The 84th Annual Meeting Invited Lecture

FIGHTING THE TUBERCULOSIS EPIDEMIC IN THE WESTERN PACIFIC REGION: CURRENT SITUATION AND CHALLENGES AHEAD

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Abstract [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 Vietnam) 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 Vietnam 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 1,596 re-treatment patients were reported with available drug susceptibility testing (DST) results in the Region. Of these, 1% (89/10,231) and 29% (468/1,596) 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 Vietnam), 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

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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.

Transcript from the recording of the Lecture:

— Chairperson (Dr. Masaharu Nishimura) —

My name is Nishimura from the First Department of Medicine, Hokkaido University School of Medicine. It is quite an honor to be here to introduce Dr. Pieter van Maaren, who is currently the WHO officer working as the regional advisor for Stop TB in the WHO Western Pacific Region. Dr. Maaren, please allow me to introduce you further in Japanese for a few minutes.

(Introduction in Japanese)

Dr. van Maaren, now it's your turn; you are allowed to speak for 45 to 50 minutes, followed by a couple of questions. Please go ahead.

— Dr. Pieter J. M. van Maaren —

Thank you very much, Mr. Chairperson, for your introduction. It is really my pleasure to be here with you to present about the tuberculosis situation in the Western Pacific Region, and what has happened in the past eight years in terms of progress in the fight against the disease. It is particularly important for me to be here in Japan because we have had so much support from the government of Japan and from Japanese experts in the past years, that the disease has been fought in the region by WHO and its partners. I would like to share with you a number of slides that highlight the progress that has been made, but also depict the challenges that we are still facing in the region.

First of all, I will take you through a little bit of history on the TB Special Project that was established in the Western Pacific Region. Secondly, I will go through the current situation in the region, showing you some data about TB, about TB-HIV, and about MDR-TB. Then I would like to conclude with the challenges ahead of us.

In 1999, the Western Pacific Regional Committee, which is WHO's governing body in the region, declared a tuberculosis crisis, and it established the Stop TB Special Project. At that time, the Western Pacific Region had about one quarter of the global burden of tuberculosis. It saw close to 1,000 patients die every day from the disease, and 70% of the TB cases were in their most productive years — namely 15 to 54. The region was faced with an emerging TB-HIV and MDR epidemic, and at the time of declaring the crisis only 40% of the estimated cases were notified to the national TB programs, and only 60% of those notified cases were enrolled in DOTS — the WHO-recommended strategy at that time.

So the member states in his region asked WHO to do something about TB, and the regional director at that time, Dr. Shigeru Omi established the TB Special Project, which at that time developed a regional strategic plan to cover the first five years of the project leading up to the global TB targets in 2005. The project has set as its main target a 50% reduction in TB prevalence and mortality by 2010, which at that time was considered very ambitious. In order to do that it was thought that at least by 2005 the region needs to achieve 70% case detection and an 85% cure rate among all those patients notified with TB. We also aimed at 100% coverage of countries, with the DOTS strategy. A technically advisory group was established to advise WHO and the member states on how best to fight the disease in the years to come. Some of these technical advisory group members were actually experts from Japan and also other countries in the region. The TB Special Project supported countries in developing national 5-year plans, and also identified the financing gap and assisted the countries in mobilizing resources to cover this financing gap. One of the important features of the strategy was to develop the human resource capacity in the region, to address the TB problem. Needless to say, as countries were unable to address the disease on their own, entirely, the development of partnerships and external support was very critical both at regional and national levels.

So what did this special TB project achieve in the region? Well, as you can see from this slide, in the first year the number of countries that actually implemented the DOTS strategy was very limited. In the year 2000, only 18 of the 36 countries in our region had established the DOTS strategy in some parts of their country. But you can see that within a couple of years the number of countries increased from 18 to 36 — a doubling of countries that implement the Stop TB strategy. And by 2005, the entire region was implementing the WHO-recommended DOTS strategy.

What about the targets that were set for 2005? As you can see here on this slide, especially the case detection targets and the DOTS coverage rapidly increased over the years. You see here the DOTS coverage, and this one — the lighter blue bars — depicts the case detection. One thing that the Western Pacific Region has always been doing very well is to successfully treat patients that are enrolled in the national TB programs' DOTS strategy. As you can see, the cure rates or the treatment success rates have been maintained at 85 to 90%, or even higher in some countries, for a long, long time. I think that is very important for this region's future TB control.

