A chest X-ray will be one of the first indications of TB.

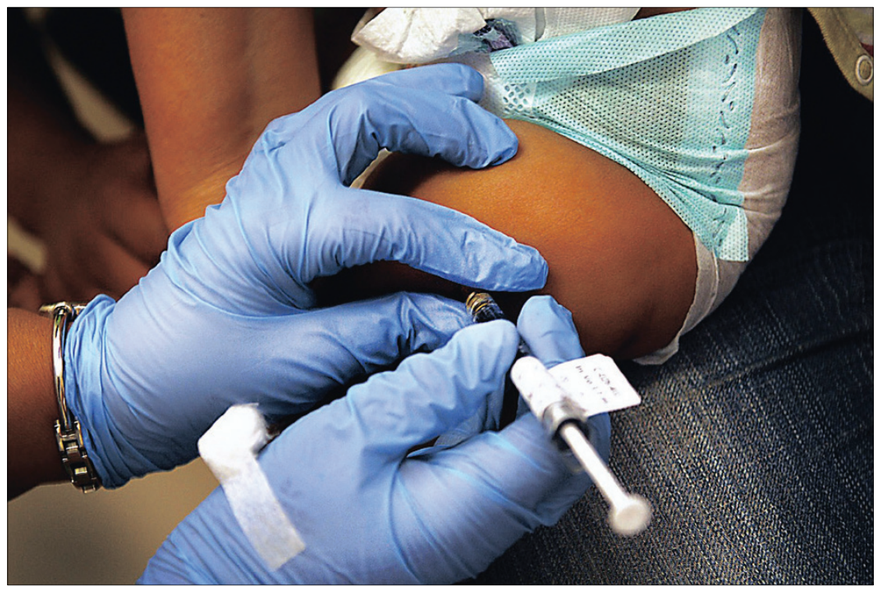
VACCINE UPDATE

THE BCG vaccine is one of the most widely-used of all current vaccines, and overall it reaches more than 80% of all newborn children and infants in countries where it is part of the national childhood immunisation, including South Africa.

But the true protective effect of the vaccine among HIV-infected and uninfected children is largely unknown, with the known protection that is provided by the vaccine limited to preventing disseminated forms of tuberculosis especially TB meningitis.

While new experimental vaccines are in the pipeline, it is unlikely these will be available for routine use within the next few years.

CONTACT INFORMATION: The national HIV and TB Health Care Workers hotline number is 0800 212 506. Alternatively, SMS 071 840 1572.



The true protective effect of the TB vaccine among HIV infected and uninfected children is largely unknown.

Prejudice is a big hindrance

Tomorrow is World TB Day, the day when researchers, scientists and ordinary citizens are asked to think long and hard about a disease that is curable, yet still more than 4000 people die from it daily. **Liz Clarke** filed this report

ARE we winning the war against TB? That's what ordinary people in the street want to know.

On paper, the 70000-year-old disease should be a thing of the past.

Effective drugs have been developed, and sophisticated diagnostic tools with enhanced capacity to diagnose TB within two hours have been introduced. Yet even with these incredible, often startling advancements in TB management and treatment, the world still grapples with this killer disease.

Dr Mario Raviglione, director of the World Health Organisation's Global TB Programme, said: "We have had gains but the progress is far from sufficient. We are still facing a burden of 4400 people dying every day, which is unacceptable in an era when you can diagnose and cure nearly every person with TB."

In 2014 alone, TB killed 890000 men, 480000 women and 140000 children. Of the 1.5 million people killed by TB, 400 000 were HIV-positive, said the World health Organisation (WHO). HIV's total death toll in 2014 was estimated at 1.2 million, which included the 400000 TB deaths among HIV-positive people, the WHO said.

You then have to ask why the burden is still so high?

Leading KZN-based TB and HIV researcher, Dr Kogie Naidoo, who has spent more than a decade investigating ways to reduce sickness and death from TB disease, will tell you there is no easy answer, no magic bullet and no quick fix.

