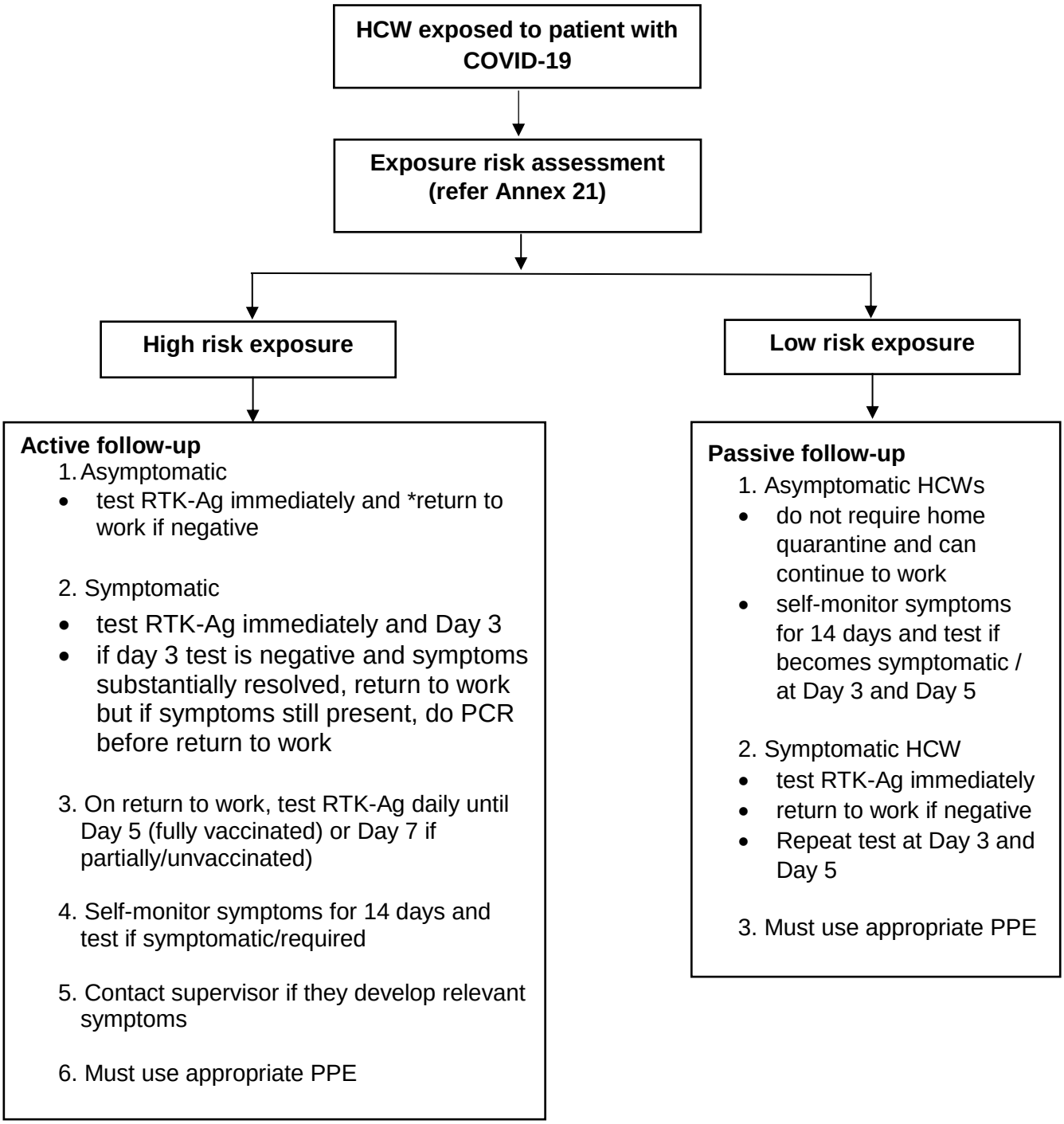
6. PPE for HD centre HCW (refer Annex 8 Infection Prevention Control Guidelines)