Having achieved the targets in 2005, it was obvious that the region needed to move forward in order to do something about reducing the prevalence and mortality due to TB in the region, by half. That was set as a target in the year 2000 by the WHO's special project, but it was clear that in many countries

the progress was not fast enough to reach the target by 2010. As I will show in a couple of slides further on, efforts really needed to be stepped up. In order to step up the activities for the disease in the region, the next 5-year strategic plan for the region had three main objectives: first of all to sustain what had been achieved, and optimize the quality of DOTS' implementation and go beyond the 70 and 85% targets. It is very clear that the region needs to ensure here will be equitable access to TB care — and particularly quality TB care — for all people that are suffering from TB. Where necessary, countries needed to adopt the DOTS strategy to better respond to MDR-TB and TB-HIV. This is what we were ultimately aiming for — a reduction of the TB prevalence of 50% from 2000 to 2010. You see here on the red bar, the ideal situation — what we had hoped to achieve. You can see in the blue line what would happen if we just stuck to the 70% case detection. The members of the technical advisory group and other experts that have been assisting WHO and countries made it very clear that unless the region detects and treats more cases than the 70% that was set as a target for 2005, this region would not reach its target of 50% reduction in the year 2010. The same story is true for the mortality. With an ideal program implementation, we would be able to achieve the 50% reduction of the mortality due to TB by 2010, but if we stick to the targets that we set before, like 70% cases detection and just 85% cure rates, we would not get to the 50% reduction in 2010. As I mentioned in the three objectives of the strategy beyond 2005, it is ensured that all TB patients are detected and put on treatment. In order to do that you need to engage all health providers, not just those working in the public sector but also those working in the private and hospital sector that is beyond the control or borders of the national TB program. For that, WHO and its partners have established a number of strategies: for example, the public-private mix approaches, which are highlighted here with this publication, and also the International Standards of TB Care. Particularly this International Standards of TB Care was a very important publication by the international community for TB control, because it had the support not just from WHO but also from its main technical partners such as the Center for Disease Control in Atlanta, the KNCV TB Association in The Netherlands, the Research Institute of Tuberculosis and other major technical partners, but also professional bodies such as the American Thoracic Society fully supported the International Standards of TB Care. What this document does is basically set the standards — what you have to do if you want to effectively diagnose and treat a TB case. And if you don't adhere to the standards that are described here, it could be considered medical negligence. So this is a very important document that can be used in advocating sound TB control — particularly among those that are not under the control of the national TB programs.

WHO also set out with its partners to develop guidelines for the programmatic management of drug-resistant TB, which was increasingly recognized as a real threat to the progress that had been made in TB control. These guidelines draw on the best evidence accumulated in projects that were approved by the Green Light Committee. The Green Light Committee is a group of experts that reviews applications to treat MDR-TB cases in a country, and decides whether the project is considered to be technically sound. If it considers it to be technically sound, it will recommend the country to utilize quality-assured drugs at a concessional price, provided by manufacturers of second-line TB drugs. The guidelines of programmatic management of MDR-TB are not much different from what we want to achieve through the DOTS strategy, and in essence, these guidelines are very much based on the DOTS framework. Also, in the area of smear-negative TB and TB in children, major progress has been made in the publication of guidelines for countries to utilize. On the left side, you see here the publication from WHO about the diagnosis and treatment of smear-negative pulmonary and extrapulmonary TB among both adults and adolescents, and the recommendations. On the right side is a framework that was developed in the Western Pacific Region to specifically deal with patients co-infected with TB and HIV.

Now I would like to review the current situation in the Western Pacific Region, with regard to TB. First of all, here you see a map of the region depicting the TB notification rates in different colors. The highest TB notification rates can be found in the countries with a red color, and you see here that Papua New Guinea and Cambodia are the countries where you see the highest TB notification rates per 100,000 population. But there are other countries — not necessarily very clearly visible — in the Pacific islands. We see a number of Pacific island countries with very high TB notification rates, which in absolute numbers may not be a major problem, but for the countries themselves the huge numbers of TB cases are a real problem. You see also that the largest country in our region, China is colored with green, stating notification rates of 50 to 99 per 100,000 population. Although the notification rates in China may not be very high, the sheer size of the country and the numbers of cases, therefore, are very important for the Western Pacific Region. Other countries in the region — shown in blue — Philippines, Vietnam and Mongolia, are also countries where TB is still considered a major, major problem.

