

## 招請講演 I

## Tuberculosis: A new vision for the 21st century.

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TB is a global problem, that we can't afford to keep ignoring. In 2006, TB killed 1.7 million people – almost twice as many people as malaria – and it is the leading cause of death among people living with HIV/AIDS. This is all more tragic because these deaths are preventable. For a long time the world thought that we had defeated TB, but just because TB doesn't make headlines doesn't mean it has gone away. The fact is that TB is getting worse, as complacency and lack of adequate tools and funding fuel the disease and the spread of drug resistance.

Drug resistant TB is the wake-up call, it is an airborne epidemic of increasingly untreatable disease. Drug resistant TB develops when TB patients take low-quality drugs, do not finish their full course of treatment, or pass drug resistant TB from one person to another. In 2007, there were approximately 500,000 cases of drug resistant TB globally. MDR-TB is resistant to the two most commonly used first-line TB drugs, and requires long, complex and expensive treatment. XDR-TB is resistant to first- and second-line drugs, severely limiting treatment options.

While progress is being made, much more is needed. Basic TB control is one of the most cost-effective interventions in global health. Appropriate treatment can save a life and stop the spread of disease for US\$14. It is essential that countries implement the WHO's internationally recommended DOTS TB strategy. But due to outdated tools and methods, DOTS alone is not enough. The remarkable fact is that global control of TB, a disease that kills someone every 20 seconds, depends upon a 125-year-old test, an 85-year-old vaccine and drugs that take six months to cure and haven't changed in four decades.

To successfully treat TB and prevent resistance, we need to use current tools better and accelerate the development of new tools for the future. Simple improvements in TB control, such as expanding the use of under-utilized technologies, can have enormous impact. Fixed-dose combinations have existed for over 20 years, and could help ensure that more patients complete treatment; yet globally, only 15 percent of patients are using them. We also need new drugs, vaccines and diagnostics, as well as innovations in TB control and case management. Better diagnostics are already available, and new drugs and vaccines are coming. But more commitment

and resources are needed.

Better prevention and control of TB is the surest way to stop drug resistance. To ensure that drug resistance does not pose a wider threat, we need to employ a number of equally important approaches. These include improved basic TB control, increased use of under-utilized technologies such as fixed-dose combinations, and new technologies and health systems innovations. At the same time, we should expand access to M/XDR-TB treatment and diagnostics for those who already have drug resistant TB.

Some of the most innovative solutions can come from the private sector and through partnerships. An untapped market of two billion people carries the TB bacterium. Since TB requires a comprehensive approach, companies should also explore opportunities to work together and pool complementary technologies to ensure new tools are used most effectively. Japan is poised to play a leading role in the discovery, development and delivery of TB solutions in the 21<sup>st</sup> century.

## 招請講演 II

Fighting the tuberculosis epidemic in the Western Pacific Region: Current situation and challenges ahead.

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### Introduction

Tuberculosis (TB) remains a major public health problem in the Western Pacific Region. More than 20% of the global burden of TB is found in the Region. In 2007, the latest year for which data is available, there were an estimated 1.9 million incident cases (109 per 100 000 population). Four countries (Cambodia, China, the Philippines and Viet Nam) account for 93% of the total estimated incident cases in the Region. Every year an estimated 300 thousand persons die due to TB. The Region is host to an estimated 135 000 multi-drug resistant TB cases, most of which can be found in China.

### TB prevalence and TB mortality

The Regional Stop TB strategy aims to halve the prevalence and mortality rates of 2000 by 2010. Based on current estimates, the TB prevalence declined with 24% between 2000 and 2007, while TB mortality declined with 19% in the same period. Given the current annual decrease in TB prevalence and mortality, it is unlikely that the Region will achieve the 50% reduction by 2010.

### Case finding

Approximately 1.4 million new TB cases were notified in the Region in 2007, of which close to 0.7 million smear-positive cases. Cases from China accounted for 70% of the total notified smear-positive cases. The Regional case detection rate was sustained at 78%. Case detection rates in China, the Lao People's Democratic Republic, Mongolia, the Philippines and Viet Nam exceeded the 70% target.

### Treatment outcomes

A total of 92% of the 0.7 million new pulmonary smear-positive cases registered for treatment in 2006 were successfully treated. The treatment success rates exceed the 85% target in all countries with a high burden of TB, except Papua New Guinea where it was reported at 73%.

### Multidrug-resistant TB

In 2007, the proportion of MDR-TB in new TB cases was estimated to be 4%. A total of 135 411 MDR-TB cases was estimated to have occurred in 2007. Based on the overall case management data, 10 231 new patients and 1596 re-treatment patients were reported with available drug susceptibility testing (DST) results in the Region. Of these, 1% (89/10 231) and 29% (468/1596) had MDR-TB,

respectively. Capacity to detect and treat MDR-TB cases is still very limited in most countries in the Region. Eighteen countries and areas in the Region have conducted drug resistance surveillance (DRS) since 2000, according to the Global Project on Anti-tuberculosis Drug Resistance Surveillance. Among new TB cases, the prevalence of multidrug-resistant TB (MDR-TB) ranged from 0% in Cambodia to 11.1% in the Commonwealth of the Northern Mariana Islands. MDR-TB prevalence among re-treatment cases ranged from 3.1% in Cambodia to 27.5% in Mongolia. In the five countries with a high burden of TB with available data from surveys (Cambodia, China, Mongolia, the Philippines, and Viet Nam), MDR-TB prevalence in new cases and re-treatment cases ranged from 0% in Cambodia to 4.9% in China and from 3.1% in Cambodia to 27.5% in Mongolia, respectively. Notably, there were alarming rates of MDR-TB in several provinces in China among both new and re-treatment cases. Increasing numbers of MDR-TB cases are reported from Papua New Guinea.

### TB-HIV co-infection

The overall estimated prevalence of HIV in new TB cases in 2007 was 2.7%. With 8.0% in 2008 compared to 11.8% in 2003, Cambodia shows a declining prevalence of HIV in new TB cases. There was a significant increase in the use of anti-retroviral therapy (ART) in the Region. However, detailed and complete data as well as strong collaboration in HIV and TB management are needed to be able to closely monitor the use of ART and its impact on TB-HIV co-infection in the Region.

### Conclusion

In spite of the substantial progress made in most countries with a high burden of TB, substantial challenges remain in the Region. The rate of decline in TB prevalence and mortality is too low to reach the 50% reduction goal in 2010. It will be necessary to further increase TB case detection and address the emerging spread of drug-resistant TB. The slow response in the most affected countries in the Region is a cause for concern. Strong commitment by national governments and their partners is needed to sustain and further strengthen the current TB control efforts.