30 MINS

# STOPPING THE SUPER SPREADERS

On 20 January, a 35-year-old Chinese woman arriving at Incheon airport near Seoul was confirmed as the first case of COVID-19 infection in South Korea. By the end of February, the country had the most COVID-19 patients of any nation outside China. However, by mid-June, South Korea had seen little more than 12,000 cases and just 280 deaths among a population of 52 million, compared with the UK's more than 300,000 cases and 42,000 deaths among a population of 66 million. And that was despite South Korea successfully holding a general election in April, with a voter turnout of 66%.

How has it managed to control a disease while other nations have failed?

According to Dr Dooyong Park, president of the Korea Occupational Safety and Health Agency (KOSHA), South Korea's success is thanks to three key policies: tracing the movements of those infected, testing for the disease, and the widespread use of face masks.

## Close contact

All three steps are the direct result of lessons learnt from past events, most recently Korea's difficulty in controlling an outbreak of the Middle East Respiratory Syndrome (MERS) coronavirus in 2015. The first element in South Korea's fight to contain COVID-19 – tracking and tracing – might seem controversial to

**AS HEALTH AND SAFETY PROFESSIONALS, WE HAVE HAD TO LEARN TO REASSESS RISK PRIORITIES AND LOOK AT THINGS FROM A DIFFERENT VIEWPOINT**

KOSHA president **Dr Dooyong Park** reveals how the lessons South Korea learned from previous disease outbreaks meant the country was fighting fit.

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privacy-guarding Western populations, but it has actually been developed with the overwhelming support of the Korean people.

'One of the reasons we failed with MERS in 2015 was because the Korean government didn't give people enough information, so the people made their own individual decisions. South Korea is a very democratic society. However, in the face of COVID-19, there has been a definite decision to allow a collective, strict approach,' Dooyong says.

'After MERS, the law was changed to allow the government to use credit card systems and cellular phone systems to track somebody's movements in any subsequent disease outbreak, albeit with certain controls

to protect privacy. But the government only changed the law as part of a social consensus – a recent public survey revealed that more than 90% of Koreans feel the measure does not damage their privacy.

'I think the reason for that approval has come about because we believe this system works. In terms of controlling communicable diseases, the system is very effective because it doesn't just track infected people – the authorities also use the system to announce to the local public where an infected person has been and when. If anybody thinks they might have been in contact with the infected person, they can go and be tested.'

## Patient 31

The tracking system worked well to control the first 30 infections, but a mass transmission of COVID-19 caused by a 'super-spreader' – now known as 'Patient 31' – at a reclusive ShinCheonji church in the city of Daegu turned Korea's experience from an outbreak into a pandemic.

'After Patient 31, we couldn't track down all the infected people, so the government changed policy to include aggressive testing. We now have 611 testing centres across the country with 43 drive-through testing sites. The public was very cooperative with this,

and it meant potentially infected people could be identified very early. If they tested positive for the disease, by law they had to self-isolate for 14 days,' Dooyong says.

Unlike some of the almost farcical situations seen in other parts of the world with inaccurate imported tests, South Korea had its own manufacturing system set up to make reliable tests in substantial quantities.

'Over the last three years, the Korea Centers for Disease Control and Prevention [KCDC] has analysed all COVID virus RNA databases,' Dooyong says.

'Because all coronaviruses have similar RNA sequences, once they knew the

mutation, the KCDC could then quickly adapt the testing system. There is good cooperation between China and the South Korean government, so the KCDC received the RNA information from China at an early stage, and with that information it could develop the testing kit.

'Also, the KCDC has worked with private sector pharmaceutical businesses in Korea to prepare the system. As soon as COVID-19 broke out, they could make huge numbers of testing kits. From the very early stages, we could test up to 20,000 people per day.'

## Supply and demand

The final ingredient in Korea's disease control – face masks – was also satisfied by its advanced manufacturing sector, with almost 130 Korean factories already making 13 million masks a day. In a surprising twist, this is partly 'thanks' to air pollution.

