

# TB, HIV and Covid-19: urgent questions as three epidemics collide

By [Emily Wong](#)

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*Tuberculosis (TB) and HIV pose a significant burden on South Africa's health system. There's a close relationship between the two. About [60%](#) of TB patients are also HIV-positive. The novel coronavirus (Sars-CoV-2) is likely to be of particular concern for communities with high rates of TB and HIV. Sars-CoV-2 and its resulting disease (Covid-19) haven't been fully researched and understood yet. But speculation based on the behaviour of other viruses and chronic illnesses raises concerns that HIV and TB patients may have a higher risk of developing severe disease. Emily Wong answers some questions.*



Doctors Without Borders supporters march in protest to the American Consulate in Johannesburg in 2012 over lack of funding to fight HIV. Photo by Foto24/Gallo Images/Getty Images

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## Are people with TB more susceptible to infection with SARS-CoV-2?

SARS-CoV-2's primary target is the lungs where it causes inflammation in the delicate tissues that usually allow oxygen to transfer into blood. In mild cases, Covid-19 can just cause a cough, but in severe cases the lungs can fill with inflammation and fluid making it very difficult for them to provide adequate oxygen to the rest of the body. In people who are otherwise healthy, most cases of Covid-19 are mild or moderate.

At this time, I'm not aware of any data that directly address whether TB makes people more susceptible to Covid-19. But from the Chinese experience, we have [seen](#) that people with chronic lung disease are more likely to have increased severity of Covid-19. On that basis, we are concerned that people with undiagnosed active TB, or people currently undergoing treatment for TB, may have increased risk of developing more severe Covid-19 disease if they become infected with SARS-CoV-2.

There is also increasing recognition that post-TB chronic lung disease can be an important long-term [consequence of TB](#). We are concerned that this could also affect Covid-19 severity. After TB, people can get bronchiectasis – chronic damage to the airways of the lung. This can predispose them to other lung infections. Another lung condition – chronic obstructive pulmonary disease – can be caused by tobacco use or by the changes left in the lung after TB.

Even though there's no data about the effect of post-TB lung disease on Covid-19 at this point, we are concerned that

people who have had TB in the past – and have been left with some lung damage – may have a more difficult and severe time with Covid-19.

## What about people infected with HIV?

There is also very little data to guide us here. But we know that in general HIV infection has profound effects on [lung health](#) and [immunity](#). This is why HIV infection increases susceptibility to both Mycobacterium Tuberculosis (Mtb) – the bacterium that causes TB – infection and TB disease. We are therefore concerned that HIV infection may also affect SARS-CoV-2 infection and Covid-19 severity.

But most experts think that people who are on antiretroviral therapy and whose viral loads are suppressed will probably have a better time with Covid-19 than [people who aren't](#). It is very important that people keep taking their HIV medications throughout any disruptions caused by the current Covid-19 epidemic.

## What will the impact of the SARS-CoV-2 epidemic be on TB and HIV services in South Africa?

This is a major concern. Even countries with better resourced national health systems have [rapidly become overwhelmed](#) as the Covid-19 epidemic hits.

South Africa has the world's largest antiretroviral programme. Huge progress has been made. Even in KwaZulu-Natal, the epicentre of the HIV epidemic in South Africa, new HIV infection rates have been [dropping](#). This is because of tremendous efforts to test people and to put people on antiretroviral treatment in a sustained way. Other factors have included national programmes like voluntary medical male circumcision.

The country has also started to see a [decline](#) in TB rates. We think this is related to improvements in the HIV treatment [coverage](#). This is good news. But it's the result of massive public health programmes that have taken a huge amount of time and effort to set up and optimise. And they're still challenged by shortages of human and system resources.

We are very concerned about the impact that Covid-19 epidemic could have on HIV and TB services.

Thought is already going into how to try to maintain these critical HIV and TB services. In light of an impending health crisis, attention is on how to maintain sustained access to HIV and TB care. The President's Emergency Plan for AIDS Relief (PEPFAR) and the South African HIV Clinicians Society are trying to address this. For example, they are [urging](#) the health system to make six months of antiretrovirals available to people to save them from having to visit their clinics every month.

## Are there extra precautions that individuals with TB and TB/HIV can take?

It's very important that people ensure a supply of their HIV and TB medications and take them regularly.

At this point all South Africans should be heeding the call made by the [President](#) to focus on the basic hygiene interventions such as frequent hand-washing as well as implementing social distancing to the maximum extent. That means avoiding contact with groups of people outside of households, and staying home strictly.

All of these measures are extremely important, whether someone is personally at higher risk of severe infection, or for people who may not personally be at risk of more severe disease but may have a family member who's older or HIV-positive or a neighbour who falls into any of those categories.

At this point the national recommendations apply to everyone. All South Africans need to take them very, very seriously because millions of people are immuno-suppressed due to HIV or have some lung compromise due to prior TB infection.

## Will any of the research on vaccines in South Africa be useful in the search for a Covid-19 vaccine?

The fact that South Africa has robust vaccine trial infrastructure for both TB and HIV is undoubtedly to its advantage when it comes to thinking about Covid-19 vaccine development. There are already candidate Covid-19 vaccines in human testing. The company Moderna in collaboration with the National Institute of Allergy and Infectious Diseases in the US have started clinical trials of an [mRNA vaccine candidate](#). Other candidates are also [under development](#). When these are ready for larger scale human testing, the global scientific community will almost certainly use existing vaccine trial networks to do this testing. Because of both HIV and TB research efforts to date, South Africa is very well represented.

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