

This is an Accepted Manuscript for *Infection Control & Hospital Epidemiology* as part of the Cambridge Coronavirus Collection

DOI: 10.1017/ice.2020.60

Prepared for *Infection Control and Hospital Epidemiology*

Protecting Chinese Healthcare Workers While Combating the 2019 Novel Coronavirus

Pengcheng Zhou¹, Zebing Huang², Yinzong Xiao^{2,3}, Xun Huang^{1,*}, Xue-Gong Fan^{2,*}

1. Infection Control Centre, Xiangya Hospital, Central South University, Changsha, 410008, China

2. Hunan Key Laboratory of Viral Hepatitis & Department of Infectious Diseases Xiangya Hospital, Central South University, Changsha, 410008, China

3. Burnet Institute, St Vincent's Hospital Melbourne, and University of Melbourne, Melbourne, 3065, Australia

* Address correspondence to Xue-Gong Fan MD or Xun Huang MD, Xiangya Hospital, Central South University, Changsha 410008, China. E-mail address: xgfan@hotmail.com or huangxun224@126.com. Tel: +86-731-84327392.

WORD COUNT: 409

To the Editor—Hospital-associated transmission is an important route of spreading the 2019 novel coronavirus (2019-nCoV) infection and pneumonia (Corona Virus Disease 2019, COVID-19) ^[1]. Healthcare workers (HCWs) are at high risk while combating COVID-19 at the very frontline, and nosocomial outbreaks among HCWs are not unusual in similar settings; the 2003 severe acute respiratory syndrome (SARS) outbreak led to over 966 HCW infections with 1.4% deaths in mainland China ^[2]. As of 11 February 2020, 3019 HCWs might have been infected with 2019-nCoV in China, 1716 HCW cases were confirmed by nucleic acid testing^[3], and at least 6 HCWs died, including the famous whistleblower Dr Li Wenliang. In view of this severe situation, we are recommending urgent interventions to help to protect HCWs.

A few reasons led to a more severe situation than expected among HCWs. Firstly, many infected individuals presented with atypical symptoms, such as gastrointestinal symptoms and fatigue, or were asymptomatic ^[4]. This situation may have led to lack of recognition of the infection while patients were highly contagious. Furthermore, HCWs were not well-prepared for this sudden coronavirus outbreak, especially in departments other than infectious diseases. There was a general lack of awareness among HCWs to take precautions and inadequate training among HCWs was noticed with staff incorrectly wearing personal protective equipment (PPE). In fact, approximately 30 HCWs in the Wuhan Mental Health Hospital were reported to be infected ^[5]. Thirdly, no point-of-care diagnostic assay was available in hospitals before late January 2020. Besides, the positive rate of the 2019-nCoV nucleic acid test kit remains relatively low even at present, and many patients were

diagnosed after more than four tests. These factors led to a diagnostic delay and opportunities for exposure among HCWs. Fourthly, almost all tertiary and secondary hospitals are experiencing short of PPE and calling for donations. HCWs have to use daily plastic products (photographic film, plastic wrap, file bag, and so forth) to make simple PPE. Lastly, some COVID-19 patients were admitted to the other departments by concealing their epidemiological history, which led to unnecessary exposure of HCWs.

Much can be done! We hope all countries and all people in the world can support the brave men and women on the front line of combating 2019-nCoV. More PPE should be produced or imported, and delivered to hospitals quickly. Training of HCWs to identify suspicious cases and use PPE properly is in urgent need, especially for HCWs in departments other than infectious diseases. Concealing medical history should have legal consequences.

Acknowledgments.

Conflicts of interest.

All authors report no conflicts of interest related to this work.

References:

1. Chan JF, Yuan S, Kok KH, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. LANCET 2020. DOI: 10.1016/S0140-6736(20)30154-9
2. General epidemic situation of SARS in China (May 29, 2003). National Health Commission of the People's Republic of China website.
<http://www.nhc.gov.cn/wjw/zcjd/201304/2e198946322b4b9ab3972565ff3db8c6.shtml>.
Published 2003. Accessed Feb 20, 2020.
3. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team, Chinese Center for Disease Control and Prevention. The epidemiological Characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. Chin J Epidemiol 2020; 42: 145-151.
4. Diagnosis and treatment program of novel coronavirus pneumonia (The Fifth Edition). National Health Commission of the People's Republic of China website.
<http://www.nhc.gov.cn/yzygj/s7653p/202002/d4b895337e19445f8d728fcdf1e3e13a.shtml>.
Published 2020. Accessed Feb 20, 2020.
5. Nosocomial infection outbreak in Wuhan mental health center, and about 80 healthcare workers and patients were infected with novel coronavirus pneumonia. Feb 8, 2020. Peoples Daily website.
<http://society.people.com.cn/n1/2020/0209/c1008-31577664.html>.
Published 2020.
Accessed Feb 20, 2020.