

SARS outbreak over, but concerns for lab safety remain

The recent outbreak of Severe Acute Respiratory Syndrome (SARS) in China which infected nine people and killed one of them is now over said WHO on 19 May. The outbreak, which began in April at a laboratory in Beijing, has raised questions about storing and handling the killer virus in laboratories.

The recent outbreak was the third of four SARS outbreaks associated with a laboratory since 5 July 2003 — when the virus was declared to be under control following a major epidemic which left nearly 800 people dead.

The outbreak in April began after two graduate students working at a laboratory at the National Institute of Virology in Beijing, where experiments using the live SARS coronavirus were conducted in February and March, became infected with the virus. WHO experts are helping the Chinese authorities investigate the source or sources of infection.

Dr Angela Merianos, the SARS focal person at WHO's Global Alert and Response unit, noted that the virus can be transmitted by droplets, through contact with contaminated objects as well as by touching the eyes, mouth or nose with contaminated hands but said it

was still unclear how the lethal virus had escaped at the Chinese institute. WHO is working closely with China's Ministry of Health and provincial health authorities to ensure biosafety procedures at the Institute of Virology are correct. Chinese health authorities are reviewing biosafety standards in other facilities undertaking research on the SARS virus.

"The investigation conducted to date has yet to identify a single source of infection or single procedural error at the institute. Consequently the route or routes of transmission are not known at this time," said Merianos, who visited China in May. It also remained unclear how two researchers at the institute became infected since they were not even working with the SARS virus. All those who became infected in the latest outbreak were people working at the institute and people who came into contact with them.

One of the nine SARS patients, a 53-year-old physician in China's Anhui province died on 19 April after being infected by her daughter, a 26-year-old postgraduate medical student who had been doing research at the Beijing institute. Her daughter and the seven other patients were treated in isolation at Ditan Hospital in Beijing. At the time of writing, seven patients have recovered whilst one remains in critical condition.

"The big question is: is it safe to handle SARS?" said Dr Cathy Roth from the Dangerous and New Pathogens team at WHO's Global Alert and Response unit, adding: "Countries need to identify all the laboratories holding the virus and to ensure that all correct biosecurity measures in those labs are in place." Roth said it was impossible to know how many laboratories across the world were storing SARS virus stocks.

She noted that WHO had issued recommendations in April, October and December last year on handling and storing SARS specimens and cultures in laboratories. Since the latest outbreak WHO has called on the Chinese Government to ensure that all research work on the live SARS virus should be conducted at least to standards that correspond to WHO biosafety level 3 guidelines to achieve maximum containment. Dr Merianos, who recently visited the Institute for Virology in Beijing, could not say whether laboratories here or in other Chinese research facilities adhered to biosafety level 3. "There is evidence that work practices in the lower level labs have room for improvement," Dr Merianos said, referring to the Beijing institute.

The third highest of four risk groups which are set out in the second edition of the WHO Laboratory biosafety manual related to handling infectious agents that pose a high risk to individuals, but a low risk to the population in general.

The Beijing institute was closed on 23 April to allow most of its staff to be quarantined for medical observation, while a handful of staff stayed on to continue essential experiments and care for laboratory animals. ■

Fiona Fleck, *Geneva*



Reuters/China Photos

Supplies arrive for staff under quarantine at the National Institute of Virology in Beijing, China, 30 April 2004. A laboratory at the institute is thought to be the source of the recent SARS outbreak.

Cardiovascular disease — a global health time bomb

Cardiovascular diseases such as heart disease, stroke and diabetes — usually associated with wealthy, developed countries — have become far more prevalent in poorer, less developed countries than previously thought, according to a new report published by Columbia University's Earth Institute in New York on 26 April.