In this slide, you see what has happened from 2000 to 2007 in terms of notification of TB in the countries in our region. Overall, it is very clear that there has been a very steep increase in the years 2002 and 2005, leading up to the achievement of the global TB targets in 2005. Unfortunately, we see that there is actually a plateauing in the notification of smear-positive cases, and there is only a very slight increase in the number of all TB cases notified with TB in the past two years. I would like to show you the notifications in the different high-burden countries in our region, divided by all types of TB and new smear-positive cases. You see that in some countries the increase over the past years has really plateaued, whereas in other countries, like in Vietnam, there has actually

been a slight decline in the notifications. You saw in the previous slide, which showed the regional pattern, the regional pattern is very much similar in China. Obviously, China, with its huge number of cases, is very important for the region. You see that from 2002 to 2005 there was a huge increase in both the number of all TB cases as well as the smear-positive cases of TB. In the Philippines the increase has been less prominent, and in Cambodia the increase has also been less prominent.

In this slide you see the age distribution of TB cases, and I've listed here the notification among the age group: the most economically productive age group and then the age group beyond 55 — the elderly — just to show you the kind of patterns that you can find in the different countries, clearly characterizing the differences between the TB epidemics in the different countries. Here you see between women and men in Cambodia that there is a clear decrease in the average age among women with TB in the younger age group, whereas in the elderly age group, both among women and men the age of TB cases is actually going up. The decrease in the average age group in Cambodia is partly due to the HIV epidemic. We see a slightly similar characteristic in China, with a slight decrease in the average age among the younger population. But this is clearly less associated with TB-HIV and probably more associated to the increase in the TB cases among migrant populations, which are very important in China. Again, among the elderly, the age is clearly going up, showing that the TB epidemic is gradually ageing in this country. In Vietnam you see a slightly different pattern, and particularly among the younger age group the age is really going down when it comes to developing TB. Part of this is among the men — it's likely to be associated with the migration to the urban areas that is caused by the economic development. There are more and more job opportunities in urban settings, and less of an opportunity in the rural settings, and the young male population are moving to the cities where they usually live in crowded situations and not necessarily in the best hygienic circumstances. These are ideal breeding grounds for tuberculosis, which in Vietnam is still a very big problem. But among the women, the increase is even steeper. That is partly explained by the increase, particularly in the urban areas, of HIV prevalence. Among the elderly there is still an increase among the female population's average age for TB, but in the male population it has been more or less steady and not increasing so much. Again, as we have done some epidemiological analysis, this is partly due to the migration of the male population from the rural to the urban areas.

Now the case detection rates; I alerted you earlier that we see a plateau in the TB notifications, which obviously is reflected in the case detection rates. You see here, in most of the countries the case detection rates are actually at or above the target of 70%. Only one country, Papua New Guinea is really lagging behind in its case detection rate. That is partly because the DOTS strategy is only slowly scaled up and expanded in Papua New Guinea. All the other countries have reached their case detection target, but I think on average there is a real plateauing after the year 2005/06 — not much further increase.

The DOTS treatment success — and this is a very positive story from this particular region — has always been very high: above the 85% target that was set by the WHO. Most countries have achieved this already from very early years. Even in Papua New Guinea we see a gradual increase, getting closer to the target of 85%. This is very important because it will help in preventing the development of drug resistance. In this graph you see it depicted in a slightly different manner, and you see that the majority of the success rates in the different countries is from patients that were actually declared cured, which means all those patients who had their sputum checked at the end of treatment and were found to be smear negative. The important groups for not reaching the targets — that means the treatment failures or the cases that are dying during the course of the disease — are relatively small in all countries, except for Mongolia where we see a fairly substantial treatment failure rate, which is partly caused by the fact that TB control more or less collapsed after the collapse of the communist regime in Mongolia, and the state health programs were found to be in disarray. That has really contributed to the development of treatment failures as a result of poor treatment implementation. But in most of the other countries the problems of treatment failures or deaths are not very prominent.