"We have to think differently," she says.

"If we have to take the message into schools where 5-year-olds can learn about TB, that's what needs to happen. They need to understand that if family members cough near them and haven't been tested for TB they could become very sick. We are in the midst of an epidemic, a TB crisis," she says. "And we need to think out of the box about how to manage it more effectively and how to get people to test early for TB, get on to treatment, and complete the course of TB therapy. If clinic hours need to change to accommodate those that work, then so be it."

But finding solutions is not easy.

South Africa bears the greatest brunt of the TB/HIV co-infection epidemic. An estimated 6.4 million people live with HIV with a prevalence of 18.% among the 15-49 year age group. TB/HIV co-infection is one of the leading causes of premature death. It is compounded by the emergence of drug resistant strains of TB, which are more difficult to manage and very costly to treat.

TB scientist Kogie Naidoo is even more determined to get the message across.

Nowhere is the race to harness respiratory tuberculosis more urgent than in KZN. While statistics show that the overall TB rate is falling, the rate of the more dangerous multi-drug resistant strain is going up.

The province has the highest prevalence of TB in the country, with more than 100000 current cases, of which nearly 7000 are children under the age of five. KZN also had the highest co-infection rate of TB and HIV, with up to 655 of all TB patients also infected with HIV.

Incidence

In an endemic area like KZN, which chronicles some of the highest TB incidence figures in the world, there are no barriers dictating who will get the disease and who won't.

Naidoo puts a finer point on it and tells you that nobody in KZN is risk free.

"You could be in a supermarket and an infected person coughs near you. That's enough to put you under threat," she says. "High risk behaviour puts people at risk for acquiring HIV, however with TB, you could be sitting in a bus or a taxi with closed windows when someone infected with TB coughs near you. You breathe in the contaminated air and you become infected.

Is this message hitting home? No it's not, says Naidoo, who believes that prejudice and misconception are the biggest drawbacks in the fight against the disease.

"TB is treatable and curable. Nobody should be dying of it," she says. Even extreme multi-drug resistant strains are treatable, provided there is an early intervention."

And that is the crux of the matter, she says. People are dying of TB, when they shouldn't be, she explains, adding that at least two thirds of premature deaths from TB are preventable.

"In this day and age when science has given us so many tools to prevent unnecessary TB related deaths, this is very frustrating."

Not that she is put off her mission to change the status quo.

"If anything, I am even more determined about getting the message out there," she says "If somebody has a persistent cough, don't ignore it. If someone has a fever and complains of night sweating, don't wait. Get medical advice. Every undiagnosed infection puts the next person at risk and increases the risk of spread."

Then why is there such reluctance to get tested?

The reality, says Naidoo, is that people are still ashamed of TB and don't want to tell anyone if they have any of the symptoms, insisting that there is nothing wrong with them.

"As a result people are presenting with the disease far too late when complications have already set in," she explains. "When we ask patients why they have left it so long, they say they are too scared to tell their families and friends, or their place of work, for fear of being ostracised or worse, losing their job. The hospitalisation and treatment then becomes a life and death matter, involving huge expense, and time-consuming input from the medical staff. All too often, these patients don't make it."

Researchers like Naidoo believe it is a five-point impact message that needs to be broadcast loud and clear. It goes like this:

TB has nothing to do with risky behaviour so there should be no stigma attached to it. While some are more vulnerable, it can strike affluent and poor communities alike, anywhere any time.

Early diagnosis and prompt treatment is imperative

Every primary health care clinic in the province has access to a rapid two-and-a-half hour test that will identify whether a patient has a drug resistant form of TB that could require an alternative line of treatment.

There is also a toll-free hotline, which provides information to all health-care workers in South Africa on all aspects concerning the treatment of HIV and TB.

Medication is effective, with non-infectiousness occurring after two weeks. The required six-month one pill a day treatment regimen is far shorter and simpler than the previous 12 months course.

