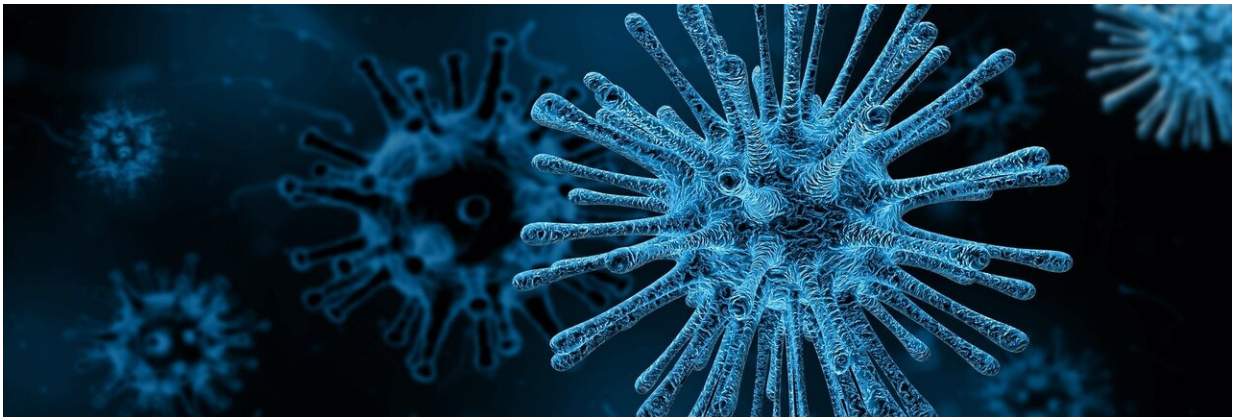


# Remembering humanity's triumph over a virus, 40 years on

May 8 2020

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As scientists scramble for a COVID-19 cure and vaccine, the world on Friday marked a pertinent anniversary: humanity's only true triumph over an infectious disease with its eradication of smallpox four decades ago.

On May 8, 1980, representatives of all World Health Organization member states gathered in Geneva and officially declared that the smallpox-causing variola virus had been relegated to the history books—two centuries after the discovery of a vaccine.

"Its eradication stands as the greatest public health triumph in history,"

WHO chief Tedros Adhanom Ghebreyesus told a a virtual briefing.

"As the world confronts the COVID-19 pandemic, humanity's victory over smallpox is a reminder of what is possible when nations come together to fight a common health threat," he said.

Smallpox is a highly contagious disease that was transmitted via droplets during close contact with other people or contaminated objects, sparking high fever and a rash that left survivors permanently disfigured and often blind.

But many did not survive. The virus killed up to 30 percent of all those infected and is estimated to have killed more than 300 million people in the 20th century alone.

Smallpox is thought to have existed for thousands of years, with the earliest documented evidence of the vesicular skin lesions believed to be caused by the disease discovered on the mummy of Egyptian pharaoh Ramses V.

The devastating disease was also the target of the world's first vaccine, discovered by scientist and physician Edward Jenner in 1796.

## **'Public will'**

But the idea of fully eradicating smallpox only emerged nearly two centuries later, in 1958, amid a "momentary 'detente' between the Russians and Americans", US epidemiologist Larry Brilliant told AFP.

At a time when smallpox remained endemic in more than 30 countries and was still killing more than two million people annually, the Soviets proposed to show what global cooperation is good for and eradicate the disease.

"Immediately America agreed," Brilliant said, juxtaposing the leadership and international cooperation seen back then, during the Cold War, to the "nationalism" colouring the current response to the novel coronavirus.

"There was public will," he said.

Four decades later, as the world reels from the shock of the COVID-19 pandemic, decision-makers should look for inspiration to the tireless efforts to isolate those infected with smallpox and trace their contacts, said Rosamund Lewis, in charge of the smallpox file at the WHO.

## **Lessons for COVID-19 response**

"We can learn a lot from smallpox for the COVID response," she told AFP.

The WHO initially did not have the funds needed to get to work seriously on rooting out smallpox, but when it finally launched the global eradication campaign in 1967, experts "went door-to-door" to find infected people, Lewis said.

She lamented that it had taken too long for many countries to realise the importance of this basic public health "weapon" against COVID-19, as it has spread worldwide, killing more than 260,000 people in a matter of months.

Experts stress that contact-tracing will be of vital importance until a vaccine against the new virus is developed and available—something expected to take at least a year.

Jenner came up with the idea for a smallpox vaccine after observing that milkmaids who previously caught cowpox did not catch smallpox, and

used the usually fairly harmless virus to immunise against the far more deadly disease.

Before the emergence of the vaccine, people engaged in inoculation to immunise against smallpox, inserting powdered smallpox scabs or fluid from a patient into superficial scratches made in the skin, in the hope it would produce a mild but protective infection.

While this process did have an immunising effect, "the inconvenience was that it allowed smallpox to circulate," said Anne-Marie Moulin, head of research at the French National Centre for Scientific Research.

Improvements to the vaccine, including the abolition of the need for refrigeration, greatly increased its access and availability and paved the way for the eradication campaigns to come.

After a decade-long major push, the last known naturally occurring case of smallpox was seen in Somalia in 1977.

A year later, however, a British medical photographer working near a smallpox research lab became infected and died.

## **Bioterrorism threat?**

Since then, a global debate has raged over whether or not variola virus samples should be destroyed.

Only two places in the world are authorised to keep samples of smallpox: the Centers for Disease Control and Prevention at Atlanta in the United States, and the State Research Centre of Virology and Biotechnology (VECTOR) in Novosibirsk, Russia.

Washington and Moscow have long maintained the importance of

retaining the samples for research purposes.

But decades after its eradication, the threat of smallpox still looms large, with fears that the remaining virus samples could pose a bioterrorism threat swelling since the September 11, 2001 terror attacks.

Compared to smallpox, "COVID-19 is just a training exercise", David Evans, a virologist at the University of Alberta in Canada, told AFP.

If ever reintroduced, "smallpox could be devastating in the first weeks when entering a world of largely immunologically naive persons," warned Rosine Ehmann of the Institute of Microbiology for the German Armed Forces.

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