



**GE HEALTHCARE  
SPECIAL SUPPLEMENT**

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# COVID-19: What Can Healthcare Learn?



Summary: A new decade is normally a time for optimism and fresh starts but what 2020 ushered in was a new coronavirus. Named by WHO as COVID-19, the virus causes severe acute respiratory problems. It is thought to have emerged at a live animal market in the Chinese city of Wuhan at the end of 2019 with an initial trickle of reports soon turning into a deluge as it spread across borders. At the time of going to print, more than 75,000 cases are known while in excess of 2,000 people, mostly in China, have died from contagion.

COVID-19 has put the matter of response into sharp focus and nowhere has this been more significant than in healthcare. There are as many questions as answers, but at least they're been asked. HealthManagement.org takes a look.

## Hype vs. Facts

The WHO has warned the world against 'infodemic' and urged caution when interpreting new information on cases of COVID-19 as the data currently available is insufficient for a proper understanding of how the virus works and acts in humans.

The organisation has a point. The attention COVID-19 is getting from the mass media can be explained by the novelty of the disease, but the numbers do not correlate with the hype. For instance, since the beginning of winter in the U.S. alone, the seasonal flu has taken over 10,000 lives – far more than the new virus – and the global annual toll is usually between 290,000 and 650,000 (Centers for Disease Control and Prevention 2020). During the H1N1 outbreak in 2009–2010, at least 150,000 people died in the first year,

had underlying health issues. In other words, it is not yet clear how the ultimate picture on recovery and mortality rates will look. At this point, COVID-19 seems to have more in common with the regular flu than with Ebola or MERS. "We need to be very careful with throwing around figures, speculating or scaring people," said Dr Michael Ryan, head of the WHO's Health Emergencies Programme, on Twitter ([twitter.com/GHS](https://twitter.com/GHS)).

## Healthcare Technology Coming to the Fore

If there is anything positive to come out of the emergence of COVID-19, it is how technology has played a prominent role in information, prevention and treatment.

A Toronto-based health-monitoring platform beat both the Chinese authori-

use such technology for protection of public health?

Additionally, robotics and telemedicine have shone during the virus spread as doctors in facilities around the world have resorted to using robots in isolation units for treatment of COVID-19 cases. In the U.S., at the Providence Regional Medical Centre in Washington, a robot equipped with a stethoscope, assisted doctors with vitals and communication via a screen (Staines 2020). The deployment of the robot reduced staff contact with a male patient, allowing medics to observe him as they moved the robot around the isolation area.

In Israel, the Sheba Medical Centre launched a telemedicine programme in a bid to control virus spread. As well as being able to monitor patients in isolation rooms, it can be used to observe

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with some estimates going as high as 500,000 (Dawood et al. 2012).

In relative numbers, global pandemics usually take lives of 0.01–0.02% of the infected population. For SARS this number was around 10%, for MERS and Ebola – around 40% (Fan et al. 2018). Among people with confirmed COVID-19 infections, 4.7% were classified as critical, 13.8% as severe and 80.9% as mild. The coronavirus's fatality rate is estimated to be in the range of 0.5–4%, ie similar to that of seasonal flu (Yanping 2020). The latter is rarely diagnosed in a laboratory setting, and many people with COVID-19 could have also abstained from visiting a doctor, which means that the official mortality rate might be inflated – as happened, for example, in the beginning of the H1N1 outbreak (Baumgaertner 2020).

On the other hand, only 18% of those with COVID-19 have recovered while 82% are still ill (WHO 2020). Of the 2% who died, most were elderly and already

ties and WHO to officially going public in early January on the virus when it notified its customers about the outbreak on December 31.

BlueDot uses AI-driven algorithms to predict the spread of diseases through searching news reports and airline ticketing data (Niiler 2020). Further data and information from international news reports in 65 languages, official announcements and animal and plant disease networks give clients advance notice of danger areas.

Public information was also central in a mapping project at Johns Hopkins Whiting School of Engineering. In response to the public health emergency, the faculty devised an online dashboard for tracking and visualising of daily reported cases ([systems.jhu.edu](https://systems.jhu.edu)). With data collected from official healthcare sites and sources, the aim of the dashboard was to provide transparent information about the situation as it unfolded. How else could healthcare

those who are less ill from the comfort of their own homes (Hoffman-Jaffe 2020). While the aim of the former is obviously to reduce disease spread, the latter serves to create an alternative to short-supply isolation rooms.

## Panic-Built Hospitals

In Wuhan, reports persist of overcrowded hospitals, lack of medical personnel, poor working conditions and a shortage of test kits, protective gear, etc. In January, China announced (People's Daily 2020) the construction of two emergency hospitals there. They are located about 40km apart and have a total of 2,600 beds for patients in serious condition. Each was completed in 10 days, with the initial plan being 6 days.

Huoshenshan Hospital opened on February 3, with an area of 25,000 square metres and 1,000 beds. It has been staffed with 1,400 military medics of the Chinese People's Liberation Army.



The other one, the 1,300-bed Leishenshan Hospital, started operations on February 5.

On February 16, Qiboshan Hospital in Zhengzhou, Henan Province, began to admit COVID-19 patients. It has 800 beds and is staffed with over 200 medical workers (Ecns 2020). Two days later, a city in Hubei Province, Huanggang, added another 400-bed makeshift facility, rebuilt from the maternity and childcare hospital, for treating COVID-19 patients. 150 doctors and nurses have been dispatched there (Xinhua 2020a).

With no time for planning or consultations, Chinese officials have used blueprints from the Xiaotangshan Hospital in Beijing (Holland and Lin 2020). This 1,000-bed facility was built in seven days during the SARS epidemic in 2003. The hospital admitted one-seventh of the SARS patients in the country within two months, an unprecedented event in the history of medicine. After the

shelter facilities are used to provide emergency aid, treatment and clinical examination services for individuals with mild coronavirus symptoms (Xinhua 2020b).

