USAID TB CARE II Project

Synthesis Report: Inclusion of TB in National Insurance Programs

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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>BPL</td>
<td>Below the poverty line</td>
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<tr>
<td>CGHS</td>
<td>Central Government Health Services</td>
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<td>CSMB</td>
<td>Civil Servants Medical Benefit</td>
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<td>DOTS</td>
<td>Directly Observed Therapy, short course</td>
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<td>DST</td>
<td>Drug Susceptibility Testing</td>
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<td>ESI</td>
<td>Employees State Insurance</td>
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<td>GFATM</td>
<td>Global Fund against AIDS, TB, and Malaria</td>
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<td>GoI</td>
<td>Government of India</td>
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<td>MDR TB</td>
<td>Multi-drug resistant TB</td>
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<td>NHI</td>
<td>National Health Insurance</td>
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<td>National Health Services Organization</td>
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<td>NTP</td>
<td>National TB Program</td>
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<td>National TB Prevalence Survey</td>
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<td>PhilCAT</td>
<td>Philippines Coalition Against TB</td>
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<td>PPM</td>
<td>Public-Private Mix</td>
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<td>PPMC</td>
<td>Public-Private Mix DOTS</td>
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<td>RNTCP</td>
<td>Revised National TB Control Programme</td>
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<td>RSBY</td>
<td>Rashtriya Swasthya Bima Yojana</td>
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<td>SS</td>
<td>Social Security</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<td>UC</td>
<td>Universal Coverage</td>
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<td>WHO</td>
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1 Executive Summary

Increasingly lower-middle income countries have moved towards adoption of National Health Insurance (NHI) models as a means to support sustainable financing for Universal Health Care. National Health Insurance in the form of government led, publically supported and/or centrally managed insurance programs in various forms have been introduced in countries such as Brazil, Cambodia, China, Rwanda, Mexico, South Africa and Thailand and have demonstrated important successes. The impact of these insurance programs on use of tuberculosis (TB) services and outcomes is unclear. The USAID TB CARE II Project led by University Research Co., LLC (URC) in 2011-2012 undertook an examination of how TB is included (or neglected) in the service delivery package in NHI programs and how effectively NHI programs interact with National TB Programs (NTP) and other TB control stakeholders to plan, implement and measure TB service use. This report represents an initial attempt to analyze the extent to which several NHI programs currently in place or in development in high burden TB countries have integrated TB services. This report synthesizes the findings of assessments in four countries - Thailand, Peru, Philippines, and India - which have adopted publically supported health insurance programs.

The four case studies demonstrate that integration of TB services with national health insurance can have a positive effect on access to services and their quality. On the other hand, each of the models assessed impose different types of restrictions which can limit utilization of services. Some restrictions are planned, and are part of the design of the insurance model. Others, however, are indirect or unintended consequences of implementation. As relates to TB, the findings of the assessment have highlighted the need to carefully examine the impact of restrictions in terms of access and use of TB services. In Thailand, the case study found that long wait times at facilities discouraged patients from obtaining services through national health insurance. In the Philippines, the case study found that many patients perceive that they will have to pay direct and indirect costs for TB services in the public sector and prefer instead to seek treatment in the private sector, including pharmacies, to reduce costs. The primary goal of publicly-supported health insurance programs is to improve access to care for a vulnerable segment of the population and, especially as relates to TB, have the potential to play an important role in improving public health. However, specific objectives for health insurance programs are not typically defined in terms of disease objectives. In countries with significant burdens of key diseases like TB which threaten to jeopardize overall population health (as well as long term growth and development), specific considerations should be made to ensure that the NHI program is designed to be a driving force for controlling the epidemic. The decision to develop and adopt a publically-supported insurance model should ideally form part of broader health systems reform efforts, and the design of the insurance model should therefore include features geared at reinforcing and advancing the country’s health systems strengthening objectives. An issue which has been faced at different degrees in each country is the separation between the functions of the NTP and the insurance planning and implementation agency. The addition of an insurance program, and possibly other agencies with financing or regulatory functions, adds another level of complexity in terms of planning, organizing, and delivering health services. A key overarching conclusion from the assessment is that strong coordination is needed between health policymakers and program managers to carefully design models for integration of TB services under national health insurance. Careful planning is needed to ensure that all
parties understand their roles and responsibilities within the systems and that health providers are motivated to provide high-quality TB services and patients have incentives to utilize the services.
2 Introduction

Universal Health Coverage, defined by the World Health Organization as “access to key promotive, preventive, curative and rehabilitative health interventions for all at an affordable cost, thereby achieving equity in access”\(^1\) has increasingly been adopted as a health systems goal in low and middle income countries (LMIC). This definition of Universal Health Coverage (UHC) is designed to capture the principals of equity of access to health services, provision of quality care, and financial risk pooling, and in recent years many developing countries have moved to incorporate UHC as a component of health system reform. Efforts to reduce the financial burden associated with poor health and reduce the reliance on direct payments from patients for health services and commodities (which have the potential to inflict severe economic hardship and may deter patients from seeking care) have led countries to explore the development of prepayment and risk pooling mechanisms. Several mechanisms exist for countries to encourage risk pooling and reduce direct health payments, including targeted taxes and levies,\(^2\) and increasingly LMICs have moved towards adoption of National Health Insurance (NHI) models as a means to support sustainable financing for UHC. A recent landscape analysis conducted by UNICEF found that almost all LMIC in Asia and Africa have adopted formal UHC policies and that health insurance programs form a critical part of the social protection measures developed to attain UHC objectives.\(^3\) National Health Insurance in the form of government led, publically supported and/or centrally managed insurance programs come in various forms in different countries and are often combined with other forms of social protection programming. Health financing strategies designed to ensure coverage for all, with an emphasis on the very poor or marginalized, have been introduced in countries such as Brazil, Cambodia, China, Rwanda, Mexico, South Africa and Thailand and have demonstrated important successes.

The impact of these insurance programs on use of tuberculosis (TB) services and outcomes is unclear. The different NHI programs currently in place or in development in high burden TB countries include a varying degree of integration of TB services. There is a need to explore how the use of these mechanisms can increase universal coverage for TB patients in both low- and high-burden countries. As TB is a critical public health threat in many countries, inclusion of services for TB diagnosis, treatment, and follow-up care within NHI programs has the potential to play an important role in extending care to TB patients not currently reached. There is also a need to ensure that health care providers operating under UHC/NHI models also have funding available to provide TB awareness among community and TB education to patients in high-burden TB countries. At the same time, as TB is a highly infectious airborne disease and TB control should be considered a public good, it is important to examine what gaps exist in the design of insurance programs as relates to the attainment of TB control objectives (for example in regards to active case finding or community based care).

At present, there is little information or consensus on how best to integrate TB into national health insurance programs. A stronger understanding of how TB services are delivered under NHI

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programs is critical for ensuring coordinated planning and expansion of critical TB services, particularly multi-drug resistance TB (MDR TB) services. The USAID TB CARE II Project led by University Research Co., LLC (URC) in 2011-2012 undertook an examination of how TB is included (or neglected) in the service delivery package in NHI programs and how effectively NHI programs interact with National TB Programs (NTP) and other TB control stakeholders to plan, implement and measure TB service use. The objective of the assessment is to provide recommendations to TB program managers and insurance providers to increase the capacity of insurance programs to contribute to key TB objectives for case detection and treatment. The project conducted a review of the relationship between TB service use and national health insurance programs in four high-burden countries – Thailand, India, Peru, and the Philippines. This report provides a synthesis of the findings of the country assessments as well as implications and lessons learned for countries planning to implement or revise their NHI programs. In addition, a framework is provided to analyze the cost implications related to the integration of TB services with national health insurance.

3 Background and Context

In 2011, the TB CARE II project team conducted a desk review of existing information on UHC programs in high burden TB countries and outline what is known regarding the effect of NHI models to TB service use and outcomes. In TB high-burden and developing countries, there is very little information on how explicit inclusion of TB services within an NHI program impacts early case detection, TB treatment success, control or universal access to basic DOTS. Increasing access and coverage TB services was not often an explicit focus of the NHI schemes from the literature reviewed. The general trend from the literature indicates that coverage of TB under national insurance leads to a positive impact and increased patient access to TB services (although data is more widely available for developed rather than TB high-burden countries). However, a few studies have pointed to the possibility of insurance procedural delays leading to delays in diagnosis or treatment of TB. The limited information on the impact of including TB treatment modalities under NHI can be explained by a number of reasons. Firstly, in most high-burden countries, basic TB treatment (i.e., first line drugs for drug sensitive tuberculosis and drugs for retreatment cases) have been traditionally provided free of charge under National TB Programs and may continue to be provided alongside NHI programs. Secondly, as NHI programs are frequently administered by agencies which are overseen by the Ministry of Finance or other regulating agencies, there may not be a history of analyzing disease-specific outcomes of members, depending on the degree of coordination or joint planning which occurs with the Ministry of Health. Thirdly, the development of NHI programs in some countries may occur alongside shifts to decentralize the NTP, which can result in gaps in capacity to conduct strategic planning, data collection and program evaluation.

Although many LMIC countries have adopted the principals of UHC, most still have a long way to go to ensure that UHC is achieved based on the definition outlined above (equitable access to key health services for all at an affordable cost). Figure 1 below draws from a 2010 WHO Health Systems Financing report and details the hypothetical, but plausible, status of a country which has adopted a UHC framework but falls short of providing routine, accessible, and high quality health care to all who need
depending on the country, the approach to prepayment or risk-pooling to provide funding for health service delivery may include taxes (wage, income, or other), levies, or insurance premiums. in the country described in the figure, the available funding pool covers only a portion of the population for only a portion of services, requiring a higher degree of “cost sharing” from the patient in the form of direct or out-of-pocket payments for health services or commodities. an increase in direct costs can be expected to effect a patient’s willingness to access health services, as it may require trade-offs with other needs (housing, food etc.). in the case of suspected tb, a high direct cost for services may encourage patients to delay seeking care or “shop around” for less expensive treatment from alternative (potentially unqualified) providers, which poses the risk of continued transmission in the community.

in countries which have adopted an Nhi program, in an ideal setting, members should be expected to benefit from comprehensive, easy-to-use, and widely accessible coverage for all internationally recommended levels of tb prevention, care, and treatment (see box 1). in the example in figure 1, where only a portion of necessary services are covered, a patient may be required to routinely seek outside services to fill gaps in coverage. the extent to which necessary tb services are included within the package of insurance benefits will also effect whether a patient is able to utilize the insurance program to cover all aspects of care or is required to use other providers for certain services, which may result in delays or potential for loss to follow up as the non-covered services increase the direct costs to the patients. in a high burden tb country, ensuring routine coverage for tb services for all patients, especially poorer

\[\text{Box 1. Key components of a complete coverage package for TB services}\]

- **Diagnosis**
  - At facility or through referral linkages
  - Sputum/ chest X-ray/ GeneXpert or other
  - Culture/DST using LPA/GeneXpert/MGiT/Other
  - X-Ray

- **Treatment**
  - PTB, EPTB, M/XDR TB
  - All phases
  - First and second line drugs
  - Case Management/DOT (facility or community levels)
  - Hospitalization where needed

- **Follow-up and social support**
  - DOT for adherence
  - Contact tracing
  - Nutrition support
  - Transport

- **Linkages with relevant programs**
  - HIV/AIDS, others

- **Patient education (prevention and health promotion activities to reduce TB transmission)**

- **Community TB awareness (public education)**

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patients who are more vulnerable to increases in direct costs, should be a priority objective for UHC programs.

Another method for evaluating the effectiveness of a UHC program described in Figure 2a also addresses questions of coverage (i.e., what services are included in the coverage package, and what population is covered by the program) but brings in additional questions of access and use (what barriers do patients experience when accessing coverage and utilizing services) and quality of services (do in-service providers have capacity to deliver all services in the coverage package and is service quality assured?). In order for universal coverage to make a real impact on improving health outcomes, it is necessary to integrate a focus on health systems elements related to access to and quality of services to ensure that any additional health system requirements generated by the incorporation of an NHI program are met. For example, if the registration process for NHI membership is difficult to navigate or not well understood by patients, uptake may be low as patients opt for direct pay-for-service providers. The NHI schemes and/or MOHs in high burden countries may also be required to set aside resources for community and patient education to prevent new infections.