Looking ahead, the National Department of Health has put in place a "90-90-90" TB testing and treatment campaign in line with the global disease reduction targets. This involves 90% of eligible people being tested for TB, 90% of people diagnosed with TB being put on treatment and 90% of people starting TB treatment completing the treatment and lowering the risk of multi-drug resistance.

Targets

"I believe we can reach these targets," says Naidoo, "But we need businesses and communities to wake up and understand the urgency."

If you should ask her why she is so passionate about beating the scourge of TB her answer is simple and from the heart.

"When you have seen a tiny little girl die because testing and treatment came too late to save her, you'll understand."

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● Naidoo is head of the Treatment Research Programme at the Centre of the AIDS Program of Research in South Africa (Caprisa). She has been a lead investigator in Caprisa's clinical studies aimed at optimising treatment strategies for TB-HIV co-infected patients, most notably the Caprisa SAPiT trial, which served as the basis for the WHO Rapid Advice on TB-HIV treatment integration. These findings were subsequently incorporated into the WHO international guidelines, the US government DHHS guidelines and the South African treatment guidelines for TB-HIV co-infected individuals.

A hero on the run to save lives

CAPE Town-based medical doctor, Dalene von Delft, 33, pictured, was working as a medical officer when she contracted multi-drug-resistant tuberculosis (MDR-TB), probably from exposure to infected patients.

"On Christmas Eve of 2010" she recalls, "I got the bad news that I had contracted occupational MDR TB."

Before long she was in a hospital isolation ward, battling the effects of TB. She had a 3cm hole in her lung and was slowly going deaf as a result of the medication she needed to control such a drug-resistant strain of the disease.

She was having to take 30 pills a day and her chances for survival were not good, and they would become much less if she dared stop the drug that was robbing her of her hearing.

Von Delft recalls that at the time of her diagnosis, she was working in the paediatric department of a large state hospital.

She began to experience what presented as a persistent post-nasal drip-type dry cough.

After three weeks she began antibiotics, continuing to work night duty in the neonatal ward until a colleague insisted she have an X-ray.

This revealed a large cavity in her upper lobe.

When she started to lose

her hearing, she applied for compassionate access to a new drug called Bedaquiline.

The drug – allowed on a limited basis – replaced the one causing irreversible hearing loss, thus saving her hearing and helping her to be cured of TB.

Along with her husband, and with some fellow TB survivors and activists, she founded a group called TB Proof, which advocates for new drugs to be developed and made available to all people with TB in South Africa and globally.

TB Proof was awarded the Centre for Global Health and Diplomacy Award for distinguished work in the field of Global Health Diplomacy.

UPDATE ON BEDAQUILINE

In March 2014, the South African Department of Health in partnership with non-governmental organisations like Right to Care and Medicines Sans Frontières (MSF) began a programme to treat a small number of extensively drug-resistant (XDR-TB) patients with the first new TB drug in 40 years, bedaquiline.

XDR-TB is resistant to both of the most common anti-TB drugs as well as the two most effective antibiotics used as second-line drugs.

It is also particularly deadly. Only about 20% of South Africa's XDR-TB patients are ever cured.

Initially launched at four sites in Klerksdorp, Edenvale, Khayelitsha and Durban, the programme collected safety and efficacy data to motivate for Medicines Control Council (MCC) registration of the drug for use in South Africa which was approved in October 2015.

Based on limited data to date, bedaquiline has shown to be very effective in achieving a cure for XDR TB patients.

The South African Department of Health started providing bedaquiline under programme conditions to patients last year and up until now has started the most patients in the world on the new drug, a total of 1 752 (out of 3 138 globally).

● Medical doctor Thato Mosidi, 29, realised she had an important role to play in the treatment of and education about TB in South Africa after her own difficult experience battling extremely drug-resistant tuberculosis (XDR-TB).

Mosidi believes that by using her status as a patient and a doctor and by sharing her story publicly, she could start a social dialogue about the condition and help change how people view TB.