Now I would like to move to MDR-TB. As most of you will know, in April this year, WHO together with the Bill and Melinda Gates Foundation and the government of China organized a major conference in Beijing, with 27 countries with the highest burden of drug-resistant TB represented. This conference aimed at developing some commitment in trying to fight the increasing numbers of drug-resistant TB across the world. And just to show you what we mean by increasing drug-resistance in the world — what this means for the Western Pacific Region — in this slide you can see that the Western Pacific Region accounts for almost one quarter of the global burden of MDR-TB. This number was revised a little bit downwards last year due to new estimates that were developed by the WHO.

So what does that mean for our region? Where can we find the majority of drug-resistant cases? Here you have a list of countries from where we have prevalence estimates of the drug-resistant levels. You see here there is a graph on drug resistance among re-treatment cases, and the drug resistance among new cases. Cambodia has really negligible levels of drug-resistant TB, but if we look at a country like China the drug resistance among new cases is between 4 and 5% and alarmingly, the resistance among re-treatment cases can be as high as 20 to 25% in some provinces of China. You see that there is a whole range of values between the different countries. We also have the rates for Japan, where you see fairly

low drug-resistant levels in Japan among new cases, but around 10 to 12% of drug-resistant rates among re-treatment cases.

This slide shows you the same data in a different form, with the confidence intervals. In some countries the confidence intervals are very high because of uncertainties associated with the estimates. But you see again the rates among China, Philippines and the high-burden countries are the highest in the region, whereas in the countries with an intermediate burden of tuberculosis resistant levels are much lower than in the high-burden countries. I'm sure that most of you will understand the mechanisms of the development of drug resistance. If you implement sound TB control there should be little reason to worry about the development of drug resistance. As drug resistance is man-made, poor TB programs are really contributing to the development of drug resistance. We see in those countries with a high burden of TB and higher levels of drug resistance, that MDR-TB really is associated with poor TB control in the past. We hope that with the increased effectiveness of TB control in the region over the past couple of years, we have seen the peaking of the drug resistance levels in most of the countries, and we hope to look at a more favorable decline of drug resistance levels in years to come.

Here we see, in absolute numbers, the estimates for drug-resistant TB in three of the high-burden countries in our region. You can see that the largest burden of drug-resistant TB estimates are in China, but also the Philippines and Vietnam are showing quite considerable numbers of drug-resistant case estimates. This is where we have a problem. The number of cases that in the next few years will be treated according to the treatment guidelines provided by WHO and its partners, is still very, very small. The majority of drug-resistant cases in these three countries are either not treated properly or are treated in the private sector without any control or follow-up through the national TB program. So in that sense, there may be quite a number of these 112,000 MDR-TB cases in China that may be treated — some of them successfully — but most of them are treated outside the national TB program, which means that there is no guarantee for the sound and effective treatment regimens under which these patients have been put. The same is more or less true for the Philippines and in Vietnam. Now, these numbers here are very low and we hope in the next couple of years we see a very rapid scale-up of the number of cases to be treated in the national programs. But unfortunately, because of neglect over the years, it has not been very easy to increase these numbers very rapidly.

Of course, the most important scare for most of the countries in the world is the development of XDR-TB or Extensively Drug-resistant TB. As of April this year, these are the numbers of countries where at least one — but in most countries, more than one — case of XDR-TB has already been officially notified to WHO. China is colored here in yellow because at that time they were not in the official countries that were included as having reported. As I already referred to the conference on XDR- and MDR-TB in April in China, China officially notified its first XDR-TB case at the conference. So also China is now included as one of the countries that have reported Extensively Drug-resistant TB. This is a major concern because management of Extensively Drug-resistant TB for most developing countries is beyond their possibilities. It is very expensive; it is very labor intensive; due to the type of drugs that need to be used, it has many, many side effects, so many patients are actually unable to complete the treatment with second-line drugs because of these side effects. The scenario that XDR brings to the countries is something that they don't want to look at, because of the extreme difficulties associated with managing XDR-TB cases. For WHO and its partners, all the more reason to focus very, very much on the prevention of MDR-TB and also the sound treatment and diagnosis of MDR-TB cases.