7. Disinfection of area after haemodialysis session

8. Continue home surveillance by own centre (use Annexe 2m Guidelines on Home Monitoring and Clinical Protocol at Primary Care for Category 1 and category 2 (mild) Confirmed COVID-19 cases). Ensure confirmed COVID-19 cases have been informed to health authorities

**If the equipment needs to be shared, it must be cleaned and disinfected thoroughly before use on other patients*

Workflow for Healthcare Workers Exposed to COVID-19



Notes:

- For summary of exposure category, recommended monitoring and management please refer to the latest version of Annex 21 Management of Healthcare Worker (HCW) During COVID-19 Pandemic and Annex 21a: Management of Healthcare Worker with Exposure To A Person Confirmed With COVID-19

- * HCWs who return to work should adhere to Return to Work Practices and Work Restrictions Recommendations (refer Annex 21 and 21a).

1. INTRODUCTION

Haemodialysis is by far the commonest (90%) modality of dialysis for patients with end stage kidney failure. There are currently close to 50,000 haemodialysis (HD) patients dialysing in more than 800 haemodialysis private and public centres. These centres may be stand-alone centres or located within hospitals. HD centres are available in almost all MOH hospitals. Most patients require HD 3 times weekly and require trained staff to deliver the treatment.

Thus, during an epidemic of acute respiratory tract infections, planning is required to ensure that HD patients continue to receive their treatments. Most hospitals however have limited ability to dialyse acutely ill and admitted patients.

As more COVID-19 infections are detected, facilities will need to plan in the event HD patients in their facilities become close contacts or confirmed/probable/suspected cases of COVID-19. As such, preparedness and response coordination with local health authorities are necessary to ensure HD services are provided to these patients.

This guideline is intended for use by both public and private HD centres. Each HD centre is responsible for ensuring arrangements have been made if the centre is unable to provide treatment to their own patients.

2. PREPARATION OF HAEMODIALYSIS (HD) CENTRES

Stringent measures should be taken by all HD centres to prevent COVID-19 contamination of the centre as disruption to HD services can be severe due to limitations in human resource and facility.

a. HD centres should control the flow of patients to the centre

b. Visitors are discouraged from entering HD centres except for emergency and critical cases whereby they must wear a face mask with at least 1 metre physical distancing and practice hygiene especially hand hygiene. (Refer to visitor policy in Annex 8 Infection Prevention Control Measures)

c. Screen all patients and visitors (if allowed) for fever and acute respiratory infection (ARI) symptoms at entrance to HD centre.

d. Visual Signages
   Signs should be posted at entrance to instruct patients to inform staff IF: -
   i. they have any **two of following symptoms** – Fever, chills, rigors, myalgia, headache, sore throat, nausea or vomiting, diarrhoea, fatigue, acute onset nasal congestion or running nose OR any **one of the following symptoms** – cough, shortness of breath, difficulty in breathing, sudden new onset of anosmia (loss of smell), sudden new onset of ageusia (loss of taste)
   ii. with history of contact with confirmed or suspected COVID-19 cases
   iii. have a positive self-test for COVID-19

e. Education of patients and health care workers (HCW):

   i. Patients and their carers should be provided with instructions about hand hygiene, respiratory hygiene, cough etiquette and disposal of contaminated items i. e. tissue, face mask.
   ii. HCW should be trained in infection, prevention and control measures as well as appropriate PPE use.

f. Screening and triaging - Refer to section 3 below

g. HD centre should ensure adequate supply of PPEs, hand sanitizers etc.

h. Provide designated separate area or separate shift for patients who are close contact/confirmed/probable or suspected of COVID-19

i. Place patient in designated waiting area if patient is identified as close contact/confirmed/probable or suspected of COVID-19. After patient leaves disinfect waiting area. (Refer to Annex 2c)

3. SCREENING AND TRIAGING

This is based on MOH recommendations of screening and triaging for COVID-19 which is generic across all disciplines (Refer Annex 2c)

a. How to screen and triage

i. A screening and triaging counter should be set up for screen and triage patients.
ii. HCW should be assigned at the screening and triaging counter.
iii. The HCW who are assigned at screening and triaging counter should wear PPE according to guidelines
iv. Screen patients and visitors for fever
v. The HCW should ask 3 questions to all patients and visitors

- Do you have any **two of following symptoms** – Fever, chills, rigors, myalgia, headache, sore throat, nausea or vomiting, diarrhoea, fatigue, acute onset nasal congestion or running nose OR any **one of the following symptoms** – cough, shortness of breath, difficulty in breathing, sudden new onset of anosmia (loss of smell), sudden new onset of ageusia (loss of taste)

- Do you have any contact with a confirmed/suspected COVID-19 case within the past 10 days?