If this framework is applied to TB services covered within NHI programs (Figure 2b), it is possible to analyze the impact of the program on improvement of TB outcomes. In terms of increasing the numbers of patients routinely benefitting from high quality TB services, it is important to examine how the population targeted for coverage under the health insurance program overlaps with the populations with traditionally low TB service use and identify where the gaps are. Similarly, it is important to examine what TB services from Box 1 are included in the package of services covered by the insurance program and what services the patient is obliged to seek from another source (for
example, if MDR TB services are not included, or certain diagnostics). As discussed above, in an ideal setting a patient should be able to receive all components of TB care by accessing the insurance program, without needing to “shop around” to fill gaps in service requirements. Access to and use of the insurance program poses critical questions for TB patients as well, especially as TB is a public health threat and the need to actively identify TB cases is critical to improving TB control overall. In this sense it is important to evaluate whether the insurance program is also able to contribute to the active enrollment of populations at risk of TB, to encourage more TB patients to access treatment. Similarly, the location of in-service TB providers is an important factor affecting whether patients will access and use services. Restrictions regarding where patients can seek TB care, long distances to service sites and lack of transport support can reduce adherence to treatment and encourage patients to default or seek more convenient direct-pay service options. Finally, the quality of TB care provided by in-service providers is an important consideration. For this it is important to evaluate the extent to which in-service providers are able to meet TB service delivery standards, what types of provider capacity building programs are used by the insurance program (for example, are there refresher training requirements linked to provider or facility accreditation) as well as how well facility-based services are able to link with community-based TB care providers, if present.

4 Overview of Assessment Plan

4.1 Objective

The objective of this report is to examine the extent to which TB has been integrated into NHI programs in several high burden TB countries and to analyze the impact of NHI on achievement of National TB Control objectives. This report synthesizes the findings of assessments in four countries - Thailand, Peru, Philippines, and India - which have adopted publically supported health insurance programs in order to:

- Examine the extent to which TB services have been integrated within NHI schemes.
- Examine the roles of TB stakeholders within the design and implementation of NHI programs
- Outline gaps and recommendations for improved delivery of TB services within NHI models

This assessment should be considered as a starting off point for understanding the role of NHI programs in meeting TB control objectives. Additional future work will be needed to assist NTP and NHI program managers in high burden countries to frame objectives and implementation plans for future inclusion and/or expansion of TB prevention and care coverage in schemes. Additionally, this report should assist to create a knowledge base and recommendations which program managers can use when planning for the design and implementation of NHI programs in other TB high burden countries.

4.2 Methodology

In each of the four countries, data collection teams conducted desk reviews as well as on-site visits to TB treatment facilities and semi-structured interviews with government program managers and stakeholders. The methodology utilized for the assessments is described in a general form below, which was modified slightly in each country to accommodate differences in the insurance programs targeted. Details about the methodologies employed in each country are included in the country level reports which are found in Appendix 1.
Based on a preliminary analysis of the existing information on TB services within NHI programs, the interview guides for the country level assessments were organized around the following broad information areas:

- What are the characteristics of the NHI model and who are principal beneficiaries?
- What are the implications of NHI for TB control programs, inputs, services?
- What are the additional health system requirements generated by NHI in terms of human resources, infrastructure and equipment/ supplies, and capacity building (both clinical and managerial) for TB services under the health insurance model?
- What are the implications of NHI for the communities most affected by TB, and for TB patients in terms of awareness, access, and quality of care?
- What are the current programs underway to improve health service delivery, and how can universal health care help overcome specific bottlenecks for TB diagnosis and care?
- What are the opportunities/challenges for linking health insurance programs to TB control objectives, including active case finding, integration of private providers (public-private mix), and expansion of MDR TB services, to achieve national TB control targets?

The interview guides are included in Appendix 2. A total of four interview guides were developed, relating to the categories below. In each country, an average of 10-12 interviews was conducted over a period of one-two weeks. The interview guides were tailored to ensure applicability to the country setting; however, the general meaning and purpose of the guides remained consistent. Interviews were conducted at the following levels:

- Policy/ program level: MOH/ NTP manager (1-2 total)
- Insurance mechanism: National Health Insurance Managers (1-2 total)
- Implementation level: District or Facility manager (3-5 in total)
- Community level: NGO, community health workers, DOTS supporters, or other

The findings from each country were compiled in detailed country level reports and summarized in this synthesis report, which provides a framework for analysis of the impact of insurance programs on TB health seeking behavior and service delivery systems.

4.3 Considerations regarding the methodology

The methodologies utilized in the assessment included only a select number of interviews with NHI and NTP planners and implementers. No patients were interviewed, and the findings do not therefore shed light on patient perceptions and preference when it comes to insurance program performance.

Each of the countries assessed utilize strikingly different models of national health insurance, and in some places more than one government-led insurance program is being implemented, aimed at covering different geographic areas or populations segments. Where multiple state-supported insurance providers exist, the assessment did not seek to examine every model in depth but instead targeted
particular programs, depending on the country (i.e., the NHSO in Thailand). For the most part, the insurance programs targeted in the assessment were the most prominent and/or wide-reaching program available, in terms of population coverage.

Due to the complexity and size of the health sector in India, the assessment focused for reasons of convenience on two states only (Rajasthan and Uttar Pradesh) and only interviewed select publically-supported insurance providers in those areas. Similarly in Peru, the interviews were confined primarily to metro Lima. The findings do not therefore provide a comprehensive appraisal of the health insurance landscape throughout the country.

5 Thailand

5.1 Burden of Disease and Treatment in Thailand

Thailand is a high TB burden country with a prevalence of 130 per 100,000 persons and a mortality rate of 11 per 100,000 persons (WHO Global TB Report 2011). Approximately 54,000 new cases (both smear positive and negative) were registered in 2010, of which slightly less than 2% were estimated to be MDR TB. In all, there were an estimated 1920 MDR TB cases among new and retreatment patients.

5.2 National Health Insurance

Thailand adopted a Universal Coverage (UC) insurance scheme beginning in 2001 in selected provinces and has now expanded nationwide. It is managed by the National Health Security Organization (NHSO), an autonomous state agency. The UC program is the largest of three types of state-supported health insurance in Thailand which include: 1) tax-financed coverage (UC) for the informal/self-employed sector – which incorporates a capitation based government prepayment system; 2) Civil Servants Medical Benefit (CSMB) for public sector employees and their dependents; and 3) social security (SS) for the private sector, with employer share and provider networks. The objective of these state supported health insurance systems is to provide access to an essential package of care to all Thai citizens. A survey in 2005 found that most of the Thai population is covered under one of the three types of health insurance: 72% under UC, 10% under CSMB, 11% under SS, as well as 2% under private insurance and 5% with no insurance.

UC coverage is available to persons that have registered for the Thai 13 digits National ID number and are not eligible for the CSMB or SS Schemes. The UC insurance package provides TB drugs and services as well as free long-term access to care. Funding for TB services is managed by the NHSO channeled through the TB Fund, which was designed to ensure that there will be sufficient funding in the NHSO budget to provide continuous treatments and services to TB patients. The TB Fund was set up to streamline payments and avoid disruptions in services due to diagnostic and drug shortages. The Fund covers first line TB and MDR-TB drugs for adults and children, diagnostics (AFB, CXR; Sputum Culture; Drug Sensitivity Testing-DST), DOTS, and case detection services for those exposed to active TB cases.

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TB services can be accessed at registered hospitals where weekly TB clinics are held. Most hospitals have a “Fast Track TB” program where TB symptoms are screened by the Triage nurse. If a patient has MDR-TB, they are referred to designated MDR TB treatment sites. DOTS services are performed at community health centers or home-based through village health volunteers or DOTs volunteers.

5.3 Role of the Thailand NTP

Prior to the introduction of the UC program, the primary responsibility for implementation of TB control programs and activities as well as TB care/service delivery was with the NTP. Since the introduction of UC and decentralization of TB services in 2001, the NTP has gradually transitioned from a service delivery role to one focusing on provision of technical assistance to the provincial and district public health offices. Under the UC scheme, the majority of the NTP former budget for service delivery was transferred to the NHSO Budget. Currently, the NTP is phasing out of the service delivery with only few TB clinics managed by NTP still in operation for treatment of DS and DR TB. The budget for NTP to carry out technical assistance is provided through the MOPH budget based on the NTP annual workplan and 5-year NTP strategic plan.

5.4 Impact of Insurance on Access to TB Diagnosis and Treatment in Thailand

The findings of the interviews and site visits indicated that the UC scheme has several advantages for improving access to quality TB diagnosis and treatment (see Table 1). There is a general perception that the UC scheme has improved access to TB treatment and services for the poor. Having a separate source of funding (the TB Fund) within the UC has insured continuous access to TB drugs, supplies and services. In addition, the health facility personnel interviewed indicated that the reimbursement for service is efficient and that they preferred reimbursement through the NHSO system over other types of insurance. In addition, the program managers and stakeholders felt that the introduction of the insurance system has had a positive impact on the quality of services. They felt that the high level of coordination between the NTP and the NHSO at the national level for delivery of TB care and services, for example, has helped to ensure consistency in screening and treatment guidelines.

5.5 Additional Health system Requirements

Program managers reported that the transition from a vertical TB control program to a decentralized implementation has resulted in additional health system requirements in several ways, as for example, management and planning of administrative costs have shifted to local administrators that often have limited experience in the provision of TB services. The shift from centralized management by the NTP has required capacity strengthening of program managers as well as the development of stronger systems for monitoring and evaluation, outcome research and impact analysis, and data management within the NHSO at the HQ and regional levels. In addition, infrastructure upgrades for laboratory analysis are needed since most laboratories do not meet the international Biosafety Level Standard (BSL) for TB and MDR TB testing; as a consequence, testing for MDR TB is only available at the regional laboratory). The current system requires more human resources for data management as well as standard operating procedures (SOPs) for laboratory analysis and data management and mechanisms for enforcing the use of SOPs and recommended guidelines. Another gap which was identified relates to the need for stronger synergy and coordinated planned between the NHSO and the NTP to meet TB
control objectives (for example, regular mechanisms for sharing data from the NHSO related to TB cases and outcomes).

5.6 Impact on Health Seeking Behaviors

While the insurance program has improved access to TB services for many Thais, restrictions on use of services mean that some TB patients may still face barriers to access of TB services. For example, there are limited locations in each province that are registered for MDR TB treatment, and there are significant gaps in service coverage for MDR TB patients as the NHSO is not able to rapidly absorb additional patients. In addition, UC beneficiary coverage is provided only at a designated facility contracted by UC that is pre-assigned based on primary place of residence according to the National Thai Identification Registry. Thailand experiences a high degree of population mobility due to seasonality and employment opportunities, and gaps in TB services due to location restrictions are an important barrier as TB requires continuous DOTs for 6 months for TB and up to 2 years for MDR-TB. There are also potential gaps in reimbursement to providers when patients seek health services outside of a contracted facility. Some populations in Thailand are also not eligible for TB care through UC coverage including: 1) non-registered Thais without 13-digit ID number, 2) non-registered migrants and their dependents, and 3) Thai citizens who were previously on other public benefits but are currently unemployed. While there is no hospital policy to turn away TB patients for TB services despite lack of insurance coverage, treatment costs for migrants are largely covered by NGOs and the Global Funds for AIDS, TB, and Malaria (GFATM). However, cancelation of the GFATM Round 11 and gaps in services for migrants point to the need for a long term solution on migrant health issues backed by a clear national policy. With the anticipation of ASEAN 2015, a regional policy on cross-border health issues will need to include access to TB services.

The current system for TB diagnosis and treatment through UC does not prioritize active case finding. Some of the health providers interviewed indicated that TB patients are often reluctant to seek an early diagnosis for TB due to the preference for self-treatment, a long wait time at hospitals, and fear of being diagnosed with TB. The wait time for services through UC is also reported to often be longer than without UC (Thailand assessment 2011). Other factors which prevent patients from seeking preventive measures and early diagnosis/treatment include transport costs to reach the facility, loss of income during treatment, time away from work or family, and denial for fear of being sick. Adherence to TB treatment also becomes challenging as an increasing number of patients are placed on medications for other co-morbidities including chronic diseases such as diabetes or heart diseases.

The UC program also has limited ability to address underlying factors of patient-related access delays such as stigma, and in some cases may reinforce or exacerbate stigmatizing approaches. For example, many hospitals implement a “fast track TB queue” to quickly identify suspected cases of TB, in addition to offering TB clinics. However, anecdotal cases of stigmatization of TB patients by health care providers and non-TB patients have been reported from these “special attention” activities. An evaluation of the psychological impacts of “special attention” activities may offer useful information on how to improve existing TB care and services.
5.7 Recommendations for improving TB coverage

Thailand’s national health insurance model has accomplished a great deal in terms of improving access to and quality of health services, including TB. However, there are several areas which require additional attention to improve service coverage and quality, relating to:

- **Migrants and mobile workers**: This group represents a challenging but critical segment of the population in Thailand. Although there are important questions of coordination and mandate when it comes to responsibility for health service provision to mobile populations, from a public health perspective, provision of quality TB services to this group is vital to control the epidemic in the population as a whole. Discussion and consensus around methods for extending coverage to this group, including increasing flexibility of designated service sites for NHSO members should be pursued.

