

(The survey instrument was translated to Chinese prior to distribution)

## Round 2: Survey for nurses

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THANK YOU for helping us identify essential knowledge and skills to fight the COVID-19 pandemic. Your input will be extremely valuable to all doctors, nurses and other healthcare professionals around the world.

We need your help one last time. Please help us to decide:

- **How important is it to include each item in a COVID-19 course for nurses pertaining to treatment of patients, prevention of spread and protection of the staff?**

You are the expert in this field. What knowledge and skills would you have liked to be taught before you started working with COVID-19 patients?

This questionnaire should not take more than 10-15 minutes.

**QUESTION 1**

The items below are your answers regarding *treatment of patients with COVID-19*.

Please rate each item from 1- 4 according to how important it is to include the item in a COVID-19 course to teach nurses how to care for patients with COVID-19.

Remember: Please rate the importance of including them in a course, rather than the importance of knowing or doing it (example: if all nurses already know how to do it, then it is not as important to include it in a course).

Not at all important       Less important       Important       Extremely important

**Airway**

1. Assisting during tracheal intubation
2. Performing airway suction
3. Nursing care of the tracheostomy, including changing of tube

**Breathing**

4. Understanding the basic knowledge of mechanical ventilation, and assisting in mechanical ventilation
5. Understanding the basic knowledge of non-invasive ventilation, and assisting in non-invasive ventilation
6. Performing oxygen therapy (e.g. use of nasal cannula or mask, high flow oxygen therapy)
7. Knowing methods to improve ventilation (e.g. prone position ventilation, mobilization, pulmonary function exercises etc.)

**Circulation**

8. Performing Cardiac Pulmonary Resuscitation (CPR)
9. Nursing care of central venous access
10. Assisting in Extracorporeal Membrane Oxygenation (ECMO)
11. Performing arterial puncture and assisting in arterial cannulation
12. Inserting indwelling needles and peripheral inserted central catheter (PICC) including use of infusion pump
13. Collecting blood samples
14. Treating shock including fluid resuscitation and vasoactive drugs according to doctor's prescription
15. Monitoring of hemodynamics including performing Pulse Index Continuous Cardiac Output (PICCO) thermodilution
16. Assisting in Electrocardiography (ECG) procedure

**Renal, electrolytes, glucose**

17. Assisting in hemopurification therapy
18. Managing fluid balance and electrolytes
19. Inserting a urinary catheter

**Blood samples**

20. Arterial blood sampling and operation of ABG testing machine

21. Interpreting blood tests including inflammatory markers
22. Performing blood glucose test including monitoring and use of insulin pen

**Gastro-intestinal**

23. Monitoring nutrition of patients
24. Inserting nasogastric tube, including nursing care in relation to the tube.

**Medication**

25. Knowing indications and contraindications of relevant medications, including administration
26. Administering antiviral drugs according to doctor's prescription
27. Administering analgesia and sedation according to doctor's prescription

**Diagnostics**

28. Interpreting chest computed tomography (CT) scan
29. Performing throat swab and nasal swab
30. Collection of airway secretion samples (e.g. sputum, nucleic acid test sample)

**Theoretical COVID-19 knowledge**

31. Knowing basic theory about COVID-19 (pathophysiology, modes of transmission, incubation period, classification, epidemiology etc.)
32. Knowing diagnostic criteria of COVID-19
33. Treating COVID-19 specific issues (e.g. coughing, shortness of breath) according to doctors prescription

**Theoretical knowledge about critically ill patients and organ support**

34. Identifying critically ill patients including multiorgan failure
35. Understanding basic knowledge of underlying diseases including diabetes, hypertension, etc.
36. Caring for the elderly and vulnerable population

**Non-technical skills**

37. Providing psychological care and support for patients
38. Communicating with patients and relatives
39. Working in teams
40. Providing hospice care

**Organizational issues**

41. Knowing local hospital departments, rules, policies, and procedures
42. Facilitating the admission and discharge of patients
43. Knowing how to use nursing records

**Other Patient care**

44. Observing patient's condition including taking of vital signs
45. Preventing patient falls
46. Maintaining patient hygiene (e.g. oral care)
47. Avoiding pressure injuries
48. Performing injections (e.g hypodermic and intramuscular injections)
49. Practicing traditional Chinese medicine

**QUESTION 2:**

The items below are your answers regarding **prevention of spread of COVID-19, and protection of staff**.

Please rate each item from 1- 4 according to how important it is to include the item in a COVID-19 course to how to prevent spread and protect themselves from COVID-19.

Remember: Please rate the importance of including them in a course, rather than the importance of knowing or doing it (example: if all nurses already know how to do it, then it is not as important to include it in a course).

Not at all important       Less important       Important       Extremely important

**Personal protection**

1. Knowing when to use gloves, masks etc. including knowledge of the different levels of necessary protection
2. Donning and doffing of personal protective equipment (PPE) including gloves
3. Performing hand hygiene
4. Putting on and taking off of facial protection (mask, goggles, respirators)
5. Putting on and taking off of shoe covers
6. Knowing how to decontaminate clothes and personal items and when to shower
7. Managing exposure (=what to do if exposed)

**Isolation**

8. Knowing how to keep COVID-19 patients isolated
9. Preventing hospital-acquired infection

**Organizational issues**

10. Knowing how to dispose of medical waste
11. Knowing how to handle deceased patients without contamination
12. Knowing the different zones (clean, semi-contaminated, contaminated)
13. Knowing when and how to report the epidemic situation

**Aseptic technique and disinfection**

14. Performing aseptic technique
15. Knowing how to disinfect items and environment

**Outside hospital measures to stay safe**

16. Avoiding close contact (e.g. during meals, transportation etc.)
17. Securing safe personal residence including ventilation, disinfection and different zones
18. Maintaining physical wellness including proper sleep, exercise, food, boost immunity etc.
19. Maintaining psychological wellness including avoiding stress, staying positive and motivated
20. Knowing when to seek hospital care for yourself

**Others**

21. Providing health education for patients

Other comments and suggestions: