

## Appendix B. Scenarios of the COVID-19 Simulation Training in Queen Elizabeth Hospital

### Infectious Disease Practice Drill and Refresher Training (Novel Coronavirus) 2020

Queen Elizabeth Hospital, Hospital Authority, HKSAR

<b>COVID-19 Simulation Training Program Development Committee</b>	<ul style="list-style-type: none"> <li>● Accident and Emergency Department (A&amp;E), Queen Elizabeth Hospital</li> <li>● Central Nursing Division (CND), Queen Elizabeth Hospital</li> <li>● Infection Control Team (ICT), Queen Elizabeth Hospital</li> <li>● Intensive Care Unit (ICU), Queen Elizabeth Hospital</li> <li>● Isolation Ward, Queen Elizabeth Hospital</li> <li>● Kwong Wah Hospital Multi-disciplinary Simulation Training Centre</li> <li>● Multi-disciplinary Skills Simulation Centre (MDSSC), Queen Elizabeth Hospital</li> <li>● Quality and Safety (Q&amp;S) Department, Queen Elizabeth Hospital</li> </ul>			
<b>Learning Objectives</b>	<ol style="list-style-type: none"> <li>1. To increase awareness in using appropriate Personal Protective Equipment in performing Aerosol Generated Procedure</li> <li>2. To recognize basic hazards in Aerosol Generated Procedure</li> <li>3. To describe the appropriate Personal Protective Equipment required in Aerosol Generated Procedure</li> <li>4. To demonstrate doffing of Personal Protective Equipment (PPE) properly</li> <li>5. To communicate with relevant people and units for transfer of suspected Novel Coronavirus Infectious case</li> <li>6. To provide relevant information to the receiving unit</li> <li>7. To identify lapse in infection control – buddy system</li> <li>8. To recognize clean and dirty zone concept</li> </ol>			
<b>Contents</b>	Pre-requisite/ Pre-reading:	Before the training, all participants should: <ul style="list-style-type: none"> <li>✓ complete basic infection control training within 24 months</li> <li>✓ complete the Proficiency Test on Personal Protective Equipment within 24 months</li> <li>✓ watch education video on “Transportation of Critically Ill Patient using Portable Ventilator”</li> <li>✓ read hospital guideline and workflow on inter-hospital transportation of confirmed case and intra-hospital transfer suspected case</li> </ul>		
	<ul style="list-style-type: none"> <li>● Scenario-based simulation training to increase staff awareness on the importance to use appropriate Personal Protective Equipment in Aerosol Generated Procedure (AGP) and perform doffing of PPE appropriately</li> <li>● Briefing of scenario, post-training de-briefing and discussion</li> <li>● Sharing common pitfall in caring of patient during aerosol generated procedure</li> </ul>			
<b>Assessment</b>	Direct observation by instructors ± observers			
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>● Evaluation forms (by Multi-disciplinary Simulation and Skills Centre)</li> <li>● Personal Feedback</li> <li>● Instructor’s Feedback</li> </ul>			
<b>Certificate of Achievement</b>	Electronic Certificate of Attendance would be awarded to participants after completion of the training class			
<b>Format of Training</b>	<b>In-situ:</b> A&E, ICU <b>Simulation lab based:</b> Isolation Ward, General Ward			
<b>Participants (HOT Seats)</b>	<b>A&amp;E</b>	<b>ICU</b>	<b>Isolation Ward</b>	<b>General Ward</b>
	<ul style="list-style-type: none"> <li>● A&amp;E Doctor</li> <li>● A&amp;E Nurse in-charge</li> <li>● A&amp;E Nurse x 2</li> <li>● Supporting Staff</li> </ul>	<ul style="list-style-type: none"> <li>● Nurse in-charge</li> <li>● Case Nurse</li> <li>● Ward Nurse x2</li> <li>● Parent Team Doctor</li> </ul>	<ul style="list-style-type: none"> <li>● Nurse in-charge</li> <li>● Case Nurse</li> <li>● +/- Ward Nurse</li> <li>● Parent Team Doctor</li> <li>● Anaesthetist &amp; OT assistant</li> </ul>	<ul style="list-style-type: none"> <li>● Case Nurse</li> <li>● Ward Nurse</li> <li>● Parent Team Doctor</li> <li>● Anaesthetist and OTA</li> </ul>
	No confederate	+ Patient Care Assistant (as confederate)	+ Patient Care Assistant (as confederate)	+ Parent Team Doctor (as confederate)
	+ 2 Observers	+ 6 Observers	+ 12 Observers	+ 6 Observers
<b>Instructor</b>	<ol style="list-style-type: none"> <li>1. Certified simulation instructors (completed Train-the-trainer program from Monash University)</li> <li>2. Skills instructors (Infection Control Link Nurse specialized in Infection Control)</li> </ol>			

