

## Spotlight

# New tools for TB prevention, diagnosis and treatment urgently needed

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An article from the HDN Key Correspondent Team

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Robert Koch was born on December 11, 1843, at Clausthal in Germany.

"The son of a mining engineer, he astounded his parents at the age of five by telling them that he had, with the aid of the newspapers, taught himself to read, a feat which foreshadowed the intelligence and methodical persistence which were to be so characteristic of him in later life," according to the biography of Koch posted on the Nobel Prize Foundation website.

His ingenuity later led him to discover the bacterium that caused tuberculosis (TB) – which led to one out of every seven deaths in the mid-19th century – in 1882.

Today, TB causes two million deaths worldwide every year and while some of Koch's techniques for tackling the disease are still being used today, research for new diagnostics, drugs and vaccines has not been pursued vigorously enough over the years.

Now the world is confronted with a TB epidemic of incredible magnitude despite the fact that the disease is both curable and preventable.

"TB should be a disease of the past," said Nick Herbert a British parliamentarian during the 38th Union World Conference on Lung Health in Cape Town, South Africa.

"It is appalling and certainly becomes a scandal that 1.6 million people are dying every year with a disease that is curable and preventable," he said addressing delegates before a lecture on challenges in the fight against TB since its discovery by Koch.

In tribute to the Nobel Prize winner, The Robert Koch Lecture was delivered at the conference by Professor Anthony Harries, a Technical Advisor on HIV Care and Support with the Malawian Ministry of Health.

The lecture by Harries was the fourth in a series of talks sponsored by the German Central Committee Against TB. Each lecture had its own theme and this fourth installment was titled 'Robert Koch and the discovery of the tubercle bacillus: the challenge of HIV and tuberculosis 125 years later'. Through the lecture, Harries sought to explain the reasons behind the resurgence of the disease.

"Without HIV, people with latent TB have a 5 to 15% life-time risk of developing active TB. But with HIV, the risk becomes 5 to 15% in a year," Harries told conference delegates.

He also said that while the advent of HIV had caused an increase in TB cases, it had ironically decreased the TB detection rate. Research has shown that the strains of TB commonly found in people living with HIV are usually smear-negative and require sophisticated detection

techniques that are often beyond the means of developing countries. Ironically again, it is developing countries that are most affected by both diseases.

During his presentation, Harries described why HIV, among other things, facilitated the spread of drug-resistant TB and increased the rates of recurrent TB following treatment. He said that HIV was the main cause behind the resurgence of the disease. "HIV derails attainment of TB treatment targets," Harries said.

But that is not the only reason why TB has become the huge problem it is today. Harries also said he thought TB control efforts had been plagued by complacency and a lack of commitment ever since the 1970s. This is generally attributed to the fact that most nations felt that they had won the war against the disease.

Little research has been done into developing new tools, diagnostics, drugs and vaccines to support the fight against TB. The drugs in use now are decades old and take a long time to take full effect – about 6–8 months. The sole vaccine available has been in use for years and cannot be used beyond childhood.

This illustrates the fact that over the years TB has reinvented itself while little was being done to produce effective tools to fight it. Should we still be relying on the techniques of Koch's era when the dynamics of TB have changed considerably in the past century?

According to Nick Herber, "It's not an emergency to develop new tools, new drugs, new diagnostics and new vaccines. In fact it is a scandal that we have not developed such tools all this long."

Harries concurs with this view and says that if the world continues to rely on the current TB control framework of directly observed treatment – short course (DOTS), the target of a 50% reduction in TB cases by 2015 will not be reached.

Since the cost of not developing new tools is so high, can we attribute the lack of progress being made to a lack of Koch-style intelligence, or to a lack of commitment and complacency?

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