- **Social support benefits**: Mechanisms for including social support benefits (including transport, nutritional support, compensation for loss of income, etc.) should be explored as a means of promoting TB treatment adherence. Linkages with other care providers at the community and support for contact tracing activities should also be strengthened.

- **Coverage for MDR TB**: MDR TB is a critical gap in TB service provision. Efforts are needed to significantly expand coverage for MDR TB patients and increase and enhance referral and follow up for suspected MDR TB cases.

- **Coordination with NTP**: As the functions of the NTP have been decentralized, more responsibilities for TB service provision have shifted to the NHSO. It is important, however, that close coordination between the two agencies is maintained and that mechanisms for routine data sharing with the NTP are ensured.

- **Collaboration with other TB stakeholders**: Similarly, stronger linkages between NHSO and other TB care providers especially at the community level for referral and follow up and to provide patient support is needed.

A summary of the findings is provided in **Table 1** below.

**Table 1. Strengths and service gaps for TB services under UC**

<table>
<thead>
<tr>
<th></th>
<th>Strengths</th>
<th>Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Delivery</strong></td>
<td>Improved access to services for the poor; continuous supply of drugs and services through single stream procurement</td>
<td>Longer wait time at hospitals than without UC; registered TB patients required to utilize health center where they are registered (may not utilize site of choice)</td>
</tr>
<tr>
<td><strong>Health Seeking Behaviors</strong></td>
<td>Direct cost less of a barrier for accessing services</td>
<td>Some reluctance to seek early diagnosis due to long wait time at hospitals, transport costs, loss of income, and fear of disease; lack of coverage for social support needs</td>
</tr>
</tbody>
</table>
Limited coverage for MDR TB, coverage only at designated facility contracted by UC; no coverage for non-registered Thais and non-registered migrants

Many private health facilities are not contracted to provide services through UC program

### Philippines

#### 6.1 Burden of Disease in the Philippines

TB is a major health problem in the Philippines. One in every three Filipinos is infected with tuberculosis, and each day 75 people die of tuberculosis in the Philippines. TB ranks sixth among the 10 leading causes of death and illnesses in the country. Some 4% of new cases and 21% of retreatment cases were multi-drug resistant\(^6\). Most TB cases were from 30 years to 59 years of age, which is the economically productive age group. A study by Peabody in 2005 estimated that the Philippines lost around P26.5 billion (approximately US $789 million) because of premature death from TB. The study also found that a woman with TB loses P216 (approximately US$6.43) per day\(^7\).

#### 6.2 National Tuberculosis Program

Controlling TB is the flagship program of the DOH. The National Tuberculosis Program (NTP) works towards a vision of the country where TB is no longer a public health problem. The NTP seeks to cure 85% of all new cases of sputum smear positive TB. The TB goal is to reduce by one half the prevalence of sputum smear positive TB cases and TB mortality by 2015.

The DOTS strategy was launched in 1996 and in 2004, the Department of Health (DOH) initiated the fourth revision of the tuberculosis manual of procedures. The revisions included use of fixed dose combination anti-TB drugs, External Quality Assessment, adoption of the Public-Private Mix DOTS, strengthening of the TB Diagnostic Committees, DOTS facility certification and accreditation, and development of a health promotion plan specific to TB. The program uses sputum microscopy as a diagnostic test and the treatment consists of six to eight months of drugs. It has designated DOTs facilities including public rural, private hospital, private clinic and a mix of public and private facilities. The Philippine Plan of Action for TB Control 2010-2015 (PhilPACT) was formulated with the support from WHO and USAID. For the past five years, almost one-half million positive TB cases started treatment and about 90% were already successfully treated. In 2010, 43,000 cases were screened and 10,488 were

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started on treatment, along with 3,117 who were provided with Isoniazid Preventive Therapy. The NTP partners with PhilCAT (Philippine Coalition against Tuberculosis), a coalition of about 50 member organizations, to provide TB treatment and care.

6.3 National Health Insurance

The Philippines Health Insurance Corporation (PhilHealth) was created in 1995 with the aim of placing a renewed emphasis on achieving universal coverage. Universal Health Coverage, also referred to as Kalusugan Pangkalahatan (KP), is the “provision to every Filipino of the highest possible quality of health care that is accessible, efficient, equitably distributed, adequately funded, fairly financed, and appropriately used by an informed and empowered public”. The thrust of KP includes: 1) Financial risk protection through expansion in enrollment and benefit delivery of the National Health Insurance Program (NHIP); 2) Improved access to quality hospitals and health care facilities; and 3) Attainment of health-related Millennium Development Goals (MDGs).

Categorized as a tax-exempt government-owned and -controlled corporation (GOCC) of the Philippines, and attached to the Department of Health (DOH), PhilHealth aims to provide affordable social health insurance coverage for all Filipinos and ensure the availability of sustainable national health insurance for all. The social insurance program is designed to serve as the means for the healthy to help pay for the care of the sick and for those who can afford medical care to subsidize those who cannot. Both local and national government allocate funds to subsidy the indigent. Although exact numbers can vary, in 2011 PhilHealth reported reaching 82% coverage of its target population, which fell short of its target of universal health care coverage to Filipinos.

PhilHealth’s role is to finance the provision of health services, ensure quality delivery of health services and help to ensure better access to treatment for members. PhilHealth’s members can be categorized into five program categories: 1) the Employed Sector Program for workers drawing salaries in the public and private sector; 2) the individually paying program for entrepreneurs and professionals; 3) the Overseas Workers Program; 4) retirees; and 5) the Non-Paying and Sponsored or Indigent program. The service delivery system includes both public and private centers – 61% of the network’s providers are private and 39% are public. The premium for the poor and the informal sector is P1,200 (US$48.8) annually but is fully subsidized by the central and local governments. The government, with

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9 Ibid
the help of the Department of Social Welfare (DSW) determines who is poor and then enrolls them in the national insurance program.

In 2003, PhilHealth added a DOTS outpatient insurance benefit for TB patients. TB services are provided at accredited facilities and are provided to patients near their home or workplace. The NTP reimburses health facilities for providing TB services with a PHP 4,000 (approximately $93) flat rate benefit for new cases of pulmonary and extra pulmonary TB in children and adults. The package includes 1) follow-up diagnostic tests (sputum examination only), 2) follow-up consultation, and 3) TB drugs for six months. The benefit is given to the DOTS facility in two payments – first, after the accredited facility has finished the intensive phase of DOTS treatment; and second, at the end of the maintenance phase. To be eligible for TB benefits, a PhilHealth member must have a direct sputum smear examination at an accredited facility and then bring the results to an accredited DOTS facility. The member should also have paid for membership for three months.

6.4 Additional Health System Requirements

PhilHealth has made important contributions to health service delivery systems in Philippines, including for TB. The emphasis on accreditation of service sites against clearly defined TB control standards has played a positive role in increasing the quality of TB services. At the same time, the complex program has introduced additional layers into the health system and in some places highlighted weaknesses in service delivery. Management of TB benefits through PhilHealth has required strengthening processes for 1) accreditation; 2) administration of DOTS benefits; 3) regulation and coordination; 4) patient information; and 5) private sector engagement, among others.

1) Accreditation: Accreditation is a key feature of the PhilHealth system. Accreditation as a Philhealth DOTS center is designed to: i) link a health facility to a funding source to help upgrade their health services; ii) ensure that patients and communities will receive quality DOTS services; iii) motivate private practitioners to adopt TB DOTS; and, iv) increase the number of TB cases detected and cured in the community. As of December 2011 there were a total of 1090 accredited TB DOTS facilities in the country. This represents a significant increase over time, since as recently as 2005 there were only 100 Accredited TB DOTS facilities in the whole country. Based on first semester data in 2011 (of 796 accredited TB DOTS centers), the large majority (747) are public sector facilities and only 49 are privately operated. However, this only represents a portion of the DOTS centers operating in the country, and many patients still continue to seek care at non-accredited centers and from other health providers (including community providers and pharmacists). In part, this is a result of the stringent accreditation requirements and the lengthy process involved. PhilHealth has recognized the barriers the accreditation process can present and certain changes have been discussed or implemented; for example the requirement that a facility renew its accreditation every year has been changed to three years to reduce

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13 A facility needs the following in order to be accredited TB DOTS facility: 1) Certification from PHILCAT; Current Mayor’s Permit; List of Equipment and Supplies; Accreditation fee (P1,000 ); List of Available Drugs in the DOTS Center; Current photograph of complete clinic staff; MOA with an X-ray facility; MOA with microscopy center; PhilHealth remittance form
the burden on facility managers.

2) **Administration of benefits:** Delayed payment is one of the major problems faced by TB DOTS facilities. Although reimbursements of claims are meant to be processed within 60 days, routine payments typically take three to four months to be processed. In December 2009 the Department of Health (DOH) altered the reimbursement processes in an attempt to simplify and expedite payments, by breaking payments into two parts (75% of the claim amount to be reimbursed after a rapid assessment of members and provider eligibility and the remaining 25% after detailed review of the claim). Delays persist however, relating in part to strict requirements for claims forms which often lead to rejections. Also, while accreditation is conferred upon a certified DOTS facility, reimbursements are made directly to healthcare providers. As doctors are usually operate as “free agents” who may practice in hospitals (including government physicians who are salaried but are allowed to engage in private practice), thus PhilHealth payments are split for health professionals and health facilities and efforts to implement case payments essentially focus on bundling the payment for the health facilities. Delayed reimbursements in this way have contributed to negative perceptions of PhilHealth and created a major disincentive for TB DOTS facilities.

3) **Regulation and coordination:** Administration of the PhilHealth TB benefits requires a high degree of coordination among numerous agencies. Among these are the Local Government Units (LGUs) which oversee community services, including community DOTS and services from non-governmental providers, and share responsibility with the national government to cover premiums for the designated poor. Verification of poor families has been one of the challenges of PhilHealth, who currently coordinates with the Department of Social Welfare to utilize their database for classification of indigent families. PhilHealth works through the Philippines Coalition against TB (PhilCAT) who has primary responsibility for certifying and accrediting DOTS centers. Monitoring and evaluation of the program is the domain of DOH through the NTP, which also works with PhilCAT to review service delivery standards and expedite the process of accreditation. Overall progress is monitored and communicated through the CUP (Comprehensive Unified Policy) meeting called by DOH where all issues are discussed including accreditation, certification and reimbursement of claims, and review of service targets. For monitoring and evaluation, the Philippine Congress has further mandated the National Institutes of Health (based in the University of the Philippines) to conduct studies to verify and validate the performance of PhilHealth.

4) **Private sector engagement:** The private sector is a dominant source of health services in the Philippines. In 2004, the Operational Guidelines for Public—Private Mix DOTS in the Philippines, were adopted by the NTP/DOH and PhilCAT, but gaps remain in terms of effective coordination with the private sector as can be seen by the low numbers of accredited private sector DOTS centers. A high percentage (85%) of TB patients who seek treatment in the private sector go directly to pharmacies, but referrals from the private sector remain low.

### 6.5 Impact on Health-seeking Behaviors

The National Tuberculosis Prevalence Survey (NTPS) conducted in 1997 showed some unsettling patterns of the health seeking behavior among patients with suspected TB. Only an estimated 38% went

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14 Isangani Perla, “Pharmacy-Based TB DOTS Implementation Plan,” 2003 page 6
to see a medical doctor, either in a public hospital, private hospital, public health center, or private clinic. Disturbingly, a third (34.5%) of this group chose not to seek any form of treatment and 27.5% resorted to self-treatment\textsuperscript{15}. It is generally perceived that financial constraint and cost savings are the dominant reasons why clients by-pass medical providers. An underlying feature of PhilHealth is its emphasis on reducing restrictions which impede access to coverage and service use. Once a patient registers for PhilHealth membership and makes the choice to access services in an accredited facility, he/she is able to seek out care at any accredited facility. There are no restrictions on where TB patients may go for treatment, and patients may select a site based on convenience (close to residence or place of work). Despite this, utilization rates remain low for TB services. One reason given by provider informants for the apparent reluctance on the part of the many patients to claim coverage was related to stigma associated with the disease. Informants reported that patients may prefer not to process a claim to maintain anonymity. Any advantages to utilizing the PhilHealth package are not routinely communicated to the patient.