- Have you done any self-test for COVID-19 in the last 2-3 days and if so, was the result positive?

vi. Refer to step d) if anyone has the above symptoms or epidemiological history
vii. All people entering the dialysis facilities should log their entry into MySejahtera app

b. Where to screen/ triage?

At all possible entry points

i. HD centres

ii. Peritoneal Dialysis (PD) units

iii. Nephrology/Medical clinics

iv. Nephrology/Medical wards

c. Who to screen/ triage?

Every patient and visitor

d. What to do if the screening question(s) is/are positive?

i. Do not allow the person to enter the HD centre

ii. The person should be given a 3-ply surgical face mask immediately and instructed to use hand sanitizer.

iii. The person should wait in designated area away from other patients or visitors.

All centres including private centres should contact their own person-in-charge/ affiliated nephrologist if the person is identified as a confirmed/probable/suspected COVID-19 or close contact. Those confirmed positive should be notified to the relevant authorities.

Note:

All units should have a policy on the procedure for patients or visitors with acute respiratory infection (ARI) but no history of travel or close contact with confirmed COVID-19 in the past 10 days. A doctor's advice should be sought.

4. COVID-19 TESTING

a. Who and when to test?

- Each centre should determine their own policy for surveillance of COVID-19 infection testing and establish screening and triaging counters and protocols.
- **Close contacts - patients or dialysis staff - regardless of symptoms should be tested at Day 3 and Day 5 post exposure.** The risk of exposure of patients and HCWs in a dialysis unit where patients are receiving dialysis treatment for few hours duration is deemed high because of risk of patients unmasking.
- When performing Aerosol Generating Procedures (AGP) procedure, appropriate testing and PPE including N95 masks and isolation gown should be donned by health care workers (refer to section 5g)

b. How should testing be done?

Testing for the presence of viral infection can be made with RTK-Ag or RT-PCR. However, RT-PCR is more sensitive and specific.

5. ISOLATION OF SUSPECTED, PROBABLE AND CONFIRMED CASES AND CLOSE CONTACTS

All hospitals & HD centres should have an isolation policy for patients with suspected/probable/confirmed COVID-19 cases and close contacts.

a. HD patients who require admission:

i. The Person-In-Charge (PIC) and/or affiliated nephrologist of HD centre should be informed.

ii. The centre should contact the Regional Bed Management Unit (BMU) or equivalent

iii. The PIC and/or affiliated nephrologist should contact the nephrologist at the admitting hospital to discuss the case.

b. HD patients who are admitted:

i. should be dialysed in isolation rooms

ii. If isolation rooms are not available patients should be cohorted and dialysed in the ward.

iii. Confirmed, probable and suspected cases and close contacts should be dialysed in separate isolation rooms or wards and if this is not possible, in separate areas at least 1 metre apart in the ward.

c. HD patients who are asymptomatic close contacts /confirmed COVID-19 category 1-2 /probable or suspected COVID-19 cases and quarantined at home:

i. can be dialysed in their own HD centres
ii. should be dialysed in a separate isolation room or area
iii. should be dialysed at a separate shift or the last shift of the day
iv. should continue wearing a minimum of 3 ply face mask throughout the time they are in the dialysis centre. Eating during the dialysis procedure should be discouraged.
v. appropriate transport arrangements should be made - public transport should not be used
vi. Isolation

