

Headline	South Africa leads hunt for killer TB vaccine		
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# South Africa leads hunt for killer TB vaccine

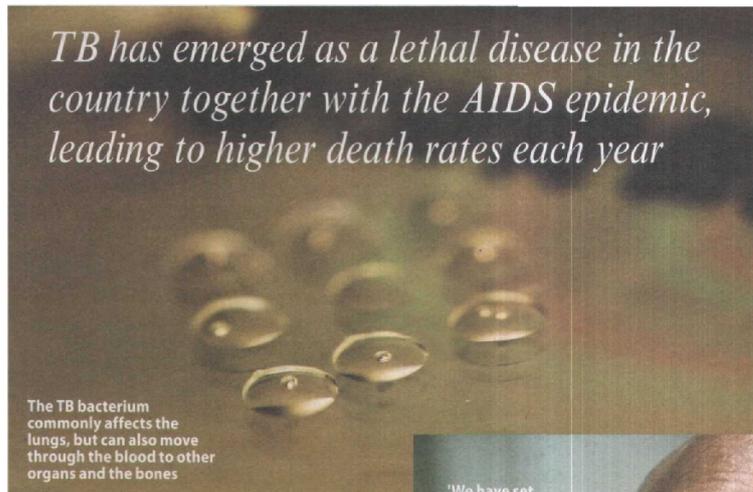
by WENDELL ROELF

**BABY** Hisinawa is permanently semi-comatose after TB spread to his brain, his board-stiff body shivering as a doctor pushes a rubber tube down his nose to clear away thick phlegm choking him. Last December, the chubby two-year-old South African was talking and laughing. Now he has limited use of all four limbs and cannot swallow.

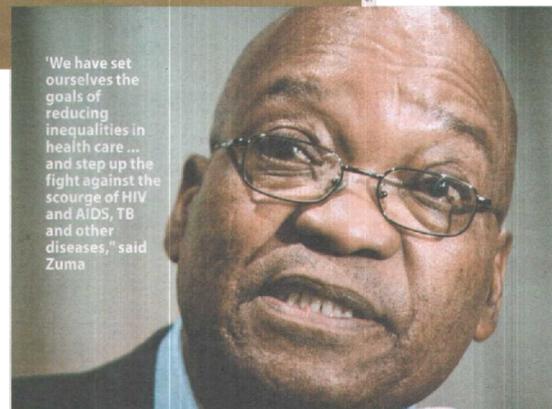
Hisinawa is a severe example of the debilitating symptoms of tuberculosis, which kills more people than any other treatable infectious disease. Trials for a new vaccine start in South Africa in July. Scientists across the world are seeking a new vaccine against the contagious lung disease, which is largely under control in developed countries but still haunts the poor in the developing world. Up to one in three people have it globally.

"The world needs a new TB vaccine because the current one is not really effective in terms of preventing TB and that is manifest in the context of an increasing epidemic," Gregory Hussey, director of the South African TB Vaccine Initiative (SATVI) told Reuters. With more resources and research committed by international and philanthropic organisations like the World Bank and the Bill and Melinda Gates Foundation, optimism for a new TB vaccine has reached heights last seen when the current TB vaccine, Bacille Calmette-Guerin (BCG), was developed in the 1920s.

The most clinically advanced of the nine vaccine candidates — called MVA85A — will be tested in South Africa next month among 2,874 children under the age of one. Researchers hope to register a new anti-TB vaccine by 2015. "All of the clinical trials conducted to date with this vaccine (MVA85A) have shown that it is safe and it



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stimulates high levels of the type of immune response we believe is protective against tuberculosis," the vaccine inventor Dr Helen McShane of the University of Oxford, told Reuters.

The World Bank, which focuses on controlling TB by identifying and curing infectious patients, has said financial support for its treatment would bring an estimated economic gain of around US\$1.6 trillion (RM5.64 trillion) between 2006 and 2015. Without financial intervention, the economic burden of TB in badly hit countries like China could reach up to US\$1.2 trillion between 2006 and 2015, the World Bank said. Global efforts have been ramped up to meet a United Nations Millennium Development Goal of halving the global TB infection rate by 2015.

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### Stalking the Poor

South Africa is a good place to start: a high rate of infection coupled with the world's largest AIDS epidemic, where close to an eighth of the population are HIV positive, makes it particularly vulnerable. The World Health Organisation has said the AIDS virus and TB form a lethal combination, each speeding the other's progress. TB is the leading cause of death in AIDS sufferers. "My friend has TB and I've seen what it does to her," said Esmerentia Cupido, 35, a resident of the town of Worcester, 100km north of Cape Town, where one of the vaccines will be tested under SATVI, which is assessing four TB vaccine candidates in the global pipeline. "She coughs terribly and is getting very thin. She also lost two of her brothers to the disease, but likes to party and drink. She doesn't want to listen," Cupido told Reuters at the Brewelskloof hospital in Worcester.

"Tering" as it is known in the local Afrikaans patois, stalks the poor. A lack of proper nutrition, cramped living conditions and substance abuse aid TB's spread. In South Africa a visit to the local corner shop or popular neighbourhood drinking spot can

be a dangerous gamble, should an infected adult sneeze or cough. The World Health Organisation has said South Africa has the world's highest TB incidence rate at 948 infections for every 100,000 people.

### Inequality

The government said last Wednesday it would step up measures to improve health care in Africa's strongest economy. "We have set ourselves the goals of reducing inequalities in health care ... and step up the fight against the scourge of HIV and AIDS, TB and other diseases," South Africa's president Jacob Zuma said in his first state-of-the-nation address.

TB, which has infected people for thousands of years according to the Global Tuberculosis Institute at the New Jersey Medical School, kills around 1.8 million people globally each year. Children and young adults are most vulnerable. In the 21st century it has swamped developing countries across Africa and Asia, overwhelming fragile health care systems. It is firmly enmeshed in the social fabric of Worcester.

"About four months ago I saw someone in our street die from TB. He got thin and started vomiting blood. When he coughed, chunks of blood came with it", Monique Wilson, 26, said as she cradled six-month-old Mercedes. "That scared me and I decided to take my baby for vaccination."

The TB bacterium commonly affects the lungs, but can also move through the blood to other organs and the bones. When the brain is affected, as with baby Hisinawa, patients die or suffer serious disabilities. The July tests will be the first concept trial of a new preventative TB vaccine for infants in close to 90 years, and will be used as a booster to the BCG shot if found to be successful.

Major drug pharmaceutical companies GlaxoSmithKline, Sanofi-Aventis and Crucell are now also testing TB vaccines, although there is little incentive to develop an unprofitable vaccine. "Most of the market is in developing countries which might not be able to afford an expensive vaccine," said Dr Tony Hawkridge, Head of the Aeras Global TB Vaccine Foundation's Africa office. "It's never going to be a Viagra or one of those multi-billion dollar products which rockets a company into the ranks of the very rich," he said. — Reuters