

Challenges and Measures in Prevention of Nosocomial Infection of COVID-19 During Resumption of Work: Experience from a Pancreatic Surgery Department, Wuhan, China

Editor

The World Health Organization (WHO) declared a pandemic of coronavirus disease (COVID-19) (SARS-CoV-2) on March 2020¹. The rapid spread of COVID-19 heavily increases health care systems burden worldwide and led to a postponement of nearly all elective procedures²⁻⁵. At present the epidemic situation of COVID-19 is relieving and under gradual resumption of work, we aim to share our experiences in this unique position and hope to help pancreatic

surgery department as well as the health agencies.

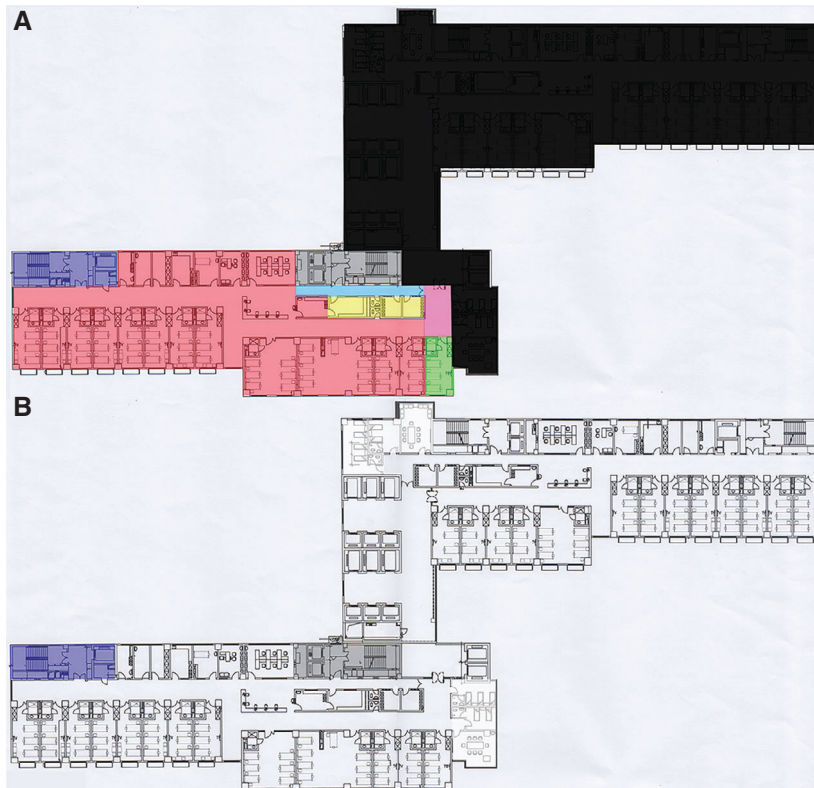
First, we carried out an architecture reconstruction to the ward. The department was divided into clean, potential contaminated, contaminated and buffer zones (Fig. 1). Patients and hospital staff were using separate passageways. When admitting new patients, they will first enter the contaminated zone in 15th floor and underwent an observation interval for three days. Then a SARS-CoV-2 nucleic acid test and antibody test were arranged for doublecheck. After the confirmation of the results, patients were then transferred to the clean wards in 14th floor. This functional and geographic division of the

department was designed to minimize the risk of nosocomial transmission.

Second, all staff were required to pass an online written examination before resumption (Supplemental material 1). Doctors and nurses have a higher correction rate compared with other staff (Supplemental fig. 1A, supplemental table 1). Also, the performance of those who have participated in the first-line fighting against the COVID-19 is better than those who haven't. (91.79% vs. 86.78%, $P = 0.003$) (Supplemental fig. 1B, supplemental table 2).

Third, experts were assembled to establish a COVID-19 corresponding team. This team took responsibility in consultation, referral and handling all suspicious patients. Every staff could

Fig 1 (A) Configuration of the 15th Floor of the department. (B) Configuration of the 14th Floor of the department. (Different colour represented different function, ■ Closed zone; ■ Patients passage; ■ Contaminated zone; ■ Medical staff passage; ■ Clean zone; ■ Buffer zone 1; ■ Potential contaminated zone; ■ Buffer zone 2; ■ Staff rest zone)



submit patient consultation through an internal network system to the expert team, and feedback will return within 12 hours.

Fourth, both the department and hospital provide various forms of psychological counselling since job burnout, mild anxiety and depression are commonly seen in those who have participated in the first-line against COVID-19 as well as the medical staff who have just returned to work. Proper psychological counselling can greatly improve these negative emotions.

From the resumption of work (6th April) to the manuscript drafting (29th May) the department had finished 107 surgeries. Comparing with the numbers of previous years, a sharp decrease was noticed (*Supplementary fig. 2*). However, the number is gradually recovering.

In the fight against potential COVID-19 future outbreaks, infection-prevention strategies should be highly valued. Surgeons should get prepared and well trained to minimize the risk of nosocomial transmission.

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Declaration of interests


All author disclosed no conflict of interests.

Authors contributions

RYQ, HZ conceive the study. TYY collect and analyses the data. All authors draft the manuscript. All authors approve the final version of the manuscript.

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Supporting information

Additional supporting information can be found online in the Supporting Information section at the end of the article.