- should be advised to arrive last, wait in their own vehicle until dialysis station is ready (if applicable) and hence can be directed immediately to dialysis chair
- should not be placed in the same waiting area with other patients
- should be dialysed in isolation rooms equipped with exhaust fan and/or an air filtration device (if available). Doors should be closed.
- if isolation rooms are not available, patients should be masked and dialysed in a separate area at least 1 metre away from the nearest patient stations in all directions. The area should be located at the end of the unit away from the flow of traffic and should be dialysed at the last shift of the day or a separate shift.
- a separate entrance pathway should be identified (if feasible)
- disinfection should be performed at the end of the shift including medical and non-medical equipment and surfaces with recommended disinfectant
- terminal cleaning should be considered if a negative case needs to be dialysed in the same area following a confirmed COVID-19 case
- health care workers should wear appropriate PPE

6. HAEMODIALYSIS HEALTH CARE WORKERS

a. HD HCW should receive regular training in infection prevention and control protocol including contact, droplets and airborne precautions.
b. HD HCW should receive training on appropriate use of PPE including donning and doffing procedures.

c. Close contacts, confirmed, probable and suspected COVID-19 cases should be dialysed by dedicated HD HCW and they should not manage other patients in the same shift.
d. If feasible, HD HCW should not cross shifts and in larger units, work within the same specific areas of the dialysis unit. Each patient must identify their respective dialysis chair so that they sit in the same place while receiving hemodialysis treatment to minimize infection and also facilitate contact tracing.
e. HD HCW roster at the centre may need to be adjusted to ensure adequate HCW during peak periods
f. Procedure for exposed HCW (refer to Flow Chart Workflow for Healthcare Workers Exposed to COVID-19)

    i. Assessment of risk exposure should be made by the person-in-charge or affiliated nephrologist (refer to Annex 21a)

    ii. HCW who is classified as low risk exposure category and asymptomatic does not require quarantine. However, they should be tested prior to returning to work because they are highly specialised staff and caring for immunocompromised patients. Testing at Day 3 and D5 post-exposure is recommended .

    iii. Dialysis staff categorised low risk exposure with symptoms can also continue working if immediate testing is negative. Testing is required at Day 3 and Day 5 post exposure.

    iv. The HCW in high risk exposure category should get tested immediately. If asymptomatic and RTK-Ag test is negative, they can return to work. If symptomatic but the RTK-Ag test on Day 3 is negative & symptoms substantially resolved, they can return to work. However those in the high risk exposure category require daily RTK-Ag testing when they return to work until day 5 for fully vaccinated staff (refer to Annex 21a)

        - Staff who return to work should adhere to **Return to Work Practices and Work Restrictions Recommendations (refer Annex 21a)**. They should adhere to hand hygiene, respiratory hygiene, and cough etiquette
        - They need to self-monitor their temperature and respiratory symptoms daily
        - If they develop new onset of symptoms (even mild) or worsening of symptoms and consistent with COVID-19, they must immediately stop patient care activities and notify their supervisor prior to leaving work

7. INFECTION CONTROL POLICY & TRAINING

a. Universal precautions should be practised

b. All HD centres should have an isolation policy for patients with suspected, probable or confirmed COVID-19 infection and close contacts

c. HD HCW should wear appropriate PPE in the HD centre as routine practice to minimize infection:

- KN94/N94 or KN95/N95 is preferred but if not possible, double-masking or minimum of well-fitted 3 ply surgical mask
- Eye protection i.e. face shield / goggles
- Gloves
- Apron

d. Haemodialysis patients should wear face mask during haemodialysis treatment

e. If feasible, HD HCW should not cross shifts and in larger units, work within the same specific areas of the dialysis unit. Each patient must identify their respective dialysis chair so that they sit in the same place while receiving hemodialysis treatment to minimize infection and also facilitate contact tracing.

f. In caring for patients with suspected, probable or confirmed COVID-19 infection and close contacts, HD HCW should wear appropriate PPE as per recommendations (Refer Annex 8 Infection Prevention Control Measures):

- Isolation Gown (fluid-repellent long-sleeved gown)
- gloves
- N95/KN95 face mask (for confirmed, probable and suspected cases and close contacts)
- face shield covering the front and sides of the face

g. If performing Aerosol Generating Procedures (AGP) e.g. cardiopulmonary resuscitation for patients with confirmed, probable or suspected COVID-19 infection and close contacts, HD staff should don appropriate PPE as per recommendation (Refer Annex 8 Infection Prevention Control Measures):

