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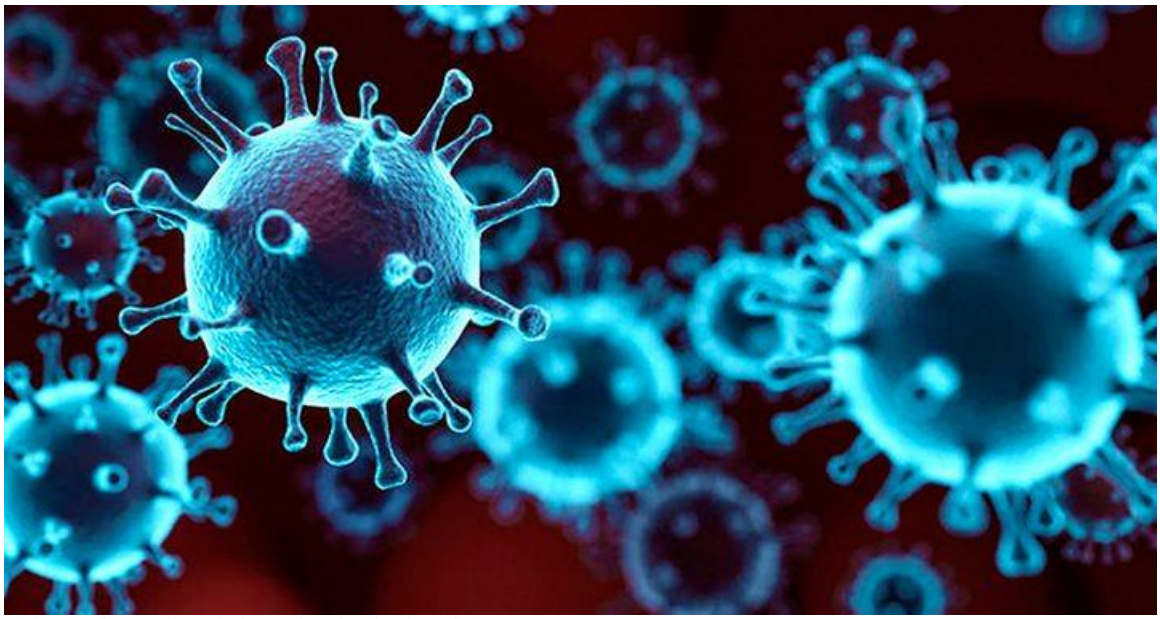
DM168

EPIDEMICS AHOY

The real spectre of Pathogen X and another global pandemic



(Photo: uknow.uky.edu/ Jongho Shin/Wikipedia)

By Estelle Ellis 02 Jan 2023

While Covid-19 and its health and social impacts on the world are slowly but surely receding from the public mind, epidemiologists and virologists are preparing for other diseases that will surely come.

While the emergence of Pathogen X, the potential driver of a new global pandemic, is uppermost in public health experts' minds, virologist and epidemiologist Prof Salim Abdool Karim says the latest data from Discovery Health Medical Scheme members is showing that the long-term consequences of Covid-19 infections will have a massive impact on the health system in years to come.

Other potential dangers that continue to pose a threat include a new variant of the SARS-CoV-2 virus, a potentially severe flu virus and other viruses that jump from animals to humans, such as Ebola.

Karim says there are three scenarios for the next three to five years.

"The first is that we need to acknowledge and appreciate that we are still living in a pandemic. It hasn't left us.

“The emergency of the Covid-19 pandemic is receding. Hospitals are not getting full, people are not dying in the same way as in 2020. But this doesn’t apply to the whole world,” he said.

“Many countries are still dealing with waves of infections. In the United States, there are 400 deaths a day due to Covid-19. In South Africa, we are still in double digits. Some days we record a low three to four deaths and other days 20 to 30 deaths. People are still dying, but not to the extent that we were concerned about in 2020.

“There is still a reasonable chance that the virus can mutate and create a new variant. This virus will have the potential to escape our current immunity.”

Karim says two descendants of the Omicron subvariant BA.5 are the latest mutations of the virus.

