

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

COVID-19 Simulation Training Program Development Committee	<ul style="list-style-type: none"> ● Accident and Emergency Department (A&E), Queen Elizabeth Hospital ● Central Nursing Division (CND), Queen Elizabeth Hospital ● Infection Control Team (ICT), Queen Elizabeth Hospital ● Intensive Care Unit (ICU), Queen Elizabeth Hospital ● Isolation Ward, Queen Elizabeth Hospital ● Kwong Wah Hospital Multi-disciplinary Simulation Training Centre ● Multi-disciplinary Skills Simulation Centre (MDSSC), Queen Elizabeth Hospital ● Quality and Safety (Q&S) Department, Queen Elizabeth Hospital 			
Learning Objectives	<ol style="list-style-type: none"> 1. To increase awareness in using appropriate Personal Protective Equipment in performing Aerosol Generated Procedure 2. To recognize basic hazards in Aerosol Generated Procedure 3. To describe the appropriate Personal Protective Equipment required in Aerosol Generated Procedure 4. To demonstrate doffing of Personal Protective Equipment (PPE) properly 5. To communicate with relevant people and units for transfer of suspected Novel Coronavirus Infectious case 6. To provide relevant information to the receiving unit 7. To identify lapse in infection control – buddy system 8. To recognize clean and dirty zone concept 			
Contents	Pre-requisite/ Pre-reading:	Before the training, all participants should: <ul style="list-style-type: none"> ✓ complete basic infection control training within 24 months ✓ complete the Proficiency Test on Personal Protective Equipment within 24 months ✓ watch education video on “Transportation of Critically Ill Patient using Portable Ventilator” ✓ read hospital guideline and workflow on inter-hospital transportation of confirmed case and intra-hospital transfer suspected case 		
	<ul style="list-style-type: none"> ● 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 ● Briefing of scenario, post-training de-briefing and discussion ● Sharing common pitfall in caring of patient during aerosol generated procedure 			
Assessment	Direct observation by instructors ± observers			
Evaluation	<ul style="list-style-type: none"> ● Evaluation forms (by Multi-disciplinary Simulation and Skills Centre) ● Personal Feedback ● Instructor’s Feedback 			
Certificate of Achievement	Electronic Certificate of Attendance would be awarded to participants after completion of the training class			
Format of Training	In-situ: A&E, ICU Simulation lab based: Isolation Ward, General Ward			
Participants (HOT Seats)	A&E	ICU	Isolation Ward	General Ward
	<ul style="list-style-type: none"> ● A&E Doctor ● A&E Nurse in-charge ● A&E Nurse x 2 ● Supporting Staff 	<ul style="list-style-type: none"> ● Nurse in-charge ● Case Nurse ● Ward Nurse x2 ● Parent Team Doctor 	<ul style="list-style-type: none"> ● Nurse in-charge ● Case Nurse ● +/- Ward Nurse ● Parent Team Doctor ● Anaesthetist & OT assistant 	<ul style="list-style-type: none"> ● Case Nurse ● Ward Nurse ● Parent Team Doctor ● Anaesthetist and OTA
	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
Instructor	<ol style="list-style-type: none"> 1. Certified simulation instructors (completed Train-the-trainer program from Monash University) 2. Skills instructors (Infection Control Link Nurse specialized in Infection Control) 			

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

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	- Video-assisted laryngoscope - Disposable blade - Sedation and muscle relaxant - Inflate the cuff of ET tube before connecting to ventilator
Communication and Information	Communication		- Alert others for suspected case identified - Alert others to put on Full PPE
		- 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	/