Transmission only via droplets and contact

A panel of nine of Singapore’s leading infectious disease experts gathered yesterday to discuss the coronavirus outbreak and explain how researchers here are working to overcome the health problem.

The Straits Times posed several questions about the coronavirus to the panel:

**Q What do we know about the transmission of the virus?**

**A** “Following Sars, quite a bit of work has been done on the persistence of viral surfaces and most of the studies indicate that they do not persist very well in a hot, humid environment,” said Prof Tan.

This refers to a temperature of over 30 deg C, and humidity of over 80 per cent. However, Prof Tan noted that this may vary slightly depending on the origins of the virus.

Quite a lot of work has also been done to ascertain which disinfectants work in disrupting viral particles, he added.

“The good news is that we have a hot, tropical environment and, therefore, in the outdoors, the likelihood of viral persistence is lower,” he said.

**Q How are patients here contributing to research on the virus?**

**A** The majority of coronavirus patients here are eager to help researchers understand the outbreak, said Prof Lye.

Many had agreed to offer samples before he could explain the procedure to do so in detail as mandated for such research.

Researchers need to take samples of throat swabs, blood, urine, stools and tears from patients to study the virus as well as people’s immune response.

He said: “Some of them feel guilty and want to do all they can to help. We tell them, there is no reason for you to feel guilty. It is not your fault you are sick.”

So far, 19 patients in Singapore have agreed to help researchers understand the virus better by donating samples. They include the very first patient, who is from Wuhan. Only two have refused so far, he said.

Researchers have yet to approach the more recently warded patients.

**Q Can the virus be transmitted via aerosol?**

**A** Prof Tan said that based on what is currently known, the method of transmission remains through large respiratory droplets and contact.

He added that this question was addressed at a news conference by China’s National Health Commission on Sunday, where it was said that there is no evidence that the new coronavirus is transmitted through aerosols.

“Aerosols may be formed in special situations such as intubation procedures in hospitals,” he said.

The expert panel included Professor Tan Chorh Chuan, chief health scientist at the Ministry of Health; Professor Leo Yee Sin, executive director at the National Centre for Infectious Diseases (NCID); Professor Lisa Ng, senior principal investigator at the Agency for Science, Technology and Research’s (A*Star) Singapore Immunology Network; and Professor Wang Linfa, director of the Programme in Emerging Infectious Diseases at Duke-NUS Medical School.

The other members were Associate Professor Hsu Li Yang, programme leader for infectious diseases at the National University of Singapore’s Saw Swee Hock School; Dr Sebastian Maurer-Stroh, deputy executive director of A*Star’s Bioinformatics Institute; Associate Professor Raymond Lin, director of the National Public Health Laboratory at NCID; Dr Sidney Yee, chief executive officer at the Diagnostics Development Hub; and Associate Professor David Lye, director of NCID’s Infectious Disease Research and Training Office.

Salma Khalik, Joyce Teo and Audrey Tan
Switch off air-con, let in fresh air to cut infection risk: Experts

S'pore's hot, humid climate less conducive to virus' spread as it thrives in cool, dry climates

Audrey Tan
Science Correspondent

On top of washing their hands and distancing oneself, people should switch off the air-conditioner, turn on the fan and get fresh air to reduce the chances of getting infected by the coronavirus.

The reason is that while many worry about the virus, earlier studies have shown that viruses thrive in cool, dry climates.

That would make tropical Singapore, with its hot and humid weather, less conducive for the virus to thrive.

"The 'good news' for Singapore was delivered yesterday by the Health Ministry's chief health scientist, Professor Tan Chorh Chuan, at a press conference.

"The likelihood of viral persistence outdoors is lower," he said, even as he noted the prevalent use of air-conditioning in Singapore.

Professor Tan was one of eight disease experts in Singapore present at the press conference to brief the media on what is being done to fight the virus on both the science and health fronts.

He said plenty of research has been done on how long viruses persist on surfaces following the outbreak of the severe acute respiratory syndrome (SARS) in 2003.

"Most of the studies indicate that due to factors within the humid environment," he added. "For instance, hundreds of infective SARS-CoV-2 particles." The virus that caused SARS is in the same family as the coronavirus, which originated in the Chinese city of Wuhan and has spread globally.

Associate Professor Ho Li Yong, programme leader of infectious diseases at the National University of Singapore's (NUS) Saw Swee Hock School of Medicine, said air-conditioning is something that can't be helped in Singapore, especially during the hot months.

"The enclosed space, where it is less humid and cooler, could help to spread respiratory diseases," he said.

Experts suggest that another way to reduce the spread of diseases is to keep windows and doors open.

The World Health Organisation, in a document outlining how to prevent the transmission of infecting people, said supported window should be kept well ventilated.

Professor Wong Leok, director of the programme in emerging infectious diseases at Duke-NUS Medical School, said ultraviolet rays and heat from the sun could help kill the virus.

"If you can stay under the sun for a while, it would be good." He added, "Vitamins D can also boost the immune system."

Disinfecting surfaces could also prevent the virus from infecting people.

Last month, public transport operator SBS Transit and SMRT said they were intensifying the cleaning of their premises and vehicles.

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