“They can escape almost every antibody that is available. That means that none of the monoclonal antibodies work against them,” he said.

Monoclonal antibodies are clones of the human body’s antibodies that are made in a laboratory and meant to stimulate the immune system.

“The other problem is that they will escape vaccine-induced immunity,” Karim added. “That is our ongoing concern – that we may get to a new variant that has a high level of escape and that this will spread.

“The big plus is that the vaccine is doing very well in preventing severe Covid-19. We are hoping that it will continue. But we have no guarantee.”

Karim says one fear about the unknown is whether the virus will be able to mutate to the extent that it can escape a size-able amount of the body’s T-cell response.

T-cells are a specific type of white blood cell that kills the cells in the body that have been infected by a specific virus, such as SARS-CoV-2.

“How likely is the potential of a new variant? I would say there is a small chance.

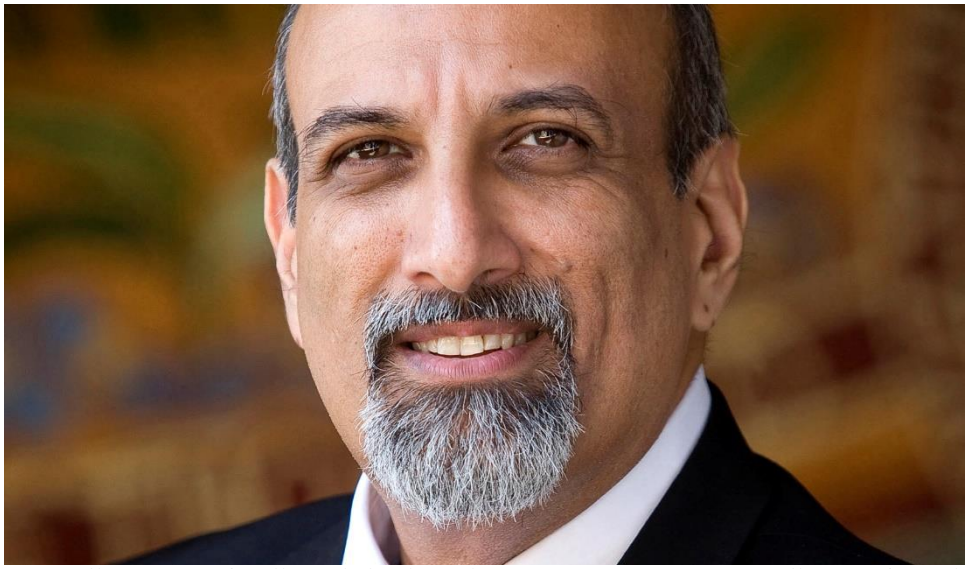
“We were expecting a wave to occur in the middle of last year, but after we had our BA.5 wave we haven’t seen a new wave.

“The new mutations are not spreading in the same way [that] Omicron did,” he added.

In China, says Karim, there is a “powder keg of problems” that are caused by the spread of Covid-19.

“There is not sufficient vaccination coverage and no exposure to the natural virus. The country can’t keep up with strict restrictions. Omicron is just too highly infectious.”

He says the second problem South Africa faces is a pandemic of long Covid-19 for the next three to five years. This means dealing with health problems caused by infections currently occurring as well as those that occurred in the past.


According to Prof Salim Abdool Karim, SARS-Cov-2 causes disease from head to toe. (Photo: CAPRISA)

“If you look at recent statistics released by Discovery, you will see that heart disease has doubled. That is how serious it is,” said Karim.

“The third problem is whether we could have a new pandemic even though the Covid-19 pandemic is not finished yet. The answer to that is that it is an ever-present threat and it will come from three groups of viruses.

“Influenza will always remain a threat. We are due at some point in the near future for a flu pandemic. These come in cycles every decade or so, but we haven’t had one for quite a while,” he said.

“We don’t know what is coming next. It poses a problem. It hasn’t been a problem because of masking and social distancing. We had no flu in South Africa in 2020 and 2021, then the flu came back this year.

“We could be seeing a significant flu outbreak in the next winter.”

Karim says there is also the potential for a new coronavirus.