Now moving to HIV prevalence in the new TB cases. Another feature of the TB patterns that we have seen globally — we see this also in our region — there are a number of counties where the HIV prevalence among TB cases has really gone up over the years. These are data from 2007: for some countries we have estimates; for some countries it is surveillance data. You see with the arrows, the high TB-burden countries in our region. So you see among the high TB-burden countries in our region, the Republic of Laos, Cambodia, Vietnam and Papua New Guinea are among the countries with the highest burden of TB-HIV. Other countries in the region we include among the intermediate-burden countries that show high prevalence are Malaysia and Singapore. Malaysia and Singapore are slight exceptions in the countries with HIV burdens because most of their HIV is actually related to intravenous drug use, and the HIV-positive rates are mostly found among injecting drug users. But in Cambodia, increasingly in China, and also so in Vietnam, we see a change of the pattern of transmission of HIV, moving from injecting drug users to sexual transmission, which means that now increasingly we see more HIV and HIV-TB among women in these countries.

Here are some countries that have reported TB-HIV in their reports to WHO, and these are data from 2007. You see that these are the numbers of cases reported with TB that are tested for HIV. This table is very illustrative of the problems we are facing right now in adequately diagnosing those cases co-infected with HIV. You see among the TB cases that the country has, only these numbers of patients have been tested for HIV. If you look in China, which has hundreds of thousands of cases, only 34,000 of the TB cases have been tested for HIV. You see on average, where countries are testing, very low numbers of HIV-positivity rates are reported. This is partly causing a problem in expanding the testing of HIV in the countries, because the motivation to test for a disease that they are unlikely to find or they will find on a very rare occasion is not very high. But you see that the percentages of HIV-positivity among TB cases is relatively low in almost all the countries, except for Laos and Cambodia, but there the

testing of TB cases is showing relatively low numbers, with high numbers of HIV testing going on.

Among these HIV-positive persons, it is important that to determine if they are co-infected TB patients in order to prevent opportunist infections from happening, for example, they need to be provided with cotrimoxazole preventative therapy. Relatively few numbers of those are found to be HIV-TB positive are actually put on CPT treatment. Now, the numbers of TB-HIV coinfected persons put on antiretrovirals is even lower. This is particularly important for us, because what I would like to show here, one of the features of TB-HIV is that without antiretroviral treatment, mortality rates — particularly in our region — are very, very high. You see here in Thailand that belongs to the Southeast Asian WHO region, but it is very closely linked to countries like Cambodia and Vietnam, that the rates of mortality for those patients who do not receive antiretrovirals are 50% or more. In Cambodia in one study it was reported at 27%; in Vietnam in one study it was reported to be 30%, and another study in Vietnam showed 26%. Mortality rates are high, and this is our main reason to really push for the increase of the screening and testing of TB patients for HIV, because if you don't put them on antiretroviral treatment, mortality rates are going to be much, much higher.

Now I would like to take you through some of the challenges that we still face in our region, and most of these challenges are very predictable from the information that I've provided you before about the situation of TB in the region. First of all, the decline in TB prevalence: as I mentioned, it is too slow to get us to the anticipated target of 50% reduction. You see that where we are now, most countries in our region are far from reducing the TB prevalence by half, and a really rapid decline would be needed in these next few years to get us to the target in 2010. The challenge in case detection is still quite considerable. As I mentioned, this region needs to detect more than 70% of TB cases. While this region has gone ahead and is already close to 80% of the estimated TB cases detected in the TB programs, we consider this insufficient to get us to the targets. The main challenge here is to further increase case detection and reporting under DOTS, while maintaining high cure rates. For that we need to focus on a couple of areas: first of all, increasing the public-private collaboration to ensure that also those providers who are managing TB outside the public sector are involved in dealing with TB in a scientifically sound and proper manner. We have to involve general hospitals that have TB diagnostic facilities, but also we need to increase the awareness of TB among the general health service staff that is working in all the health facilities outside TB clinics, for example. Part of these activities is very much related to health system strengthening. If TB gets integrated into a general health service, this is what we have to focus on; we have to ensure that a general health service is strong enough to detect TB cases adequately.