\section*{6.6 Recommendations for Improving TB Coverage}

As of end June 2011, PhilHealth had an estimated 75 million members, of whom 26.3M are registered members and 48.6M are dependents. This represents 78% of 2011 targeted population, and the system has continued to evolve since its introduction. However, there are still important coverage gaps. These especially relate to:

1) Marketing and improved patient information: A comprehensive marketing campaign is needed that provides information to public on the benefits of PhilHealth coverage, including information on services standards and quality at accredited centers (highlighting that services are provided free of charge). PhilHealth should work with TB stakeholders to ensure that any TB informational campaigns include messages on the availability of accredited DOTS centers. Similarly, a strong informational campaign is needed targeting private sector providers, especially pharmacists, to increase engagement and referrals to accredited service sites.

2) Increased patient benefits for support and adherence: The lack of subsidies for other TB treatment costs (transport, social support) has also served as a disincentive to patients to seek care at an accredited center (which may not be the most convenient) and negatively affects adherence to TB treatment. PhilHealth has recognized that some TB patients need subsidies to cover other treatment related expenses and promote adherence and a proposal is currently being debated to increase reimbursement for TB to 5000 PHP (approximately US $116) and for patients to be given P1500 (approximately US$35) for transport and other expenses out of this. Another proposal targeting MDR TB patients would provide P45000 (approximately US $1,046) for the facility and P30000 (approximately US $698) for the patients. However, the these proposals would require further adjustments to the reimbursement system, as payments are normally given at the completion to treatment and not while undergoing treatment.

3) Accreditation: Uptake of services can also be improved by increasing the number of accredited TB DOTS centers accessible to patients. This involves further examination of the accreditation process with

\textsuperscript{15} Ibid, refer to Annex 12 page 40
an aim of streamlining the system for facilities to achieve certification (a precursor to accreditation) and accreditation. Improvements in processes for reimbursements will further assist to remove disincentives for facilities to seek accreditation.

Table 2. Strengths and service gaps for TB services under PhilHealth

<table>
<thead>
<tr>
<th></th>
<th>Strengths</th>
<th>Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Delivery</td>
<td>Increase in number of accredited TB DOTS facilities</td>
<td>Reach and availability of accredited TB DOTS facilities; physical availability of providers limited;</td>
</tr>
<tr>
<td>Service Quality</td>
<td>Accreditation requires meeting service standards</td>
<td>Provider capability remains limited; accreditation process lengthy and difficult to navigate</td>
</tr>
<tr>
<td>Additional Health System Requirements</td>
<td>Engagement from LGUs</td>
<td>Delayed reimbursement to DOTS facilities and long turnaround time to process claims is a disincentive to seek accreditation; accreditation process; Data management</td>
</tr>
<tr>
<td>Health Seeking Behaviors</td>
<td>Designed to provide coverage to a wide sector of the population, targets vulnerable/ poor; No restrictions on where patients can seek care</td>
<td>Lack of patient information on accredited DOTS centers; Absence of subsidy for TB patients for transport/ social support may lower motivation; TB stigma and reluctance to seek out accredited sites</td>
</tr>
<tr>
<td>Linkage with Private Sector</td>
<td>Incorporates mechanism for integrating private DOTS providers via accreditation</td>
<td>Limited referrals from non-accredited private sector providers to accredited sites; number of accredited private sector facilities remains low</td>
</tr>
</tbody>
</table>

7 India

7.1 Burden of Disease

India is a large and complex country of more than 1.2 billion people. In 2010, the country had more than one and half million notified TB cases. The case detection rate is a low 59%. WHO estimated that 320,000 persons died of TB in India in 2010. There an estimated 60,000 MDR TB patients, though less than 3000 were on treatment in 2010\(^\text{16}\).

7.2 Economic Burden of TB

The direct and indirect cost of TB to India is estimated to be $23.7 billion annually (India assessment). Studies suggest that, on average, 3 to 4 months of work time are lost as a result of TB, resulting in an average lost potential earning of 20-30% of the annual household income. This leads to an increased debt burden, particularly for the poor and marginalized sections of the population. The

vast majority (more than 90%) of the economic burden of TB in India is caused by the loss of life rather than by morbidity. A study on the economic impact of scaling up of Revised National TB Control Programme (RNTCP) in India in 2008 shows that on average each TB case incurs an economic burden of around US$ 12,235 and a health burden of around 4.1 DALYs (need reference). Similarly, a death from TB in India incurs an average burden of around US$ 67,305 and around 21.3 DALYs.

7.3 National Tuberculosis Program

The National Tuberculosis Program (NTP) has been in existence since 1962. In 1992, in view of the lack of appreciable change in the epidemiological situation of TB in the country the Government of India (GoI), instituted a review of the TB situation and the performance of the NTP. The review found that the NTP, though technically sound, suffered from managerial weaknesses, inadequate funding, an over-reliance on x-ray for diagnosis, had frequent interrupted supplies of drugs, and low rates of treatment completion. To rectify these issues, the Government decided to give a new support to TB control activities by revitalizing the NTP, with assistance from international agencies.

The RNTCP was created in 1993 and adopted the internationally recommended DOTS strategy, as the most systematic and cost-effective approach to revitalize the TB control program in India. The revised program emphasized political and administrative commitment to ensure the provision of organized and comprehensive TB control services; reliable and early diagnosis through smear microscopy of self-reporting chest symptomatics in the general health services; an uninterrupted supply of good quality anti-TB drugs; effective and patient-friendly treatment with SCC given under direct observation; and accountability through proper recording and reporting, and effective supervision. The objectives of the RNTCP are to achieve at least 85 percent cure rate among the new smear-positive cases initiated on treatment, and thereafter a case detection rate of at least 70 percent of such cases.

The current focus of the program is on ensuring “universal access” to good quality early diagnosis and treatment for all TB patients from which ever provider they choose to seek care. The program has covered the entire nation since March 2006 with 632 district reporting units.

The concept of public-private mix in TB is incorporated into the RNTCP and it includes treatment in the private sector under the DOTS strategy through a mix of different types of service providers. Over 100 corporate sector units are now involved in the RNTCP, including tea estates.

7.4 Insurance Programs in India

Currently there is no comprehensive coverage for TB services under the state-supported health insurance programs targeted by this assessment\(^\text{17}\). However, certain TB services are provided through various insurance schemes in India, and numerous small and large scale insurance schemes provide coverage for other health services. The array of publically-funded health insurance providers is diverse and fragmented (see Table 3) and often localized to a particular region or sector.

Table 3. Coverage under targeted insurance programs

<table>
<thead>
<tr>
<th></th>
<th>Max Bupa (Jun 2011)</th>
<th>Star Health (Jun 2011)</th>
<th>RSBY (Dec 2010)</th>
</tr>
</thead>
</table>

\(^{17}\) The assessment focused for reasons of convenience on two states only (Rajasthan and Uttar Pradesh).
<table>
<thead>
<tr>
<th></th>
<th>No. of policies</th>
<th>No. of persons covered</th>
<th>Total premium collected (Rs. lakhs)</th>
<th>Persons covered per policy</th>
<th>Premium per person (Rs.)</th>
<th>Premium per person (USD)</th>
<th>No. of claims</th>
<th>Claim amount (Rs. in lakhs)</th>
<th>Claim amount (USD in million)</th>
<th>Hospitalization ratio (no. of claims as % of persons covered)</th>
<th>Average claim amount (Rs.)</th>
<th>Average claim amount (USD)</th>
<th>ESI: 50 million beneficiaries (2009) – family members of organized sector</th>
<th>CGHS: 3 million beneficiaries (2010) – family members of central government employees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12,398</td>
<td>25,181</td>
<td>1,373.08</td>
<td>2.03</td>
<td>5452.84</td>
<td>121.17</td>
<td>854</td>
<td>374.70</td>
<td>0.83</td>
<td>3.39%</td>
<td>43,875.88</td>
<td>975.02</td>
<td>50 million beneficiaries (2009) – family members of organized sector</td>
<td>3 million beneficiaries (2010) – family members of central government employees</td>
</tr>
<tr>
<td></td>
<td>198,406</td>
<td>632,915</td>
<td>36,363.29</td>
<td>3.19</td>
<td>5745.37</td>
<td>127.67</td>
<td>171,476</td>
<td>31,421.30</td>
<td>69.82</td>
<td>27.09%</td>
<td>18,324.02</td>
<td>407.20</td>
<td>3 million beneficiaries (2010) – family members of central government employees</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25,969,276</td>
<td>88,814,924</td>
<td>134,001.46</td>
<td>3.42</td>
<td>150.88</td>
<td>3.35</td>
<td>3,051,434</td>
<td>---</td>
<td>---</td>
<td>3.43%</td>
<td>---</td>
<td>---</td>
<td>3 million beneficiaries (2010) – family members of central government employees</td>
<td></td>
</tr>
</tbody>
</table>

Source: (Max Bupa, Star Health) – IRDA Journal June 2011, (RSBY) – RSBY website accessed on 10th January 2012 (www.rsby.gov.in)

Coverage of health care services for workers in certain sectors are provided by publicly-supported insurance programs such as the Employees’ State Insurance (ESI) and the Railways and Central Government Health Services (CGHS). The Railways and CGHS, as well as the Ministries of Defense, Steel, Coal, Mines, Petroleum and Natural Gas, Shipping, Power, Chemicals and Fertilizers, have given directives to their respective health facilities to adopt the DOTS strategy, and patients are being registered under the RNTCP at the respective health facilities. In this way, TB treatment has been extended to these workers beyond what was previously offered through the RNTCP. Insured members under ESI and CGHS are eligible for TB consultation, diagnosis and medicines, as per DOTS.

Some limited coverage for TB is also provided through insurance schemes for the self-employed and informal sector. The Rashtriya Swasthya Bima Yojana (RSBY) program, which was launched in 2007, provides coverage to workers and their dependents in the informal sector who are categorized as being Below Poverty Line (BPL) with a total sum assured of Rs. 30,000 per family per annum. As of July 2011, RSBY is being implemented across 29 states and UTs in India, covering 268 districts and approximately 241,000 BPL families. The scheme is being implemented in both government and private hospitals; presently there are 8686 public and 6148 private hospitals implemented services with RSBY across the 29 states and UTs.

Many state governments have also initiated health insurance schemes for the BPL population and unorganized workers. These schemes include Arogya Sri Scheme in Andhra Pradesh, the Chief Minister’s Health Insurance Scheme for Life-Saving treatments in Tamil Nadu, Suvarna Arogya Suraksha Scheme in Karnataka, and Mukhya Mantri BPL Jeevan Rakhsa Kosh in Rajasthan. The major focus of
these schemes are to cover identified tertiary care diseases which involve catastrophic expenditure and are not covered under any other pre-existing health programs. Many states have further adapted the RSBY Model/Arogyasri Model to suit their requirements and launched health insurance programs in the last three years.

The coverage through these insurance schemes only covers primarily hospitalization and not outpatient treatment. Thus, TB diagnosis and treatment under DOTS are not covered through these programs. Discussions with 3 insurance companies\textsuperscript{18} revealed that TB was not considered as fitting their product designs mainly because of the treatment cycle (six months to one year or more). Since most of the insurance products are valid for one year only (renewable every year) and the TB treatment is likely to exceed the coverage period, it does not easily fall within their implementation model. Also, a chest symptomatic might get noticed during the medical examination while enrolling for insurance, and so would fall into the “pre-existing” disease category and thus get excluded in the insurance coverage.\textsuperscript{19} Overall, the emphasis is for coverage of episodes of illnesses requiring hospitalization and not for any defined disease groups.

7.5 Impact of Insurance on Access to Services

In the absence of insurance coverage for TB screening and treatment, the main provider of TB care in India is ostensibly the RNTCP. The insurance plans for employed workers such as ESI (for factory and organized sector workers) and CGHS (for central government employees), cover diagnostic tests and consultation, but patients are supposed to use RNTCP treatment services. There is little coordination (and no routine data sharing) between the insurance providers and the RNTCP and it is therefore difficult to determine the impact of these programs in terms of improved access and uptake of TB treatment services. However, it is likely that employees covered under these insurance programs have improved access to detection and diagnosis of TB. The other insurance plans for the poor only cover hospitalization but not screening, consultation and DOTS services. Thus, members of these plans need to use RNTCP services to get TB services.

7.6 Health-seeking Behaviors

As the majority of TB services are not covered under the various insurance programs targeting workers and the vulnerable poor, there are significant missed opportunities to identify TB patients and link them directly into treatment, as there is a lack of effort to carry out active case finding in healthcare settings which is critical to increasing case detection. As a result, the insurance programs do not seem to have a significant positive impact on TB-related health seeking behaviors, though they may provide indirect benefit to TB suspects and patients by improving engagement with the formal health sector, increasing access to general health services, and promoting positive health seeking behavior generally. These indirect benefits vary by program model, however, and are difficult to quantify.