'Korea's need for masks isn't to prevent communicable diseases. During spring and winter we experience fine particle air pollution and there is no way to protect ›

# KOSHA guidelines for employers

- Designate a department or person in charge of quarantine efforts
- Provide opportunities for employees to check their temperatures using thermal scans or non-touch thermometers
- If your employees have symptoms such as fever or respiratory abnormalities, or if they've been abroad in the past 14 days, allow them to use sick leave, annual leave or work from home
- Create an atmosphere where employees can take advantage of paid time-off and flexible working hours. Make sure there are no disadvantages from doing so

## Keep ample distance

- Minimise business trips, both domestic and international
- Ensure workers keep two metres apart (at least one metre) by using available space or changing the directions of monitors, desks, or other work surfaces
- Have employees sit in rows or zigzag in the cafeteria, or install plexiglass between seats

## Keep physical distance but maintain social connection

- Create an atmosphere that minimises extracurricular activities, outings, and happy hours so that people go home directly after work
- Avoid using the same common space
- Provide makeshift meeting rooms to host visitors according to the needs of the workplace

## Meetings

- Use videoconferencing and phone calls as much as possible
- Make sure in-person meetings take place in ventilated spaces where employees can maintain physical distance
- Minimise attendees and maximise efficiency to reduce meeting length

people from this other than to wear a mask,' Dooyong says.

However, for all the Korean public's acceptance of necessary measures, even they were prone to some of the panic displayed elsewhere in the world.

'The Korean people initially tried to panic-buy all the available masks, while industry also wanted all the stock. So even though the number of masks being made was enough, the number of masks available started to run low. The Korean government stepped in to control supply in the public system, while here at KOSHA, we worked with the Ministry of Employment and Labour to help control the supply of masks for industry,' Dooyong says.

'We surveyed all the manufacturers and distributors every week. We also formed the "Visiting Emergency Aid Units" to help face mask manufacturers improve working conditions and provide counselling for workers' health. Then we asked industry about their needs and tried to control and distribute evenly. We also supplied masks for free to small and medium enterprises if they didn't have supply.'

## Call centres

The controlled distribution of masks is far from the only input Dooyong and his team at KOSHA have had in helping to prevent COVID-19 transmission in South Korea's workplaces. As well as providing general advice, individual sectors have needed specific guidance.

'There are some particularly high-risk groups,' Dooyong says.

'For example, telemarketing centres have a high concentration of workers, the distance between workers is very small, ventilation can be poor, and workers cannot wear masks while they are using phones.

'At KOSHA, we strongly encouraged working from home in these situations, however, that can be very difficult because workers need access to dedicated IT systems. So we have provided businesses with alcohol-based hand rubs, masks, separation panels and air cleaning devices for premises with no ventilation systems.

'We have also recommended businesses provide more social distancing by removing part of the workforce, with perhaps a third of the workers rotating. Sometimes these things work, sometimes they don't. We can only try to do our best in these situations.'

## Changing times, changing rooms

While many countries are looking towards South Korea for answers and guides to best practice, Dooyong is open about the fact that his nation, too, is still a hostage to uncertain times.

'As health and safety professionals, we have had to learn to reassess risk priorities and look at things from a different viewpoint. Like the telemarketing centres I've just mentioned, risks are appearing in new areas,' Dooyong says.

'For example, in the meat industry, while the workers wear protective clothes and gloves and masks when they are working, it's actually when the workers come out and get changed or shower in small, cramped changing rooms that there is a high possibility of contracting communicable diseases. Before COVID-19 we didn't know that – we didn't think changing rooms were really our problem.'
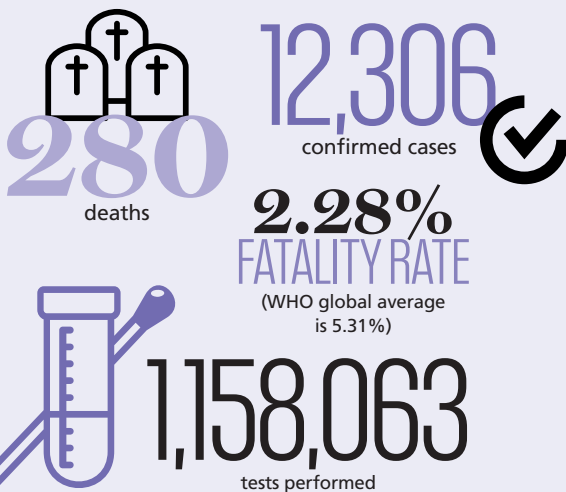
So the learning continues and Dooyong hopes the measure taken so far are enough to keep South Korea safe.

'It's still maybe too early to make a lot of conclusions. While it appears that we are managing COVID-19 successfully, the Korean government and KOSHA know nothing is guaranteed. Maybe at the end of this year there will be another outbreak. All we can say is that our preventative system seems to have worked well so far.' ●

*Dr Dooyong Park, president of the Korea Occupational Safety and Health Agency*

## FAST FACTS
# COVID in South Korea

**280** deaths

**12,306** confirmed cases

**2.28% FATALITY RATE** (WHO global average is 5.31%)

**1,158,063** tests performed

*(all figures correct as of 19 June 2020)*