What about the challenges for drug-resistant TB? As I showed you earlier, only 1% of MDR-TB cases estimated in 2007 are properly treated under the GLC — the Green Light Committee — conditions. Clearly the progress in this area is too slow. So the challenge is for us to rapidly increase the number of MDR-TB cases that are diagnosed and treated properly. For that we need to scale up the use of new MDR-TB diagnostic tools. WHO last year approved the use of the so-called line probe assay, which allows countries to do a very rapid diagnosis of drug-resistant cases. But obviously we need to expand our diagnostic capacity in the country, much further, so that more countries and within these countries, more facilities will be able to do TB culture and drug susceptibility testing, particularly the more rapid forms of culture and drug susceptibility testing, which are available through the liquid cultures. Finally, we need to increase the availability of quality-assured second-line TB drugs. Treating patients with second-line TB drugs is not automatic: you have to make sure that those drugs that are being prescribed to the patients are quality assured in order to get the best outcome of your treatment regimens. There are also some challenges in TB-HIV. We see insufficient numbers of people living with HIV AIDS screened for TB. We need to get more patients among those who are HIV positive screened for TB so that the diagnosis is made early on and treatment can be started earlier. This is going to save lives. The percentage of TB patients tested for HIV in the Western Pacific Region was only 7% in 2007. Clearly this is an area where major progress has to be made. The challenge for this region and most countries is to rapidly increase the number of people living with HIV AIDS that will be screened for TB on a regular basis, and thereby offered INH-preventive therapy as a means to protect them from development of tuberculosis. But also we need to rapidly increase the number of TB patients that are screened for HIV. With the current availability of rapid tests for HIV, and the increasingly reduced prices for these tests, it should be possible to get more and more TB patients screened for HIV. Therefore, we strongly focus on the provision of HIV testing in TB clinics. We don't need to refer patients to HIV counseling settings; we can do this HIV testing in TB clinics with a basic form of counseling available, and patients allowing for opting out on the testing, if necessary. But we also have to ensure that cotrimoxazole preventative therapy as well as antiretroviral therapy is available for those patients that are identified as being co-infected with TB and HIV.

This slide shows why it is so important. I already mentioned that mortality rates are very high if antiretroviral treatment is not provided to patients who are co-infected. In this slide, which is a study from Thailand, you can see the mortality rate over a period of five years, among TB patients who are co-infected with HIV and who do not receive antiretroviral treatment. You see that by year five, close to 95% of those patients will have died, eventually. But what a difference it makes if you provide these patients with antiretroviral treatment from the start. After five years of treatment, more than 90% of those patients are still alive. What better argument do we have to

convince programs to initiate antiretroviral treatment on those patients who are co-infected? In order to do that, we need to know whether a person is HIV-infected or not, and the testing therefore has to increase.

Finally, there are also challenges in TB financing. There is still a significant funding gap, particularly for those countries that are scaling up drug-resistant TB management. This is related to infrastructure development: for example, building up the capacity for diagnosis in the laboratories for MDR-TB. But also to establish a more adaptable workforce: human resources for TB need to increase. The Global Fund—one of the major financing mechanisms that have been established in the past year, does bring relief, but future funding of the Global Fund is very much an uncertainty. Unless countries step up their own financial resources, the outlook for TB control in countries, particularly with MDR-TB, may be very bleak. Now we also know that the financial crisis that has hit the world in the past two years is likely to disproportionally effect the poor and vulnerable populations, and unfortunately that is also where we find most of our TB patients. So there is a real risk that the financial crisis will result in an increase in the number of TB cases. So our challenge, therefore, is to rapidly increase both domestic and external funding for TB control. We cannot leave this to short-term interventions. Managing TB over the years is a long-term affair, and short-term solutions like one-year or two-year funding is not going to help countries. They need long-term support—both from domestic and external resources. So advocacy to raise these resources needs to be stepped up, and the resource mobilization activities of WHO and its partners needs to increase.

On this slide I will show you what the Global Fund has done for TB control in the Western Pacific Region. There are already 25 TB grants, which are usually multimillion-dollar TB grants, provided within our region. The total number of grants that you have seen for TB is 25, with a total amount of close to 750 million US dollars provided for just TB control ever since the establishment of the Global Fund in 2001. All countries with a high burden of tuberculosis in our region do receive Global Fund support.

