

## Viewpoint

# COVID-19: what else would be helpful to know?

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The numbers keep coming. The number of infected people infected with COVID-19 world-wide today 28 Feb 2020, stands at 83, 889 with 2, 867 deaths and 36,827 recovered.<sup>1</sup> The incubation period is said to be 2-14 days with possible outliers of 0-27 days.<sup>2</sup> The death rate i.e. probability of dying if infected by virus seems to increase with age and there are indications it also follows gender lines as it is 2.8% in males and 1.7% in Females.<sup>3</sup> As with many infections, patients with comorbidities seem to be at high risk particularly those with cardiovascular conditions with a death rate of 10.5% while those with no pre-existing conditions have a death rate of 0.9%.<sup>5</sup>

Commonly reported symptoms are fever, cough and shortness of breath.<sup>4</sup> 80% of infections have been reported to be mild with flu-like symptoms and home-based care as sufficient. 13.8% of cases have been reported to be severe with patients developing pneumonia and shortness of breath. Respiratory failure, septic shock and multiple organ failure have been reported in 4.7% and the virus has been reported as fatal in 2% of cases.<sup>4</sup> All the above figures are good to know as a better understanding of the virus and the incubation period allow for introduction of more effective treatment and quarantine systems thereby hoping to curb the spread of virus.<sup>2</sup>

Particularly concerning is the figure that in China alone 3000 Chinese health care workers have contracted the virus, suggesting that 29% of infections are among medical staff.<sup>5</sup> How can more health care workers be protected as a pandemic is declared? What lessons have been learnt in China that can be transferred to other countries as the world faces this threat?

### HOW TO IMPROVE RAPID DIAGNOSIS AND EARLY DETECTION?

Early diagnosis through early testing of suspects, isolation and community-wide measures such as social distancing through avoiding others, working from home and home isolation have been employed in China.<sup>6</sup> Are these measures working? To date polymerase chain reaction (PCR) kits have been used in diagnosis and these depend on specialized equipment, highly trained technicians and centralized labs. Testing at a broader global strategy seem now inevitable and models indicate that 80% of symptomatic patients need to be tested and isolated within days of symptoms appearing if Coronavirus is to be brought under control within a year.<sup>6</sup> China and the USA have already experienced challenges with PCR kits, which are difficult to scale up or decentralize as the number of cases have exceeded laboratory testing capacity. China has resorted to CT scans as a diagnostic tool followed up by lab confirmation.<sup>6</sup> How effective is this as an alternative diagnostic tool? There are suggestions that distributing point of care diagnostic tools to low income countries could speed up early detection and diag-

nosis.<sup>6</sup> Are these kits readily available and is there any data? As the virus spreads, many countries have to be prepared to diagnose and treat patients early. Data collection and sharing lessons learned on how to diagnose coronavirus early and speedily could help other countries respond more effectively and efficiently.

### ARE CURRENT INFECTION CONTROL PRINCIPLES FALLING SHORT?

Infection control practices have been a way of dealing with communicable diseases world-wide. Protective clothing is meant to create a barrier between the virus, fungus, bacteria and the health care worker and these include, gloves, gowns, masks (surgical, respirators) and face shields.<sup>7</sup> Respirators fit tightly to create a seal around nose and mouth in order to prevent droplets from entering the body are only effective with the correct size.<sup>7</sup> With this high number of health care workers succumbing to the virus, the questions are, "How effective are the current infection control practices?" What protective clothing have the health care workers in China been using? What types of masks did these nurses and doctors wear e.g. simple disposable, surgical, N95 and are these the same masks other health care workers in other countries are using? Is there any data showing differences in mask effectiveness? What type of goggles and what type of disinfectants were used in China when health care workers got infected?

Should other countries start using different masks, goggles, disinfectants etc? Did hand hygiene, barrier nursing, quarantine and the usual infection control principles that were advocated in China fail? Either the protective clothing is not effective, is insufficient, the virus can penetrate these or the practitioners fail to adhere to principles when overworked or fatigued.<sup>8</sup> In either case, that means other countries should start doing things differently before more health care workers get infected. What lessons can be learned and what can be done differently in other countries? We also propose that with mass mask use, the use e.g. single use and the disposal of these (closed bin) be regulated.<sup>7</sup> One of our concerns is, "What happens if a damp mask is deposited in an open bin at the railway station toilet or at home at room temperature?" If the virus is on the mask, what happens in the next few hours, days or weeks? How long does it survive?<sup>9</sup> Similarly, what happens if communities use and reuse masks that were meant for single use repeatedly? Are there used mask (closed bins) disposal sites in public spaces or communities? On that note, does that mean public spaces, hospitals, clinics, public transport and surfaces ought to be disinfected regularly<sup>9</sup> as an infection control measure? Which disinfectants are effective on high-traffic surfaces, doorknobs, counters, public spaces.<sup>9</sup> Are there any standard operating procedure for disinfecting

public spaces effectively? We propose systematic reviews and building of research frameworks using identified infection control gaps, as research priorities. That could aid in understanding how more health care workers and the population in general, could be protected in future pandemics.

## CONCLUSION

Rather than doing what was proved insufficient in China in preventing the spread of infection to others as well as to health care workers, gathering and sharing additional data on speedy diagnosis, practitioner behaviour, what infection control practices including protective clothing, disinfectants etc, proved effective or not effective, could assist in protecting the masses as well as health care workers as COVID-19 continues to take lives.

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