\textsuperscript{18} The assessment team interviewed managers from RSBY, Max Bupta, and Star Health

\textsuperscript{19} RSBY is an exception, and covers all pre-existing diseases and hence allows for hospitalization for TB patients and MDR TB patients within the beneficiary package. RSBY covers medical admission for TB (Extra pulmonary, pulmonary etc) in General Ward with daily charges up to a maximum of Rs.500 (INR) per day subject to a total of RS.30,000 INR. However, in many cases (especially MDR TB cases) the benefit package of Rs. 30,000 falls short of the out of pocket expenditures that a patient incurs.
Once TB is suspected, an insurance member should ideally present to an RNTCP site for diagnosis and treatment. Currently, there are virtually no formal referral mechanisms between the insurance providers and the RNTCP and limited follow up of patients as they move between providers. Insurance members with TB therefore are faced with the same considerations as non-members when it comes to accessing TB services. While the RNTCP has important strengths, a key limitation of the program is its passive case finding approach. Many TB patients continue to bypass the RNTCP in favor of seeking care through private providers (only around 60% of TB patients are estimated to be covered by RNTCP). A disincentive for TB patients to follow through with treatment is the high cost of transportation and loss of wages, leading to a preference for self-treatment or treatment from local, private (potentially unqualified) providers.

7.7 Recommendations for Improving TB Coverage

As mentioned above, the health insurance system in India encompasses a diverse array of programs and actors, targeting different population segments. As TB is not currently well incorporated in state-supported health insurance programs, most programs would require significant alterations to their basic design in order to cover provision of routine TB services, which may not be feasible in the short term. The assessment team discussed with the managers of the different insurance schemes and the RNTCP some possible long term solutions, which would require more debate and prioritization. For example, it was suggested by national TB officials and insurance company experts that “Vouchers” can be a feasible alternative for covering the cost of medicines given mainly by the private healthcare providers, which could be managed reasonably by a third party administrator or similar “Voucher Management Agency”. This would mean, though, that they would automatically come within the network of RNCTP (for reporting and voucher tracking). The concern expressed by the RNTCP is that these services might be parallel or redundant to the RNTCP services and potentially increase the transaction costs. A summary of some of the possible recommendations for new long-term models include the following:

- For taking TB treatment into the ambit of mainstream health insurance, out-patient care needs to be included as a first step. This is seemingly difficult given the fragmented and unregulated nature of health services in India. But with the central government committed to provide free essential medicines universally (as proposed in the 12th 5-year plan covering the period from 2012 to 2017), it might be a feasible option in future.
- Introduce a voucher scheme for TB diagnosis and treatment for patients seeking treatment from private providers. This may be distributed and tracked at the community level through the outreach workers (public or private, engaged through an agency relationship through incentive based payments) and managed by a TPA or Voucher Management Agency at the state and district level.
- Introduce a comprehensive work safety insurance scheme for health workers, through their respective employers, to cover for the treatment of TB and other infections that they may contract during the course of discharging their duties (includes employment and wage protection).
- There is also a need to pilot and then scale-up a social safety net for TB patients and their families, especially for MDR/XDR TB cases, to cover for wage-loss due to staying away from work
during the long treatment period. This might take the form of direct cash transfers through the government system or NGOs.

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>Strengths</th>
<th>Service gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Delivery</td>
<td>Some limited TB services are covered under ESI and CHGM insurance for workers</td>
<td>The majority of routine TB services are not covered by most insurance schemes</td>
</tr>
<tr>
<td>Health Seeking Behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Seeking Behaviors</td>
<td>Available to formal sectors and BPL</td>
<td>High levels of out-of-pocket expenditures; Preference for use of private sector; Absence of subsidy for TB patients for transport costs and loss of wages may lower motivation</td>
</tr>
<tr>
<td>Coverage</td>
<td>Some collaboration between the national TB program and the private health sector</td>
<td>No coverage for diagnosis or DOTS under insurance for the poor</td>
</tr>
</tbody>
</table>

8 Peru

8.1 Burden of Disease

In Peru in 2010, 32,477 cases were diagnosed TB (Tuberculosis in all forms), of which 28,297 were new cases. A significant proportion (58%) of TB cases are concentrated in the metropolitan area of Lima and Callao. The number of TB cases has declined from 256.1 (per 100,000) in 1992 to 58.6 cases (per 100,000) in 2010 for an overall decrease of 77.1%. The highest level of MDR/XDR TB in Latin America is found in Peru with only a small decrease in the number of cases since 2005. Some 1,094 MDR/XDR TB cases were reported in 2010. Prevention, detection and treatment of MDR/XDR TB remain a central focus of TB efforts in Peru, as reflected in the substantially increased Government of Peru (GOP) budget for TB care in 2012.

8.2 National Tuberculosis Program

During the 1980s the GOP began to prioritize TB control and in the early 1990's the National Tuberculosis Control Program (NTCP) adopted the DOTS strategy. In 2001, the overall health policy of the Ministry of Health (MINSA) began to change and move away from vertical programs to more “integrated” horizontal programs. As a result, the funding and the technical support to the TB program were reduced. During 2002 and 2003, there was a decrease of 6% per year in the number of cases with respiratory symptoms served. In 2004, National Health Strategies were developed, including the National Strategy for Prevention and Control of Tuberculosis. This policy change resulted in a significant weakening in TB control activities, including a significant reduction in the central TB program staff and a reduced ability of the NTCP to directly support health providers with training and supervision. Due to the increase of cases and the emergence of MDR/XDR TB cases in recent years, health activities to address TB have become a priority again. The name of the national program was changed to “Estrategia Sanitaria Nacional de Prevención y Control de la Tuberculosis” (National Strategy for the...
Prevention and Control of TB—ESN-PCT) and was reorganized as the technical and policy unit under MINSA responsible for establishing the policies, norms, procedures for the control of tuberculosis in Peru, ensuring the prevention, detection, diagnosis, treatment and supervision to all patients with tuberculosis. The ESN-PCT was revitalized with new infrastructure, an increased number of technical staff at the central level, a strengthened network of staff supporting regional offices and Health Centers, the introduction of a TB Information Unit (TBIS), and a newly updated national TB strategy based on the document "Technical Standard of Health Tuberculosis Control" and incorporating DOTS and DOTS Plus, as advised WHO / PAHO. The ESN-PCT is integrated into general health services nationwide, is operationalized at the local level, and its coverage extends to all facilities of the Ministry of Health and other institutions (Social Health Insurance (EsSalud), Health Services of the National Police, Health Services of the Armed Forces, Medical Centers of the Universities, the National Prison Health (INPE), Municipalities, Medical Centers of the Catholic Church, private sector and others).

8.3 National Health Insurance Programs in Peru

Universal Health Coverage in Peru guaranteed through the Comprehensive Health Insurance Plan (Plan Esencial de Aseguramiento or PEAS) which was enacted as a health care reform law in 2007. PEAS is designed to ensure universal coverage of all Peruvians, while prioritizing those with less resources and most vulnerable. PEAS states that everyone in Peru should be affiliated with a national health insurance model, subsidized by the government or non-subsidized, and is designed to ensure there is no discrimination based on the capacity to pay or risk, and provides government subsidized financing of health insurance coverage to the poor and vulnerable.

Some of the main characteristics of PEAS are: affiliation is obligatory for all Peruvians; access and financial protection are guaranteed; norms are established and regulated to oversee the financing and delivery of services; management and services are decentralized to national, regional and local levels; a comprehensive benefit package is included in NHI schemes; insurance coverage is sustainable owing government regulation and financial support.

The health sector in Peru is made up of five main service delivery systems that provide health services to the population. This assessment focused primarily on TB service provision through the first two mechanisms listed (MINSA and EsSalud).

- **MINSA**—The Ministry of Health provides services to the population in poverty and extreme poverty through a national health insurance scheme

- **EsSalud**—The Social Security institute operating under the Ministry of Labor provides health services to workers in the formal and informal sectors and their dependents, financed through insurance premiums. EsSalud manages its own network of health services, plus contracts service provision through private Health Delivery Organizations (EPS).

- Uniformed services health networks: The Armed Forces Medical Services (Navy, Air Force and Army) under the Ministry of Defense provides health services to its members and their dependents. The National Police under the Ministry of Interior provides health services to its members and their dependents.
• The private for-profit sector provides services to those who can directly pay for services, or purchase prepaid health. The private sector nonprofit charities serve a variety of people in need of health services.

Three main types of financing regimens are covered by UHC law.

• **Subsidized**: *(MINSA)* Includes persons affiliated with the full public financing scheme, aimed at the poor and most vulnerable populations.

• **Semi-subsidized**: *(MINSA)* Includes persons who are affiliated with the partial public funding scheme, accompanied by contributions from insured persons and employers.

• **Non-subsidized**: *(EsSalud)* Includes persons who are affiliated with an insurance scheme independently or through their employer. The employer contributes 9%. The primary model for this type of insurance is EsSalud which operates its own hospitals and clinics, and contracts-out some health services to private insurance groups (EPS).

Beneficiaries of the subsidized and semi-subsidized insurance models are served through MINSA network of hospitals, and health centers, while most non-subsidized model is operated by the social security administration or EsSalud (under the Ministry of Labor). For some types of services and procedures, EsSalud coordinates with MINSA facilities or private insurance providers. SIS coverage increased substantially from 7 million in 2007 to almost 12 million in 2009. The number of semi-subsidized has fallen while the number receiving fully subsidized care has risen by 68%.

The *Seguro Integral de Salud* (SIS) is located within the MINSA, and oversees the financial provision of health insurance in the network of MINSA hospitals, health centers and support services such as labs. SIS is an executing agency under the MINSA in Peru and is charged with the responsibility for protecting the health of Peruvians who are vulnerable and poor or extremely poor and therefore do not have access to other forms of health insurance.

Insurance coverage has increased substantial from only 23.4% in 1994 to 64.4% in 2010.

| **Table 5. Health insurance coverage in Peru, by type of coverage,** 1985-2010 |
|--------------------------------------------------|---|---|---|---|---|---|---|---|---|---|
| EsSalud                                         | 17.6 | 23.4 | 22.7 | 32.3 | 41.7 | 37.3 | 36.2 | 38.4 | 42.1 | 53.7 | 60.6 | 64.4 |
| MINSA-SIS                                       | 17.6 | 20   | 19.4 | 19.7 | 16.1 | 17.4 | 17.3 | 18.6 | 19.6 | 20.1 | 21.2 | 20.6 |
| Other insurance programs                        | 0    | 3.4  | 3.3  | 12.6 | 4.6  | 5    | 4.8  | 4.4  | 5.5  | 5.5  | 5.6  | 4.3  |
| **Without Insurance (%)**                       | 82.4 | 76.6 | 77.3 | 67.7 | 58.3 | 62.7 | 63.8 | 61.6 | 57.9 | 46.3 | 39.4 | 35.6 |

8.4 **Impact of Insurance on Access to Services**

The benefit plan supported by SIS is outlined in the PEAS and consists of insurable conditions and other interventions which are covered by all insurance models, whether public or private, and contain explicit
guarantees of timeliness and quality for all beneficiaries. Benefits are offered on a compulsory basis by all health insurance institutions. The package of benefits provides for comprehensive TB care for pulmonary, extra-pulmonary, and MDR/XDR TB. Community level TB services are implicitly covered by the PEAS guidelines for universal coverage of NHI models. Nevertheless community services are limited under the MINSA/SIS insurance scheme, and absent from the EsSalud benefit package.

In order to receive insurance coverage and access health services, one is required to meet certain criteria, and officially register with the insurance provider. In an effort to facilitate insurance coverage among the poor and vulnerable, MINSA/SIS has made the registration process available through nearby Health Centers. Once a person is registered, the affiliate and beneficiaries are able to obtain a comprehensive package of TB services as guaranteed by the PEAS policy guidelines.

While the coverage of NHI models in Peru has increased over recent years, many have not gone through the process of registration. In Lima, 45% of the population still remains without insurance coverage. SIS sets criteria for receiving subsidized TB services in public facilities. As a result families that are not classified as poor or very poor do not meet the criteria and cannot be registered for insurance coverage by SIS. The result is a gap in coverage for those who do not work in the formal sector or cannot afford to pay for insurance premiums to cover all the family members, but are not classified as poor. These families fall in an area that is not sufficiently addressed by the UHC policy. Pharmacies and other health outlets also serve as health delivery points for those who are not registered, and/or do not want to go through the process of visiting a MINSA or EsSalud facility to receive a medical consultation.