This is my final slide. In summary, I think we can conclude that there has been major progress in the Western Pacific Region, but unfortunately the progress is really insufficient to get us to a 50% reduction of the prevalence and mortality in 2010. Therefore, efforts need to be made to further increase the case detection and effectively address MDR-TB and TB-HIV. Part of these efforts that we are making is related to health system strengthening: increasing the laboratory capacity, increasing the human resource capacity, and also monitoring and surveillance capacity needs to be stepped up. We need to know how effective our interventions are, and therefore measurement is very important. Of course, it is important to address the financing gap that we have, and therefore countries and partners should strengthen their commitment to TB control for a long, long time. Supporting the implementation of national TB programs over a long number of years is very critical to make further progress. This is all that I would like to share with you today on TB control in the Western Pacific Region. Thank you very much.

—Chairperson (Dr. Masaharu Nishimura)—

Thank you very much for your great talk, which was very clear, easy to understand and nicely summarized on the current state and problems ahead in the Western Pacific Region. I was quite impressed by what's happening here in Japan and also what's happening outside Japan. I'm so impressed. We still have five minutes left for questions and comments. Do you have any comments or questions?

— Dr. Tachibana—

Thank you very much for your beautiful lecture. I'm Dr. Tachibana of the National Institute of Public Health. I have one thing that I'd like you to inform me about again. I'd like to know why the expected treatment rates of MDR are so low. I didn't catch the reason; please inform me again.

— Dr. Pieter J. M. van Maaren—

Thank you for your question. Drug-resistant TB is a complicated form of management of tuberculosis. As you all know, the treatment regimen is much longer, the drugs to be used in drug-resistant TB have a lot of side effects and therefore treatment of drug-resistant TB patients needs to be monitored very closely. In order for many programs to be able to manage and treat drug-resistant cases, they need to have the capacity to diagnose these cases and also to treat these cases. Many countries— Lao PDR, for example, do not yet have a national laboratory that has the capacity to do drug susceptibility testing. First of all the laboratory is not ready for it, but also the skills to do the drug susceptibility testing are not available. This situation was very similar in many countries in our region, and you have to understand that partly WHO is to be blamed as well because we have always been focusing very heavily on the management of TB cases that are diagnosed with smear microscopy. Now, with smear microscopy you cannot diagnose MDR-TB; you can only diagnose TB. For MDR-TB to be diagnosed, you need advanced laboratory techniques available, you need to have facilities where diagnoses can be made, and you need to have programs in place that can properly treat those MDR-TB patients with the second-line drugs. As for many TB programs, the costs of MDR-TB treatment, particularly from five or six years ago, were very expensive and many countries could not afford to include the management of drug-resistant TB in their national programs. So that's why there has been a lot of delay in setting up programs to manage drug-resistant TB.

— Dr. Seiya Kato—

I'm Dr. Kato from the Research Institute of Tuberculosis. I want to ask about the situation in China: we have about 3 to

4% of TB cases among immigrants, and the people from China are number one in the cases of TB in foreign people. My first question is about the health system in China: I heard that in China the incidence of TB in rural areas is higher than urban areas. This is quite surprising for us. And also, MDR cases are higher in rural areas compared to urban areas. Do you have any ideas why this is happening in China?

—Dr. Pieter J. M. van Maaren—

I think partly this is due to the fact that the majority of the rural population falls into the vulnerable group of poor and mostly disadvantaged population. You will find most of the minority populations in the rural areas, and that's also where we have most of the TB cases. But there is another explanation to this as well : most of the migrant laborers that are going to the urban areas and are diagnosed with TB, in the old system of health services in China are still registered as cases from the rural areas, because that's where their registration is from. So many of the urban TB cases that are being diagnosed are actually reported as rural cases. Now, with the health sector reforms in China announced in March/April this year, this is likely to change. We see, for example in big cities and big municipalities like Shanghai and Beijing, already more than half of the cases that they report are among the migrant populations, and they are reported as TB cases from these municipalities.

—Chairperson (Dr. Masaharu Nishimura)—

Although you may have more questions, it's almost time to close this session. On behalf of the members of the society and also the participants here, I'd like to thank you again for coming here and giving us a very nice talk. Thank you very much.