Duration	Duration	Content
	10 mins	Briefing/ Familiarization
	25 + 15 mins	Scenario + Skills Practice on Doffing and Return Demo
	40 + 20 mins	Debriefing, discussion and sharing of common pitfalls in caring of patient during AGPs
	10 min	Evaluation & Questionnaire
Scenarios (Respective Training Groups)	<b>Background for A&amp;E</b>	
	<ol style="list-style-type: none"> <li>1. A 72-year-old man with history of Diabetes Mellitus on regular Diamicon and Metformin</li> <li>2. Triage               <ol style="list-style-type: none"> <li>2.1. TOCC history was negative</li> <li>2.2. Vital signs BP 128/70, P 110/min, Temp 37.9°C, SpO2 94% in room air, RR 24/min</li> <li>2.3. Verbalized cough for 2 days without sputum. He had mild shortness of breath since the morning</li> </ol> </li> <li>3. Scenario               <ol style="list-style-type: none"> <li>3.1. Waiting for doctor assessment in cubicle</li> <li>3.2. Patient told the staff that he had travel history to China                   <ol style="list-style-type: none"> <li>3.2.1. sought medical advice and diagnosed as chest infection</li> <li>3.2.2. refuse admission and return to HK</li> </ol> </li> <li>3.3. Increasing shortness of breath, desaturation</li> <li>3.4. Elective intubation</li> <li>3.5. Contact relevant staff and unit for arrangement patient transfer</li> <li>3.6. Perform doffing</li> </ol> </li> </ol>	
	<b>Background for ICU</b>	
	<ol style="list-style-type: none"> <li>1. A 72-year-old man with history of Diabetes Mellitus on regular Diamicon and Metformin</li> <li>2. On admission               <ol style="list-style-type: none"> <li>2.1. TOCC history was negative</li> <li>2.2. Vital signs BP 128/70, P 110/min, Temp 37.9°C, SpO2 94% in room air, RR 24/min</li> <li>2.3. Verbalized cough for 2 days without sputum. He had mild shortness of breath since the morning</li> <li>2.4. Histix HHH, urine ketone +++, ABG 7.02/4.5/10/24/-10 on 2L/min</li> <li>2.5. RFT 130/4.5/3.4/78</li> </ol> </li> <li>3. Inserted two large bores IV for insulin 2 units/hr infusion and 100ml/hr plasmalyte</li> <li>4. He told the staff that he had increasing SOB and some sweating</li> <li>5. Patient in Air-borne Infection Isolation Room and on 2L/min Oxygen via nasal cannula</li> </ol>	
<b>Background for Isolation Ward (Air-borne Infection Isolation Room)</b>		
<ol style="list-style-type: none"> <li>1. A 72-year-old man with history of Diabetes Mellitus on regular Diamicon and Metformin</li> <li>2. On admission               <ol style="list-style-type: none"> <li>2.1. TOCC (Travel Occupation Contact Clustering) history was positive, visited relatives in Wuhan, China one week ago</li> <li>2.2. Vital signs BP128/70, P 110/min, Temp 37.9°C, SpO2 94% in room air, RR 24/min</li> <li>2.3. Cough for 2 days without sputum and mild shortness of breath since morning</li> <li>2.4. Awaiting Nasopharyngeal aspirates result.</li> </ol> </li> <li>3. Patient in Air-borne Infection Isolation Room and on 2L/min Oxygen via nasal cannula</li> </ol>		
<b>Background for General Ward</b>		
<ol style="list-style-type: none"> <li>1. A 72-year-old man with history of Diabetes Mellitus on regular Diamicon and Metformin</li> <li>2. On triage / admission / transfer-in               <ol style="list-style-type: none"> <li>2.1. TOCC history was negative</li> <li>2.2. Vital signs BP 128/70, P 110/min, Temp 37.9°C, SpO2 94% in room air, RR 24/min</li> <li>2.3. Verbalized cough for 2 days without sputum. He had mild shortness of breath since the morning</li> <li>2.4. ** Surgical Stream General Ward: Abdominal Pain; Back Pain; Head injury</li> </ol> </li> <li>3. Pre-Scenario               <ol style="list-style-type: none"> <li>3.1. Patient in a 4-bed cubicle, bed 7, IV access available at right upper limb</li> <li>3.2. Conscious and alert GCS 15, On 4L/min oxygen therapy via nasal cannula, tiredness</li> <li>3.3. Case Nurse go to bedside to take Blood Pressure</li> <li>3.4. Patient verbalize shortness of breath, SpO2 88% (no sputum, dry cough), RR 24/min</li> <li>3.5. Case Nurse Informed Medical Officer for desaturation</li> <li>3.6. Phone order prepare for elective intubation</li> </ol> </li> <li>4. Scenario               <ol style="list-style-type: none"> <li>4.1. Case Nurse activate resuscitation</li> <li>4.2. Nurse B transferred patient to designated single room then prepare equipment</li> </ol> </li> </ol>		