There are service gaps in each of programs. There are only 12 EsSalud Health Centers in Lima y Callao, and are located in larger urban areas (like Lima/Callao); as a result in many cases where EsSalud TB patients live closer to a MINSA Health Center, compared to a EsSalud hospital or primary care facility, treatment of the patient is out-sourced to the nearby MINSA Health Center. This includes the provision of drugs from EsSalud network services to the MINSA Health Centers, which constitutes an important subsidy of MINSA to EsSalud (in terms of human resources). The relationship between MINSA Health Centers and EsSalud facilities operates in an informal manner. TB patients pick up their drugs from EsSalud and take them to a nearby MINSA Health Center, along with a note from their EsSalud nurse.

Box 2. MINSA and EsSalud cover the following TB services (as per the PEAS policy):

- Basic pulmonary TB covers lab services, drugs, IEC materials for Health Centers and hospitals where sputum samples are collected and patients treated by DOTS.
- Extra-pulmonary TB includes a wider range of tests (culture, and rapid tests) which are included in the annual Budget for Results and supported by the Global Fund.
- MDR and XDR TB cases cover a period of 24 months or until the patient is cured, and includes identification, diagnosis, treatment and follow-up of patients that are served directly served by Health Centers and hospitals.
- Other social support at the service delivery level includes food (canasta) for the families of TB patients, and improved living quarters (patient’s home or other location) (limited coverage under EsSalud).
The TB patient receives DOT from the MINSA Health Center and receives a resupply each month along with their treatment evaluation or check-up. Given the large volume of patients in EsSalud facilities, there is a lag in time between requesting a consultation and actually obtaining it. Thus infected patients continue to expose co-workers, family members, and other close contacts while waiting for a consultation visit. Moreover, EsSalud patients also incur delays in receiving services owing to the limited diagnostic capability of EsSalud labs. EsSalud nurses carry out contact tracing of newly diagnosed cases, but routine community level services are largely outsourced to public Health Centers.

While collaboration exists between MINSA and EsSalud to provide access to lab tests, there are often shortages or stock-outs of key commodities. The result is that TB patients or their family must pay for items like X-Ray plates. Shortages of drugs (particularly 2nd line medications) and food were also reported as creating barriers to effective TB treatment under the MINSA/SIS insurance model.

8.5 Health-seeking Behavior

The gaps in insurance registration are concentrated among the poorer and more vulnerable segments of the population. Many poor families have not registered for subsidized nor semi-subsidized health insurance, under the auspices of SIS. Instead they opt for going to pharmacies or private providers (and pay out of pocket). Others delay registration in one of the insurance plans until they need health care, the illness has become more severe, or have an emergency. Many, if not most, extra-pulmonary TB and MDR TB cases occur because of delays in seeking care, poor supervision of DOT, or discontinuing treatment. While there are occasional registration or enrollment campaigns in the poorest and geographically remote areas, which also include helping members to obtain the national ID card (DNI), registration for subsidized insurance is generally passive, and individuals wait until they have a health problem to register in a nearby Health Center. More efforts are needed to target enrollment assistance to poor and vulnerable communities, tied to social marketing to increase awareness of available public services to the poor/high risk populations, coupled with proactive registration and community level communication/outreach.

Both EsSalud and MINSA have a limited supply of IEC materials and the distribution of IEC leaflets and brochures (for use during counseling and giving to the patient) is infrequent and characterized by stock-outs. IEC materials (e.g. for counseling) are in-frequently provided to Health Centers, but health providers do not receive instructional material that illustrate how to use the material (which could be read by the provider or used in counseling training sessions).

8.6 Coordination between the NTP and insurance programs

ESN-PCT provides a key support function in monitoring the coverage and incidence of TB and formulating long term strategies and plans, particularly for insurance programs provided through public sector health services and aimed at poor and vulnerable populations. A major role of ESN-PCT is to identify and target previously underserved populations (indigenous and remote populations and prisoners) and advocate for coverage and funding. However, in practice ESN-PCT plays only a limited role in actively coordinating public and private sector planning of TB efforts and resources (in particular MINSA and EsSalud TB networks).
MINSA facilities are more closely tied with ESN-PCT staff who work at both TB service delivery and administrative levels. In general Health Centers have a direct link to ESN-PCT support services (for supervision, learning and IEC materials), compared to EsSalud hospitals and primary care facilities. For example, Sub-Network TB supervisors provide routine supervision visits to Health Center.

Training activities and monitoring are jointly planned at the regional level by the ESN-PCT and regional health management teams. The monitoring/supervision system is based on an approach called "integrated monitoring" which measures compliance with TB standards. The supervisory visit includes a team meeting in which treatment registers and forms are reviewed, as well as medical records. The supervision and monitoring process documents the progress of TB indicators at different levels of service. This is the primary mechanism used by MINSA to ensure compliance and performance of TB activities at the Health Center level and conformance with the package of PEAS-mandated TB services to be covered by all NHI models.

8.7 Study Recommendations for Improving TB Coverage

Collaboration between MINSA and EsSalud: There is a level of coordination between MINSA and EsSalud which assists in some cases to close service gaps (as described above in the case of DOTS for EsSalud patients). The national network of MINSA labs (all four levels) technically and financially support the TB services provided through EsSalud hospitals and primary care centers. Comprehensive TB care would not be feasible through existing state supported insurance programs without the MINSA lab network. There is an opportunity for increased collaboration in community campaigns and presentations, school events, workplace prevention and testing, in areas where both MINSA and EsSalud have primary health care facilities. This also means that local ESN-PCT staff needs to work closely with both to ensure TB planning, sensitization, and mobilization of resources (e.g. mass media, campaigns, political involvement, and participation of media personalities).

A critical service gap in both programs relates to community level services (outreach, treatment support, and follow up care), especially for DRTB patients. Given the current weakness in the community-based approaches of MINSA and EsSalud (e.g. no incentives nor financial support for Community Health Workers to cover urban neighborhoods in Lima/Callao) there is no effective mechanism for reaching out and providing a range of TB prevention, treatment and follow up information to poor populations residing in high-risk areas. Especially for EsSalud, stronger efforts are needed to integrate communication and patient education mechanisms into the service delivery model. Currently, TB services in EsSalud are largely passive and communication materials are used when patients are identified as TB suspects, are prepared for TB treatment, and followed-up and counseled during the treatment process.

| Table 6. Strengths and service gaps for TB services under Insurance Schemes in Peru |
|-----------------|---------------------------------|---------------------------------|
| **Service Delivery** | **Strengths** | **Service gaps** |
| Both models provide nominal comprehensive coverage for all forms of TB | Community level services are poor or limited in scope |
| **Health Seeking Behaviors** | | Persistently high percent of patients do not pre-enroll (rather wait until they are sick to |

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Coverage | Insurance available to all; coverage has steadily increased | Large percent of eligible population (poor & vulnerable) not fully registered for subsidized services
Linkage with Private Sector | EsSalud coordinates with private insurance providers on limited basis to cover certain patients | Stronger linkages are needed other private sector actors (i.e., employers and NGOs)

9 Synthesis of Findings from Four Countries

The four countries highlighted in this assessment currently implement significantly different models for publicly-supported health insurance. Each country has continued to evolve their approach over time, in an effort to target services better to vulnerable population groups, improve the quality of services, and streamline administrative processes. In many ways, the models presented are not directly comparable; however, it is still important to identify the features which have contributed to successes or challenges in relation to contributions to TB control. The table below (Table 7) shows key findings from the four assessments on the role of national health insurance in provision of TB services. Access to TB services increased for registered members in Thailand and Philippines when national insurance was introduced. In India, access improved for some beneficiaries of insurance - members of public sector employee coverage - but not for members of insurance for populations below the poverty line.

On the other hand, some characteristics of national health insurance can restrict access to provision of TB services. In Thailand, restrictions on the populations that are covered, location of facilities where services are offered, and increased waiting time may contribute to access barriers (although access and uptake is generally strong). In the Philippines, patients have are obliged to seek out accredited sites, which may not be the most convenient, and populations that have not registered for at least three months are denied coverage. In India, insurance programs for the poor only cover hospitalization and not diagnosis and DOTS services.

**Table 7. Key findings from four Country Assessments**

<table>
<thead>
<tr>
<th>Access to Services</th>
<th>Thailand</th>
<th>Philippines</th>
<th>India</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better for Thai citizens with 13 digit numbers but not for migrants and Thais without coverage; patients may not go to hospital of choice</td>
<td>Increase in number of accredited TB DOTS facilities; limited availability of accredited providers</td>
<td>More TB services available to members of public sector employee insurance; insurance for the poor only covers hospitalization for TB</td>
<td>Access to services increased, less so for poor and vulnerable populations</td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>Improvements due to consistency across TB Screening and Treatment Guidelines</td>
<td>Improvements due to accreditation</td>
<td>Not assessed</td>
<td>Community services weak or limited</td>
</tr>
<tr>
<td>----------------</td>
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<tr>
<td>Reimbursement</td>
<td>Short period for reimbursement to health providers</td>
<td>Delayed reimbursement to DOTS facilities is a key barrier/ disincentive for pursuing accreditation</td>
<td>Not assessed</td>
<td>Not assessed</td>
</tr>
<tr>
<td>Additional Health Service Requirements</td>
<td>Increased administrative responsibilities and capacity building in monitoring and evaluation, data management, coordination</td>
<td>Administration of claims; accreditation process; coordination; accreditation; patient information</td>
<td>Not assessed</td>
<td>Better coordination exists between ESN-PCT and MINSA; long wait time required by EsSalud to</td>
</tr>
<tr>
<td>Health Seeking Behaviors</td>
<td>Some reluctance to seek early diagnosis due to long wait time at hospitals, transport costs, loss of income, and fear of disease</td>
<td>Many persons seeking TB treatment in private sector go to pharmacies to reduce costs; Absence of subsidy for TB patients for transport may lower motivation</td>
<td>Preference for private sector; Absence of TB patient subsidy for transport costs and loss of wages may lower motivation</td>
<td>Persistent registration gaps for lower socioeconomic levels; absence of community services and support</td>
</tr>
<tr>
<td>Coverage</td>
<td>No coverage for non-registered Thais and non-registered migrants</td>
<td>Widespread coverage; targeted towards vulnerable poor</td>
<td>Public sector employees; Other Insurance for low-income populations only includes hospitalization and not outpatient services</td>
<td>Equally available to all; in practice, routinely not accessed by poor and vulnerable</td>
</tr>
<tr>
<td>Coordination</td>
<td>Strong coordination with NTP, improved data sharing needed</td>
<td>Coordination difficult among diverse actors</td>
<td>Limited collaboration with RNTCP</td>
<td>Stronger coordination needed with ESN-PCT, especially for health promotion and outreach and community level</td>
</tr>
<tr>
<td><strong>Linkage with private sector</strong></td>
<td>Services not covered at private health facilities</td>
<td>Private sector integrated into PhilHealth; however, few accredited private facilities</td>
<td>Limited collaboration between the national TB program and the private health sector</td>
<td>Limited coordination with formal private sector (private insurance)</td>
</tr>
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<td>-------------------------------</td>
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</tr>
<tr>
<td><strong>Financing</strong></td>
<td>Government finances TB services for insurance plan measures; Global Fund project provides funding for services for migrant TB patients and some subsidies for other indirect costs</td>
<td>Government finances TB services through PhilHealth; however, 49 privately run TB DOTS centers are either self-sustainable or are able to access private funding</td>
<td>RNTCP is being funded and supported through the World Bank loan, and the Global Fund grants.</td>
<td>Financing comes through various Ministries and coordinating bodies; partial support from Global Fund; monthly contributions from workers/employees</td>
</tr>
</tbody>
</table>

Service quality improved with the introduction of national insurance in Thailand and Philippines due to the introduction of standards for screening and treatment, and accreditation process (for the Philippines). However, the quality of services varied among facility levels in Thailand and provider capability is limited in the Philippines.

Changes in administrative and management responsibilities occurred with adoption of NHI national health insurance in Thailand. Administrative responsibilities and data management shifted from the NTP to managers at the district and health facility levels, indicating that the impact of these additional time commitments should be taken into account in planning for integration with national health insurance. The MINSA in Peru has maintained both a centralized and decentralized approach to TB management/support/supervision. The central NTP unit retains has a key role in coordination with Network level supervisors that check quality and train local staff. The NTP is currently redesigning its national TB strategy to review delivery and support services can be organized. Timely TB data (cohort) for decision making at central level remains a challenge.

