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Will the status of infection prevention and control (IPC) professionals be improved in the context of COVID-19?



To the Editor,

As of 11th March 2020, globally, the outbreak of novel coronavirus disease 2019 (COVID-19) has been declared as a pandemic by World Health Organization.¹ In the past few months, we observed how Mainland China succeeded to flatten the new confirmed cases and decreased the epidemiological curve with the aggressive and bold infection prevention and control (IPC) and nonpharmaceutical measures.^{2,3} Besides the frontline healthcare workers, IPC professionals also played a significant role in emergency preparedness and responses (ie, fever-triage strategies, screening measures, and quarantine practices for infected or suspected patients) to contain the spreading of the virus, especially transmission of infection from patients to healthcare workers. Compared with the fact that 21% of healthcare workers were infected during SARS outbreak in 2003, there was a significant decrease of healthcare workers becoming infected during outbreak of COVID-19.⁴ Even though we have recognized the importance of multimodal IPC strategies against COVID-19; compared with the efforts providing cares and services by the front-line healthcare workers, the contributions of IPC professionals have not yet been praised and identified.

The problems that IPC professionals are facing with have deep causes to be addressed, which are lasting for a long time. Before the emergency outbreak of COVID-19, most IPC professionals faced structural/hierarchical challenges, including but not limited to power struggles in influencing the IPC practices in the clinical departments.⁵ Also, in the hospital management level, IPC services (ie, routine IPC measures, emergency preparedness, and responses) have not been considered as important as clinical and nursing services. Therefore, IPC professionals had to undertake greater accountability of risks and pressures for implementing IPC outbreak management strategies. Second, at the beginning of outbreak of COVID-19, the insufficiency of IPC professionals is obviously becoming more significant, especially for hospitals not dedicated for COVID-19 patients. IPC professionals not only had to conduct their routine IPC surveillance activities, but also had to take charge in formulating new in-house COVID-19 IPC guidelines, triage strategies, hospital-wide training, outbreak drills, and so forth. In terms of financial support, IPC services were not subsidized nor given any form of reimbursements or

remuneration for fighting against COVID-19⁶ as IPC professionals were measured as not providing direct care and services to confirmed or suspected COVID-19 patients. Third, whether before or after the outbreak of epidemic, the composition of IPC professional team should consist of an interdisciplinary team/speciality (ie, infectious diseases/infection control physicians, IPC nurses, clinical microbiologist, pharmacist, and other technicians). In fact, IPC nurses are traditionally still the key players, and this makes other professionals reluctant to be assigned to an IPC position by hospital management.⁵ Also, in the national level, few medical sources were invested for cultivating interdisciplinary talents in the field of IPC. Therefore, expert panel of Steering Committee for fighting against COVID-19 in Mainland China highly recommended that IPC education and training (especially emergency preparedness and responses) should be initiated and made compulsory in all medical undergraduate courses.⁷ This approach would not only cultivate qualified IPC professionals, but also orchestrate a paradigm shift where peers would respect and recognize the importance of IPC services in the hospitals.

During the outbreak of COVID-19 in Mainland China, we have witnessed that IPC professionals have done numerous and significant efforts to contain the transmission of infections between patient-to-patient and patient-to-healthcare workers. However, for an improved and sustainable IPC measures in the hospital levels, we recommend that a qualitative research should be conducted in order to explore/identify: (1) what are the facilitators and challenges of IPC implementation strategies during the outbreak, and what should be improved; (2) perceived effectiveness for successful containments of the spreading of the virus; (3) influence of organizational culture in outbreak management. This approach will convince the hospital management levels to not only improve the position/status of IPC professionals but also achieve the scientific recognitions by the peers in the hospital level.

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Several potential risks of novel coronavirus (COVID-19) pneumonia outbreaks in hospitals



Since the first case of the novel coronavirus disease 2019 (COVID-19) was reported from Wuhan, China, in December 2019, more cases have been reported nationwide and even around the whole world.¹ The good news is that the Chinese government now has the pandemic under control with a significant reduction in new cases and deaths through powerful and effective prevention and control measures. The prevention and control measures in hospitals are first line of defense and hence crucial for preventing the spread of COVID-19.² There have been several reported cases of mass isolation of the medical staff after they were in close contact with patients who were misdiagnosed of COVID-19.

MULTIPLE POTENTIAL RISKS OF COVID-19 OUTBREAKS IN HOSPITAL

According to the sixth edition of the National Health Commission of the People's Republic of China clinical guidelines for the diagnosis and treatment of COVID-19, some patients are asymptomatic. Due to the absence of clinical symptoms such as fever and cough, infected patients who were in the incubation period of the disease or the asymptomatic patients were treated as ordinary patients without preventive isolation and protection measures. In addition, some patients do not report any recent travel history to the pandemic regions or history of close contact with patients with COVID-19. These patients will also become a source of infection in hospitals if they were treated as ordinary patients without preventive isolation.³

COVID-19 can be diagnosed only by a positive nucleic acid detection of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) following the relevant diagnostic criteria. Some patients are treated as ordinary patients if the SARS-CoV-2 nucleic acid of their throat swab is negative. However, the positive rate of throat swab nucleic acid test is low. Some patients need to be tested repeatedly to confirm the diagnosis. It should be noted that the positive rate of sputum and alveolar lavage fluid nucleic acid test is more sensitive than the throat swab. In addition, it is worth noting that some patients who recovered from COVID-19 still showed a positive nucleic acid test even after hospitalization. These patients would be a source of infection in hospitals if there were no effective isolation measures in place.

Some critically ill patients may require emergency surgery, and the medical staff may not have followed the standard protective

measures during and after surgery. Patients who are unable to conduct an epidemiological investigation may not have been adequately isolated. These patients and the medical staff in close contact with them would be the source of SARS-CoV-2 infection in the hospital.

In addition, logistics cleaning staff, patient escorts, and health professionals under training working in teaching hospitals are groups easily overlooked in the prevention and control of a hospital pandemic. There may be inadequate monitoring measures for their training, physical conditions, and personnel movements. Personnel may also be a source of SARS-CoV-2 infection in hospitals.

HOW TO DEAL WITH THESE RISKS?

Keeping the entrance of the hospital well by strict pre-examination, and actively promoting the cooperation of relevant personnel, strict epidemiological history investigation, and constant reassessment of measures are effective steps to reduce the missed diagnosis of patients with asymptomatic latency. Patients who have not been ruled out of COVID-19 for emergency surgery are treated as suspected cases. Similarly, patients with related clinical symptoms (fever, cough, history of travel to infected regions, close contact with COVID-19 pneumonia, and patients with positive chest radiologic imaging), even if their nucleic acid testing is negative, should be treated as the suspected cases. The nucleic acid testing must be repeated to prevent the missed diagnosis of COVID-19 in these patients.

Strengthening the management, supervision, and training of key groups, such as the logistics cleaning staff, patient escorts, and health professionals under training in teaching hospitals are essential in closing the gap for these potential infection points. In addition, grasping the health status, life, and work trajectories of related personnel is crucial. It is worth noting that a rehabilitation station should be established for discharged patients who meet the discharge standards but continue to be isolated for 14 days to prevent them from becoming a source of infection again.

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