Some point that such rapid actions would have never been possible in a privately-financed healthcare system (Baker 2020). China was capable of expanding its facility base because on a state level it has fewer bureaucratic restrictions for urgent and massive projects like these, and can allocate resources in a centralised way.

### The Rise of the Remote Healthcare Congress

Scores of healthcare meetings around the globe already offer the opportunity for delegates to attend remotely. All you need is a good Internet connection and a quiet place to watch and you're set.

The reasons for the rise in provision of remote congress attendance range from reducing the global carbon footprint to

to offer everybody everywhere to be part of the ECR online, regardless of any restrictions," it said. "The ECR is a fully digital online congress and can be attended from anywhere in the world via our platform ECR Live on ESR Connect."

Attending a congress in person or remotely depends on what you want to get out of it. For some, networking face-to face is an essential part of an annual meeting; for others, being able to watch sessions and presentations is sufficient.

Whatever the reason, could COVID-19 force congress delegates to think again and take advantage of the feasible and convenient opportunities presented by virtual congresses?

### Drone Surveillance and Tech Detection for Spread Prevention

In healthcare, drones to date have traditionally been used to deliver supplies to remote or inaccessible areas. In the face of the COVID-19, they have been

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epidemic ended, the hospital was abandoned, but has been renovated and put in use for the current outbreak (Wen 2020).

In all the cases, these are not typical, permanent medical facilities, more of disease management centres to be used for a limited period of time. They were built using prefabricated units – fully-assembled, factory-made rooms. Such modular construction has been applied in emergency scenarios in other parts of the world, to assemble a rapid-response medical facility, and it is widely used in China, eg for high-rise buildings (Quito 2020).

These massive facility additions are still not enough, however. Wuhan has been turning its sports centres, exhibition halls and other venues into makeshift coronavirus hospitals with the overall capacity of 10,000 beds. These

time restrictions for busy professionals. Surmounting the challenge of travelling in the face of a coronavirus hasn't been a typical reason for attending congresses via tele-commute. However, the threat of spread of COVID-19 and restrictions on travel in some cases have highlighted the advantages of remote congress.

For example, while announcing that it had received no cancellations for its March event in Vienna, the European Society of Radiology (ESR) pointed to the option of attending its congress online as concerns about the spread of the Wuhan Coronavirus grew (myesr.org). For delegates thinking about refraining from travelling because of the virus and for colleagues in China, ESR issued reassurance that the meeting would be available online.

"The ESR is well-prepared and pleased

deployed in China to press people into donning protective facemasks as part of multiple measures to control the virus.

Several online videos depict urban scenes where drones shame offenders for failing to wear masks. Authorities in rural China were also using drones to keep an eye on citizens out and about without facemasks (rte.ie).

Drones have also been pressed into action to spray disinfectant against virus spread in key public potential contagion areas like train stations.

Elsewhere, thermal imaging has been deployed in busy hubs such as public transport networks to detect if someone has a higher than normal temperature, indicating they may have the virus. China also launched an app that allows people to check if they have been in close contact with anyone with the virus. The 'close contact detector,'

allows the population to track possible contact with infected people through input and cross-referencing of phone data.

While the benefits of such actions are clear (live and remote monitoring of the population to ensure adherence to anti-disease spreading measures, sanitation), critics have commented on the ease with which China has integrated such monitoring tech, saying the methods have a hint of the Orwellian.

While such surveillance and prevention technology could prove its worth again in other healthcare scenarios, the authorities would have to be very cautious that such monitoring did not cross over into intrusion. This is a question for ethics and standards.

## What About Healthcare Workers?

Li Wenliang, the Wuhan physician who was among the first ones to issue a warning about the Coronavirus, and who wasn't taken seriously at the time, recently died after being infected with the virus. There are now 1700 confirmed cases of healthcare workers who have been infected; six have died at the time of reporting this piece.

These healthcare workers are the frontline warriors in the battle against

COVID-19 coronavirus. While everyone is focused on how to contain the virus - through border closures, quarantines, strict airport screen etc, the issue of safeguarding healthcare workers has taken a backseat, which is unfortunate since these are the people who are there putting their lives on the line treating infected patients.


According to findings published in the Journal of the American Medical Association, 40 of the first 138 patients diagnosed at the Wuhan University Hospital were healthcare workers (Wang and Hu 2020). "Health workers are the glue that holds the health system and the outbreak response together," says WHO's Director-General, Dr. Tedros Adhanom Ghebreyesus. "We need to know more about these figures, including the time period and circumstances in which the health workers became sick." According to Tedros, WHO had already disseminated guidelines for protecting healthcare workers but the primary issue seems to be obtaining protective gear (Boseley 2020).


The seriousness of this problem needs to be understood. If healthcare workers are not protected, they will soon become patients instead of providers. It has already been difficult to manage, contain, and treat the

increasing number of infected patients. If healthcare workers themselves are not safe, who will be the patient and who will be the doctor?

Without equipment such as gloves, respirators, disposable suits, etc, how can we expect healthcare workers to survive the virus? Because of the coronavirus, global demand for respirators and masks is now 100 times higher, and prices are 20 times higher (Branswell 2020). In such a scenario, what is the system really doing for the frontline warriors? How are they being protected?

The safety and protection of healthcare workers should be a top priority. Protective gear should be provided to healthcare workers immediately because, in the end, these are the people who will play the most important role in minimising the level of illness and the number of deaths. No matter how many borders you close or how many patients you put in quarantine, if your providers are sick, there is really nothing more that could go wrong. ■

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