

New TB drug offers glimmer of hope in S.Africa

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This photomicrograph reveals *Mycobacterium tuberculosis* bacteria using acid-fast Ziehl-Neelsen stain; Magnified 1000 X. The acid-fast stains depend on the ability of mycobacteria to retain dye when treated with mineral acid or an acid-alcohol solution such as the Ziehl-Neelsen, or the Kinyoun stains that are carbolfuchsin methods specific for *M. tuberculosis*. Credit: public domain

Drug-resistant tuberculosis is a major health challenge across much of Africa, but a new medicine being pioneered in South Africa could be a breakthrough after decades of frustration.

Bedaquiline is being made available to 3,000 people suffering side effects of the usual [drug-resistant tuberculosis](#) treatment, or who have developed complete [drug](#) resistance.

The early signs are encouraging, doctors say, though bedaquiline hasn't yet been tested in large-scale [clinical trials](#).

The new drug—one of the first new tuberculosis antibiotics released in 40 years—was first given to 217 South African patients as part of an early access programme.

Jennifer Hughes, a 36-year-old British doctor in Cape Town, said she has seen the benefits.

Already, word has spread at Hughes's clinic in Khayelitsha, a poor township, and people are coming from all over the city requesting the new drug, developed by US-based pharmaceutical company Janssen.

"Everyone has heard that this is where you get better treatment," said Hughes, who recalls the "really, really happy day" when her first bedaquiline patient was declared tuberculosis-free in November last year.

South Africa has one of the worst tuberculosis epidemics in the world, with more than 1,000 cases per 100,000 people and the department of health describing the rise of drug-resistant tuberculosis as a "major public health problem."

"We want to get 3,000 patients on bedaquiline this year, and plans are in place to scale up," said Norbert Ndjeka, South Africa's director of the drug-resistant tuberculosis programme.

"The drugs are already in a number of our facilities. Definitely these

drugs will reach the patients."

The treatment is also being used in Russia and has received conditional guidelines from the World Health Organization (WHO).

But clinical trials aren't concluded, and the drug can be prohibitively expensive—factors that have limited its distribution.

Drug resistance growing

Ndjeka said South Africa was paying approximately \$1,000 per six-month course of bedaquiline, which can run a hefty price tag of up to \$30,000 in developed countries.

Globally, drug-resistant tuberculosis cases are growing so fast that last year the WHO warned that rates were at "crisis levels."

Tuberculosis, a contagious bacterial infection of the lungs, is one of the world's most deadly diseases, killing 1.5 million people in 2013.

Though promising, experts point out that the new drug is not a silver bullet and has side effects of its own, including liver and heart complications.

"The treatment we've got is not great, but we know what the [side effects](#) are," said Andrew Black, a pulmonologist at the University of Witwatersrand in Johannesburg. "At the moment we don't know (enough) about the new drug."

On a Wednesday morning in March, Black was on duty at a drug resistant tuberculosis clinic at the Charlotte Maxeke Johannesburg Academic Hospital.

Over 20 people were waiting for treatment, all with white masks covering their mouths.

Overhead, ultraviolet lights—light kills tuberculosis germs—cast a purple glow on the room. Occasionally, a person let out a hacking cough.

While the new drug is welcome, South Africa's ability to combat [tuberculosis](#) is held back by an overstretched health care system, said Black.

People often default in their [treatment](#) because they have to travel so far to a clinic and miss countless days of work.

Still, despite the challenges, Black believes South Africa is making progress.

"We won't know if we're winning for a couple of years," he said, "but it's not like HIV was, we're not ignoring it."

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