## Checklist of Simulation Training

Items of the Checklist		Compliance ✓/✗	Remarks
Personal Protective Equipment	Put on appropriate PPE for Suspected/ Confirmed Case	- Hand Hygiene - N95	/
		- Face Shield - Level III Gown	/
		- Cap (Optional) - Latex Gloves	/
	Doffing of PPE	- Hand Hygiene - Remove gloves - Hand Hygiene	/
		- Remove Face Shield - Remove Cap - Hand Hygiene	/
		- Remove Gown - Hand Hygiene - Remove N95 - Hand Hygiene	For A&E, remove N95 outside Resuscitation Room
	Bathing after Aerosol Generated Procedure		
Buddy System			/
Resuscitation – Airway	High Flow Oxygen therapy	- Connect all parts including bacterial filter - Full PPE before high flow oxygen - Monitor for any leakage - Surgical Mask for patient over the nasal cannula or oxygen mask	For General ward, avoid high flow oxygen therapy
		Intubation	N/A for General ward
Communication and Information	Communication	- Alert others for suspected case identified - Alert others to put on Full PPE	For A&E, activate engagement light outside Resuscitation Room
		- Closed loop communication - SBAR: <u>S</u> ituation, <u>B</u> ackground, <u>A</u> ssessment, <u>R</u> ecommendation	/
		- inform relevant parties for patient transportation	/
	Information	- Patient condition - Suspected or confirmed case	/
		- Precaution - Designated passage away from overcrowded area	/
		- Required equipment - Environmental decontamination after transportation	/
Other Infection Control	Concept of Clean and Dirty Zone	- Proper documentation - Resuscitation trolley and equipment pool outside All Room	- For ICU and Isolation ward, document outside All Room - For A&E and General ward, document by “clean” nurse
		- Dirty Zone provide care - Clean Zone for record and external communication	/