Timely reimbursement is a key motivator for service providers as has been seen in studies of fee exemptions for the poor. When program managers do not reimburse health facilities quickly, health providers are often de-motivated and are less likely to provide quality services to patients. While reimbursement of TB service costs has been timely in Thailand, delayed reimbursement to DOTS has been a key barrier in the Philippines.

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20 R Bitran and Ursula Giedion 2003 “Waivers and Exemptions for Health Services in Developing Countries” (Social Protection Unit, Human Development Network, the World Bank) 2003

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Indirect costs were also found to be an important deterrent to TB health seeking behavior, even when primary costs for diagnosis and treatment are covered through the insurance mechanism. In all case studies, the indirect costs of seeking treatment – i.e. fares for transport, loss of wages, nutritional support needs – were reported to be a disincentive for treatment compliance or seeking care through designated facilities for treatment, particularly for vulnerable populations. In Peru, while much progress has been made in increasing the availability of services, the lack of adherence support and coverage for indirect costs was noted as a critical barrier to reaching the most vulnerable patients. This was tied to the need for stronger community-based services overall, especially in the context of improving service delivery for MDR TB patients.

TB patients were reported in many settings to prefer to utilize private services, suggesting that service utilization could be improved if the private sector is included in national health insurance programs. In the Philippines, PhilHealth has included private sector providers in their program, though more is needed to increase the number of accredited private facilities and improve linkages with other providers such as pharmacists. In India, members of the BPL insurance programs seek care in alternately the RNTCP or the private sector, but there are insufficient referral mechanisms or linkages to allow adequate follow up as patients move between sites. In Thailand, the NHSO model focuses strongly on passive case finding approaches, which may contribute to delays in accessing care; in this case, mechanisms to encourage outreach and linkages with other care providers at the community level would be beneficial. In Peru, MINSA has comparably stronger community level services than EsSalud, which relies on passive case finding. EsSalud has demonstrated flexibility in allowing members to use services from other networks, including MINSA and private insurance providers, and contracts out certain services it is not able to provide; this approach could be extended to the community level. Neither program in Peru has formal mechanisms for reaching out to other health providers although pharmacies are a preferred provider for non-registered patients.

Health promotion and communication using mass media, campaigns, group presentations, and interpersonal communication are critical parts of informing the at-risk population regarding prevention and transmission of TB, counseling TB patients during treatment regimen, and informing family members and other contacts of TB patients. Health promotion and communication activities also serve to engage health providers and managers, resulting in increased awareness of the risks and the value of integrating TB prevention and detection in day-to-day consultations and planning processes. In all of the models examined, stronger efforts were needed to develop health promotion channels through the insurance mechanisms, linked to information on how and why patients should register and use in-service providers. Information and awareness campaigns were rarely targeted to close gaps in service provision to TB patients.

The health insurance models discussed in each country are primarily financed jointly through the governments and the Global Fund as well as premiums from users, although TB patients are typically paying for indirect costs - their own transportation and other expenses. Gaps in coverage are often covered through Global Fund projects and NGOs. However, it should be noted that threats to the long term availability of Global Fund resources may place increased pressure on governments to cover TB control costs.
10 Discussion

The four case studies demonstrate that integration of TB services with national health insurance can have a positive effect on access to services and their quality. On the other hand, each of the models assessed impose different types of restrictions which can limit utilization of services. Some restrictions are planned, and are part of the design of the insurance model. Others, however, are indirect or unintended consequences of implementation. As relates to TB, the findings of the assessment have highlighted the need to carefully examine the impact of restrictions in terms of access and use of TB services. In Thailand, the case study found that long wait times at facilities discouraged patients from obtaining services through national health insurance. In the Philippines, the case study found that many patients perceive that they will have to pay direct and indirect costs for TB services in the public sector and prefer instead to seek treatment in the private sector, including pharmacies, to reduce costs.

The primary goal of publicly-supported health insurance programs is to improve access to care for a vulnerable segment of the population and, especially as relates to TB, have the potential to play an important role in improving public health. However, specific objectives for health insurance programs are not typically defined in terms of disease objectives. In countries with significant burdens of key diseases like TB which threaten to jeopardize overall population health (as well as long term growth and development), specific considerations should be made to ensure that the NHI program is designed to be a driving force for controlling the epidemic. The decision to develop and adopt a publically-supported insurance model should ideally form part of broader health systems reform efforts, and the design of the insurance model should therefore include features geared at reinforcing and advancing the country’s health systems strengthening objectives.

An issue which has been faced at different degrees in each country is the separation between the functions of the NTP and the insurance planning and implementation agency. The addition of an insurance program, and possibly other agencies with financing or regulatory functions, adds another level of complexity in terms of planning, organizing, and delivering health services. A key overarching conclusion from the assessment is that strong coordination is needed between health policymakers and program managers to carefully design models for integration of TB services under national health insurance. Careful planning is needed to ensure that all parties understand their roles and responsibilities within the systems and that health providers are motivated to provide high-quality TB services and patients have incentives to utilize the services. A hypothetical
coordination structure presented in Figure 3 outlines some of the “best practice” elements for collaboration between TB partners in an NHI system identified in the assessments. This framework lays out potential roles for NTP, insurance program managers, and other relevant partners depending on the country (employers, NGOs, community partners) taking into consideration issues related to both demand and supply for TB services, including service quality, access to insurance benefits for vulnerable TB patients, and continuum of care for TB services.

There is a high degree of complexity involved in the implementation of a successful UHC system, and one of the outcomes of such an initiative, when implemented well, is to support improvements across the entire health system, rather than vertically building disease-specific programs. However, in countries with a significant burden of infectious diseases such as TB, it is important to demonstrate improvements in disease specific outcomes, and the insurance program should ideally reinforce the adoption of standards for quality services and laboratory protocols, training curricula for diagnosis of TB, including MDR TB strains, service delivery, and administration. To ensure that supply of high-quality TB services is available, the following issues should be considered:

1. Clearly defined objectives for improving TB control should be articulated (i.e., as part of a TB National Strategic Plan), which reflect and reinforce broader health systems strengthening objectives. Standard operating procedures for TB diagnosis, DOTS and inpatient services should be developed/updated so that there is clarity on how to deliver high-quality TB services. These targets and standards should be shared with the national health insurance planning and implementing body to ensure that they are incorporated to the best extent possible in the design of the insurance program (i.e., when defining and targeting key populations for coverage, when defining the benefits package, and when setting accreditation standards).

2. When national insurance programs integrate TB services into their programs, health providers may be given additional responsibilities for TB services in administration, monitoring and evaluation, and data management. In this case it may be important that additional training be provided for the staff. In addition, the impact of additional administrative responsibilities on the time management of program managers at different levels of the health system should be evaluated.

3. It is important that health providers are reimbursed for claims in a timely manner to ensure that they are motivated to provide TB services and are able to maintain adequate infrastructure. If health providers are not reimbursed within a relatively short period, they will become discouraged and less likely to provide the service.

4. Health insurance plans often have gaps in coverage for services, especially for community-level treatment and support services and for MDR TB services. The program managers should evaluate how best to mitigate these gaps in coverage for populations with a TB burden. Insurance programs should be encouraged to develop mechanisms for partnering with other TB providers, i.e. at the community level, to support a continuum of patient care.

5. Motivation to use TB-related insurance benefits will also be increased by the inclusion of TB patient benefits to offset costs associated with travel and treatment at in-service facilities.
Especially in cases where there are restrictions on service sites resulting in increased distances from a patient’s home or work, cost of transport is an important factor in where a patient decides to seek care. The development of structures to provide direct patient benefits or subsidies through an NHI program has not yet been implemented in the countries included in this assessment, but presents an important avenue to explore as a means of increasing access and utilization of TB services as well as to support treatment adherence.

Countries planning to implement/revise national health insurance programs should also consider factors that affect the demand for TB services for patients. These deterrents include: 1) indirect costs of transport and loss of wages; 2) lengthy wait times for services; 3) stigma from being identified as a TB patient; 4) lack of choice of health facilities for TB services; and 5) lack of information on location and times to obtain services (as well as lack of information about TB in general). To ensure that all populations with a TB burden in a country are eligible and motivated to obtain services through NHI, the following issues should be considered:

1. What disincentives exist for health seeking for TB services at in-service providers such as lengthy wait times, long distances to health facilities offering services, and unexpected fees?
2. Are patients encountering stigma when they seek treatment at health facilities?
3. Are all key TB services covered through the insurance package or will the patient need to seek care from multiple service providers?
4. Do TB patients perceive that in-service providers have higher quality TB services and better accessibility than alternative (non-covered) providers?
5. Is information, education and communication (IEC) and social mobilization on the benefits of getting screened and treated for TB sufficient? Is this linked to information on how/why a patient should access insurance benefits?

11 Recommendations for Countries Introducing/Revising integration of TB Service into National Health Insurance

Recommendations for designing/revising the integration of TB service into national health insurance are divided into the following sections: supply, demand, and financing.

11.1 Supply-related recommendations:

1. **Problem:** Protocols for provision of diagnostics, DOTS, and inpatient services are often not clearly understood or implemented by providers and service delivery varies across health system levels and among different types of facilities

Health insurance programs that are integrated with TB services should adopt NTP standard operating procedures for diagnosis, DOTS and treatment, monitoring and evaluation, laboratory analysis, and data management. They should also develop checklists and other tools to facilitate supervision of these
services. The insurance program should develop routine mechanisms for collaboration with the NTP to review implementation of services against standards.

2. **Problem:** Reimbursement of claims for provision of TB services is often delayed and/or inadequate and does not motivate health facilities or providers to offer high quality TB diagnostics, DOTS and other TB services.

Program managers should insure that health providers with TB services are reimbursed in a timely fashion.

   a. When designing reimbursement payments for health providers of TB services, program managers should include costs of administration, monitoring and evaluation, and data management as well as diagnosis and treatment. The NTP or NHI should also commission a cost study to determine the appropriate reimbursement of health facilities and/or providers by the NHI.

3. **Problem:** In-service health providers are often not trained in the provision of TB diagnostics, DOTS, and inpatient services.

Training programs should be designed so that health providers are able to perform their new responsibilities under the program, including administration, monitoring and evaluation, and data management. Structures for integrating on-going capacity building and mentoring, possibly tied to accreditation mechanisms if appropriate, should be explored to support integration of TB within high volume and problem prone services in HBC NHIs to reduce missed opportunities.

4. **Problem:** Responsibilities for management and administration of TB diagnosis and service delivery often shift to district and health facility program managers but they do not always have the training or time to take on these new responsibilities.

Conduct an assessment of additional administrative responsibilities required to integrate TB diagnosis and services at different levels of the health system to determine training needs and personnel time requirements.

5. **Problem:** Some health insurance plans only cover some TB services (e.g. inpatient services) but not the whole package and do not improve detection of TB or its treatment.

If possible, national health insurance programs should include coverage for all TB services, i.e. diagnosis, consultation, DOTS, and inpatient services. If the health insurance is unable to provide all of the services, insurance managers should collaborate with the NTP to ensure the implementation of a strong referral system to ensure detection of TB cases.

6. **Problem:** NHI programs do not sufficiently support services to address the growing burden of MDR TB

MDR TB is a growing concern in many TB high burden countries. As cases of MDR TB increase, there is a need for countries to examine their systems for scaling up access to MDR TB diagnosis, treatment and support services. Currently, MDR TB treatment is most often offered at limited sites directly supported by the NTP; there is a need to explore models for expanding decentralized service provision (i.e., in
tandem with efforts to introduce community programmatic management of MDR TB) and to increase the role that NHI programs can play especially in supporting referrals, ambulatory treatment phases, and patient adherence.

7. **Problem:** Gaps in health insurance coverage exist especially for poor or marginalized populations with a high burden of TB.

The insurance program should coordinate with the NTP (and other programs including the national HIV/AIDS program) to map service needs against the known vulnerable or at-risk populations. Service coverage should be designed to target evidence-based gaps in TB services.

8. **Problem:** Some health insurance plans do not allow patients to seek TB diagnosis or services at private sector facilities even though including these could provide greater access to services

National health insurance managers should try to incorporate private sector facilities into the NHI programs through accreditation or other mechanisms to improve access and coverage levels.

### 11.2 Demand-related recommendations:

9. **Problem:** TB patients often encounter disincentives to seeking care at health facilities such as long wait times or stigma from being in ‘special’ programs.

Patient factor delays or barriers to service utilization can stem from social/community factors (knowledge and perceptions of the disease), health system related factors (barriers such as provider attitudes, which may be similarly present in most health facilities, whether or not they are supported by an insurance program) and factors resulting from the design of the insurance model (i.e., lack of accredited sites or overburdening/ long wait times). A survey of patients should be conducted to evaluate where disincentives for TB service utilization occur and why and the NHI should work with the MOH/ NTP to implement some possible solutions to the issues that were identified.