“There are thousands of these, so we live with this threat. We had three in the last 20 years: SARS and then MERS and then came SARS-CoV-2. We are likely to see another coronavirus in the next decade,” he said.

The third of the viral threats, according to Karim, are viruses in the same class as Ebola, which causes haemorrhagic fever.

“It remains an ever-present threat,” he said. “We saw how it spread to the United States. What we worry about with this disease is the high fatality rate. Another big problem is that doctors and nurses can easily get it.”

Karim says the outbreak of diseases that are entirely preventable, such as the current measles outbreak in sub-Saharan Africa (the large outbreaks are in Limpopo and Mpumalanga at the moment), are not on the same level of concern as an epidemic.

“Childhood infections can flare up at any time. We don’t worry about them as epidemics because they don’t spread as fast.”

Discovery reports worrying trends for those who had Covid-19

South Africa’s largest medical scheme administrator, Discovery, has released worrying statistics showing the impact of Covid-19 on its members’ health.

A year after members of Discovery’s medical scheme had had Covid-19, or sooner, patients were admitted to the hospital for the following serious conditions:

- 29% had to be admitted for circulatory system conditions, with cardiac catheterisation for ischaemic heart disease making up 19% of these;
- 24% were admitted for respiratory system conditions, with 30% being diagnosed with simple pneumonia and whooping cough;
- 16% needed hospital care for nervous system conditions, of which a third had developed seizures;
- 15% had mental health conditions that needed hospitalisation and all of them were diagnosed with depression; and
- 7% had kidney and urinary tract conditions, with kidney and urinary tract infections making up 51% of these cases.

Women, people without chronic conditions and teenagers (12 to 18) were at the highest risk of admission within a year after being infected.

This data came from 609,890 Discovery members who had a confirmed SARS-CoV-2 infection by 31 May 2022.

According to the statistics available to Discovery, those who contracted the Beta variant of the SARS-CoV-2 virus, which was in circulation from October 2020 and confirmed as a new variant in December 2020, had experienced the highest medical admission risk (64 times higher relative risk of admission) and the highest absolute medical admission risk (172 medical admissions per 1,000 infections) when compared with those who did not get infected at this time.

Those who contracted the “original” virus early in the pandemic experienced an increased risk of admission for the greatest number of months.

But the number of admissions in the 12 months after getting Covid-19 did not change significantly between the variants.

Unvaccinated people, according to the Discovery data, experienced a higher relative risk of admission (47 admissions compared with 20 for the vaccinated) and absolute medical admission risk (136 admissions compared with 56 admissions for the vaccinated).

New corona-like virus found in Russian bat could infect humans

On 11 December, scientists at Washington State University revealed that they have discovered a virus in a Russian bat that would likely be able to infect humans and is related to SARS-CoV-2, the virus that causes Covid-19.

A team led by researchers at the university's Paul G Allen School for Global Health said in a statement that the virus is known as Khosta-2.

The scientists have identified spike proteins from the bat virus that can infect human cells and are resistant to both monoclonal antibodies and serum from SARS-CoV-2 vaccine recipients.

"Our research further demonstrates that [these types of viruses] circulating in wildlife outside of Asia – even in places like western Russia where the Khosta-2 virus was found – also pose a threat to global health and ongoing vaccine campaigns against SARS-CoV-2," said Michael Letko, Washington State University virologist and corresponding author of the study, which was published in the journal PLOS Pathogens.

He added that this discovery underscores the importance of finding a universal vaccine for this class of viruses.

"Right now, there are groups trying to come up with a vaccine that doesn't just protect against the next variant of SARS-2 but actually protects us against [all viruses in this class] in general," Letko said.

"Unfortunately, many of our current vaccines are designed for specific viruses we know infect human cells, or those that seem to pose the biggest risk [of infecting] us. But that is a list that's ever-changing.

"Genetically, these weird Russian viruses looked like some of the others that had been discovered elsewhere around the world, but because they did not look like SARS-CoV-2, no one thought they were really anything to get too excited about," Letko said.

"But when we looked at them more, we were really surprised to find they could infect human cells. That changes a little bit of our understanding of these viruses; where they come from and what regions are concerning." **DM168**