- N95 mask
- Isolation Gown (fluid-repellent long-sleeved gown) with plastic apron
- Gloves
- face shield covering the front and sides of the face

h. Dedicated blood pressure cuffs and equipment should be used. If the equipment needs to be shared, it must be cleaned and disinfected thoroughly before use on other patients with recommended disinfectant.

i. Disinfection should be done between each shift of patients including medical and non-medical equipment and surfaces with recommended disinfectant. Terminal cleaning should be done at the end of a shift providing care to a positive COVID-19 case before treating a negative patient.

j. The policy should be reviewed from time to time.

k. Training should be given regularly and whenever there is update in the policy.

8. PREPAREDNESS AND COORDINATION WITH LOCAL HEALTH AUTHORITIES

a. Each hospital and HD centre should ensure there is adequate supply of PPE, hand sanitisers and disinfectants:

b. Hospitals should prepare their facilities to treat patients with suspected cases, probable or confirmed COVID-19 infection and close contacts:

i. Establish and/or increase the availability of isolation rooms

ii. Equip isolation rooms with haemodialysis capabilities e.g. piping, modification of tap heads, dedicated haemodialysis machine, portable RO or RO systems for ICUs or high dependency areas (HDA), CRRT machines, dedicated automated vital signs and cardiac monitors and blood pressure cuffs etc

iii. Identify areas of isolation for dialysis of suspected cases, probable or confirmed COVID-19 infection and close contacts.

c. All HD centres should prepare their facility to treat persons who are close contacts/confirmed/probable/suspected cases:

   i. isolation rooms

   ii. separate area at least 1 metre away from the nearest patient stations in all directions. The area should be located at the end of the unit away from the flow of traffic.

   iii. separate entrance pathway should be identified (if this is feasible)

   iv. ventilation and air quality in the dialysis unit should be reviewed and remedial measure implemented if feasible (refer Annexe 52)

d. HD centres should work with the local health authorities (State Health Department (JKN), District Health Office (PKD), CPRC, infectious disease specialists etc) to identify, screen and isolate confirmed cases, probable cases, suspected cases and close contacts of patients with COVID-19. HD centres must ensure that all confirmed cases have been reported to the health authorities.

f. HD centres should plan and coordinate with local health authorities and state nephrologists on how to provide HD treatment to these patients.

9. POST DISCHARGE PLAN FOR DIALYSIS PATIENTS WHO ARE CONFIRMED COVID-19

a. Refer Annex 2 - Management ff Suspected, Probable And Confirmed COVID-19 Case (Criteria For Ending Isolation Precautions)

b. Once dialysis patients who are confirmed COVID-19 are discharged home, they should resume dialysis at their usual dialysis centres.

c. The treating team should inform the usual dialysis team when the patient can be released from isolation.

CHECK LIST FOR PREPARATION OF HAEMODIALYSIS CENTRES FOR COVID-19 INFECTION

PREPAREDNESS	
☐	1. Adequate supply of hand sanitiser
☐	2. Adequate supply of PPE
☐	(a) Isolation Gown (fluid-repellent long-sleeved gown) & Plastic Apron
☐	(b) Gloves
☐	(c) 3-ply surgical face masks and N95 masks
☐	(d) Face shields covering front and sides of the face
☐	(e) Medical scrubs
☐	3. Dedicated haemodialysis machine
☐	4. Dedicated vital sign monitors
☐	5. Dedicated blood pressure cuffs
☐	6. Prepare separate waiting area for confirmed cases, probable cases, suspected cases and close contacts
☐	7. Identify isolation rooms or isolation area at least 1 metre away from other patients
☐	8. Identify separate entrance pathway (if possible)
☐	9. Identify HCW to dialyse COVID-19 patients
☐	10. Train HCW on donning and doffing of PPE
☐	11. Train HCW on infectious control measures
☐	12. Educate patients and their carers
SCREENING AND TRIAGING OF PATIENTS & VISITORS	
☐	1. Signages
☐	2. Screening counter at entrance
☐	3. Thermal scanner
☐	4. Discourage visitors

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