"I believe if we start talking about it and educating people about the disease, we'll be well on the way to eradicating it."

● Ingrid Oxley was 29 years old and working as a dietitian in public

hospitals, when she contracted TB. She finished her nine months' treatment in 2011 and in 2012 was diagnosed with pre- XDR-TB, which required a further two years of treatment.

She spent 75 days in hospital and very nearly lost her life.

● Dr Uvistra Naidoo, a former research assistant at K-RITH in Durban, contracted a severe form of multidrug-resistant TB during his medical residency.

Three years, one week, and one day later he was cured. He's one of the lucky survivors.

Activists try to change slave-labour mindset

RINA CHANDRAN

KARJAT: Thousands of brick kiln workers in India's western Maharashtra state are learning from activists that they have the right to a minimum wage, basic amenities and fair treatment. But they remain in debt bondage to owners who deny them these rights with impunity.

The workers are largely landless Adivasi tribals forced to work at the kilns for half the year to pay off their debt. Entire families may work up to 14 hours a day for low or no wages, few amenities, no days off, and with no idea of how much money they still owe, activists said.

"The government, the police think bonded labour is when someone is tied up in chains or locked inside a room. They don't even acknowledge that these workers are bonded," said Ashok Jangale, director of community organisation Disha Kendra in Karjat near Mumbai.

"We tell the workers they have a right to be paid, to not be beaten or abused, to have time off, to send their kids to school," said Jangale.

India is home to almost half the world's 36 million slaves, according to the 2015 Global Slavery Index compiled by the Australia-based Walk Free Foundation.

Many Indians are duped into offering to work in farms, brothels and small businesses as security against a loan they have taken or a debt they have inherited. This is especially common in the construction industry, particularly in the unregulated sectors of brick-making and stone quarrying.

"The kilns themselves are mostly illegal, so keeping track of them is hard and they keep no records," said Chandan Kumar, ActionAid's national co-ordinator for the Bonded Labour Eradication Programme.

There are no official figures on the number of people employed to cut, shape and bake

A labourer throws mud on bricks kept for drying at a kiln in Karjat, India, this month.

clay-fired bricks, mostly by hand, in tens of thousands of brick kilns in India.

Most of the workers are illiterate.

According to data compiled by the Centre for Science and Environment, at least 10 million people work in kilns, many located on the edge of towns and cities.

At a kiln off the main road in Vanjarwadi village in Karjat, about 60km from Mumbai, Ganesh Mukund said he had borrowed about 50 000 rupees (about R11 500) from the owner and did not know how much he still owed. He said he had previously worked in a kiln where a worker was beaten so badly, his arm was broken.

"When we hear about such instances, we investigate the matter and file a case with the police," said Jangale. There may be up to five such cases a year, and there have even been instances of workers being killed, he said.

"Although the police often put pressure on the workers to settle for some money, we tell the workers to persist," he said.

The state government appointed a vigilance committee in 2012 to check bonded labour after the deaths of several workers. A spokesman for the state's labour department said it was still keeping watch for alleged cases of bonded labour.

Earlier this month, 564 brick kiln workers were rescued in southern Tamil Nadu state in one of the largest such operations in the country.

In Fansawadi village in Karjat, Rama Bai takes a break from shaping bricks to show an officer from Disha Kendra a small ruled notebook. It has daily logs since December, when the working season

A labourer carries bricks at a kiln in Karjat, India. PICTURES: REUTERS

began, of the number of bricks her family made every day.

Rama Bai borrowed 60 000 rupees for her daughter's wedding three years ago, and a further 15 000 rupees for festivals, and agreed to work at the kiln to pay it off.

"We have trained her son, who is literate, to keep a log and check the owner's log," said Jangale. "We tell them not to borrow so much money for festivals and weddings: they should know what is trapping them. And that when they have paid off what they owe, they have a right to leave." – Reuters