In recent years a growing emphasis has been placed on moving towards an active case finding approach to close the gap between the number of patients with active TB disease and those who are identified and put on effective treatment. This approach includes a number of interventions including increased screening for TB for patients who present with other related infections or as part of routine health services, tracing and following up contacts of TB patients, and more active household or community outreach to identify suspected TB cases. A current challenge in this regards is the passive approach utilized by many insurance programs to enroll patients. Many of the NHI programs assessed did not have formal mechanisms for coordinating with communities or community-based TB services or linking with health promotion efforts.

a. **Patient- and health system barriers to care:**
   Issues related to identifying and overcoming patient and health system barriers to TB services may fall outside of the direct mandate of an insurance program (i.e., population based

### Box 3. Insurance for workers

A critical issue which was not dealt with in detail in this assessment, but which should be considered when reviewing the design of health insurance models in relation to TB services is the question of protection and compensation of health care workers. Health care workers may be as much as three times more likely to contract TB as the general population (Claasens, 2010). Insurance programs should adopt and incorporate mechanisms to educate and inform healthcare workers around TB risk and infection control, encourage routine surveillance, and provide treatment support including wage protection.
information campaigns to raise awareness on TB); however, many functions can be incorporated within the implementation of the insurance program to reinforce and support these efforts (i.e., mechanisms to inform and educate members about the plan and coverage can also carry information on TB services and the need to seek care). Insurance managers and NTPs should adopt routine mechanisms for identifying and exploiting insurance systems for targeting improvements to patient access to services.

b. Specific barriers to care resulting from the design of the insurance program should be targeted by adopting measures such as i) incorporating patient satisfaction and feedback mechanisms; ii) monitoring numbers of TB patients served and setting targets against estimated number of cases; and iii) identifying areas with high TB prevalence and targeting improvements in access to TB services in these areas (i.e., streamline accreditation of DOTS centers in these locations).

10. Problem: **TB patients are restricted in their choice of health center or hospital to obtain services.**

Attempt to provide a choice of facilities to TB patients or provide other incentives for patients to use the assigned facilities.

11. Problem: **Low-income TB patients sometimes are unable to seek treatment due to the cost of transport and loss of wages.**

The program managers should provide at least partial subsidies for transport and wage loss compensation for low-income TB and MDR TB patients to improve treatment compliance. Insurance programs should actively pursue partnerships with community providers and treatment support organizations in order to provide patients with information and referrals to other support mechanisms.

12. Problem: **Populations with a high incidence of TB sometimes do not know where to seek services and the benefits of diagnosis and treatment.**

NHI should assist in the design of an IEC/social mobilization campaign to publicize the benefits of getting diagnosed and treated for TB patients and information on locations and times to obtain services, in coordination with other TB partners including community partners, advocates, employers, and the NTP.

11.3 **Financing-related recommendation:**

13. Problem: **Government financing of TB services, especially MDR TB services, is sometimes inadequate and financed through external partners such as the Global Fund and NGOs.** As funding levels change and donor support may be reduced, long term sustainability for provision of TB and MDR TB services and treatment for vulnerable population needs to be addressed.

Over the medium- and long-term, managers of national health insurance in high burden countries need to develop plans to take over the financing of these services to ensure that TB diagnosis and treatment services are continuous.
11.4 Public and patient education

14. Problem: NHIs do not conduct public or active patient education

TB-specific marketing channels should be explored, targeting information on how to use the insurance service package to high-risk TB populations, and linking messages regarding utilization of TB services to health promotion messages designed to raise community awareness of TB disease. Coordination should be sought with local government units, community-based TB partners, NGOs and others who are providing TB related information at the community level to integrate information on how patients may access and use insurance benefits.

11.5 Metrics and Measurement

15. Problem: NHIs do not currently have capacity or interest to track efficacy in providing TB and MDR TB services

Strengthening capacities to demonstrate improvements in disease specific outcomes as a result of an NHI program has a potential significant effect on increasing utilization rates. Stronger coordination between the NHI program and the MOH/NTP to track and share TB data has the potential to reinforce patient information programs regarding the benefits of accessing insurance membership, as well as further increasing the funding pool to support service provision as additional members seek services. Improving data tracking and sharing for TB indicators will also assist the insurance program and the MOH/NTP to promote improved planning for delivery of TB services, training of service providers, and to identify necessary changes in the benefits package.

12 Framework for Cost Analyses of TB Service Integration in Health Insurance Programs

This framework outlines the costs associated with integration of tuberculosis services into health insurance programs. Some assumptions made in this framework are the following: 1) TB service coverage can be increased through integration into national health insurance if access to services improves, especially for vulnerable populations; and 2) more patients would utilize TB services if the insurance covers some of the costs to the patients as well as service costs. The sections below are designed to assist insurance planners and MOH/NTP decision makers to evaluate the potential for expansion of TB services covered under the insurance model (either the package of services covered or the scope of coverage to key population groups).

When calculating costs, the planner has to decide if they would like to calculate incremental or total costs of introducing TB services. If s/he is conducting a cost-effectiveness or cost-benefit analysis of integration with national health insurance, an incremental cost analysis should be done. That is, if integration is being compared to no integration, it is preferable to use incremental costing. The advantage to this type of costing is that the increase in the value of resources for integration over other scenarios can be calculated and compared.
If the planner/researcher is doing a cost analysis to evaluate the costs of integration for planning purposes, s/he may instead want to conduct a total cost analysis. This type of costing will allow the planners to estimate the value of all resources that will be employed for integration with TB services. Shared costs, or the proportion of resources that are shared with other resources, are estimated as part of total costs. For example, shared costs include the value of health personnel time or building space.

The planner then needs to decide which resources are likely to be covered under insurance and which have other sources of financing (e.g. TB patient). This information will determine which data need to be collected from different sources for the cost analysis. Also, calculation of some costs may not be required, depending on the objective of the analysis. If the salary costs of health workers are covered by the government and not through the insurance, then the calculation of the value of personnel time may not be needed for the analysis. The calculation of patient costs will be necessary if these are likely to be reimbursed or analyzed for their impact on compliance to treatment.

Both financial and economic costs are calculated for cost analyses. If the researchers are only interested in estimating or projecting the financial outlay needed by the Ministry of Health to integrate TB services with national health insurance, then they may prefer to use the financial cost calculation. Financial costs are the value of resources to the payer and would include the value of actual resources used for the integration. This type of analysis is useful in assessing the affordability of TB service integration with NHI to the government. This analysis would not require the calculation of the value of donated goods and services such as MDR TB drugs.

Economic costs comprise the value of all outlays for the integration that have been paid for by the MOH or other sources of financing and includes the value of all goods and services that have been donated. For instance, the full value of subsidized or donated MDR TB drugs, the value of health worker and volunteer labor would be included in the cost estimates. Such an analysis gives a more complete picture of all the resources that are tied up in TB service integration with NHI and captures their opportunity cost. Economic costs are used in cost-effectiveness and cost-benefit analysis. Economic costs may be used by governments and donors to evaluate sources of financing for introduction, as well as for evaluating program sustainability and health system requirements.

The impact of integration of TB services into insurance on service costs can be divided into four components: 1) diagnosis, 2) treatment, 3) DOT/Follow-up, and 4) social support (see Table 8).

12.1 Diagnosis

For diagnosis, the cost of the most common type of test – sputum microscopy – is usually offered at no charge to the patient. The cost for this test will be incurred at the service level and is usually financed through the National TB Program. To provide diagnostic tests, the value of the following cost components need to be assessed: health worker time for specimen collection and preparation for transport to the referral laboratory, health worker time spent registering patient, supplies for sputum collection and recordkeeping, transport of the specimen, laboratory worker time, laboratory supplies, fuel and maintenance of laboratory equipment, laboratory equipment, and supervision.
The number of diagnostic tests that will be needed when TB services are provided under NHI will depend on assumptions made on the impact of the integration on utilization of service. Thus, the researcher/planner should estimate the number under various scenarios. For example, some possible scenarios would be 1) no change in utilization; 2) a ten percent increase in utilization; and 3) a twenty percent increase in utilization. They should also estimate the wastage factor.

### Table 8. Impact of TB Service Integration with Insurance on Service and Patient Costs

<table>
<thead>
<tr>
<th>TB Service</th>
<th>Cost Components</th>
<th>Impact of Insurance on Service Costs</th>
<th>Impact of Insurance on Patient Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sputum Microscopy</td>
<td><strong>Service:</strong> Health worker time for diagnostic time and for registration, laboratory worker time, specimen collection supplies, laboratory supplies, laboratory equipment and running costs, stationery, supervision</td>
<td>- Test already offered for free in most countries</td>
<td>- No change for transport and loss of wages unless insurance provides a subsidy to TB patients.</td>
</tr>
<tr>
<td>Chest X-Ray</td>
<td><strong>Patient:</strong> charges for diagnostic tests, transport, loss of wages, other (e.g. food)</td>
<td>↑ in services if NHI covers patient charges for X-Rays</td>
<td>↓ if NHI covers patient charges for X-Rays</td>
</tr>
<tr>
<td>Culture/sensitivity</td>
<td></td>
<td>↑ in services if NHI covers patient charges for culture/sensitivity tests</td>
<td>↓ if NHI covers patient charges for culture/sensitivity tests</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First line drugs</td>
<td><strong>Service:</strong> Health worker time, drugs, supplies for recordkeeping, cost of bed time in hospital (for inpatient care), supervision</td>
<td>- first-line drugs usually provided free of charge</td>
<td>- no impact for first-line drugs since already covered in most countries</td>
</tr>
<tr>
<td>Second-line or MDR-TB drugs</td>
<td></td>
<td>↑+ impact unclear for second-line drugs since depends on whether drugs are routinely available and reimbursable</td>
<td>↓ cost of second-line drugs if covered by insurance</td>
</tr>
<tr>
<td>Inpatient Care</td>
<td><strong>Patient:</strong> transport, loss of wages, other (e.g. food)</td>
<td></td>
<td>- ↑ could increase if MDR TB drugs are only given out at certain hospitals</td>
</tr>
<tr>
<td>DOT/Follow-up</td>
<td><strong>Service:</strong> Health worker time, supplies for recordkeeping</td>
<td>↑Increase in number of services provided if case detection improves</td>
<td>- already covered</td>
</tr>
<tr>
<td>Social Support</td>
<td><strong>Service:</strong> Health worker or community agent time, food or other type of support</td>
<td>↑ costs for nutritional and other types of support</td>
<td>↓ costs to patient if nutritional support and other assistance given</td>
</tr>
</tbody>
</table>

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To increase vulnerable populations’ access to TB diagnostic tests, the insurance provider may choose to provide reimbursement for their expenses for transport, loss of wages, or provide testing at workplaces or other places near their homes. In the scenario where the expenses are covered under insurance, these costs would shift from the vulnerable patient to the insurance provider and would need to be included in the cost analysis as part of total service cost.

While sputum microscopy is usually offered without charge, facilities offering other TB diagnostic tests such as chest X-ray and culture/sensitivity tests sometimes charge fees to patients. If patients pay for these tests, the cost of the service incurred by providers is lower since patients are paying for a proportion of the costs. On the other hand, if the costs are covered by the NHI, then diagnostic costs would be shown as part of the costs to the provider.

### 12.2 Treatment

For treatment of TB patients, first-line treatment drugs are usually provided free of charge in most countries. Thus, the costs of the drugs is incurred at the facility level and/or paid for by the National TB Program. In some countries, second-line or MDR TB drugs are provided through the NTP or NHI but in other cases, the costs would be incurred by an external donor or the patient. Depending on whether the cost is incurred by the NTP, NHI, an external partner or the patient, the cost analysis would allocate this expense accordingly.

The cost of each drug is calculated through determining the dosage of the drug per patient per day, the number of days given, and the unit cost of the drugs. Other costs for treatment include health worker time — i.e. time of the nurse, pharmacist or other health worker dispensing and registering the service, supplies used for drug dispensation, recordkeeping, and supervision.

The number of patients requiring treatment would be estimated using various assumptions as in the case of diagnostic tests – the percentage expected to have TB, the percent likely to seek services, and likelihood that more people would seek services at the health facilities rather than other venues.

For inpatient care, the cost of a bed day at the hospital should be assessed. An estimate of the cost of a bed day is available through WHO Choice if a local study is not available. The cost of inpatient care can be calculated with information on the cost of a bed day, the average number of days spent in the hospital, and the cost of the drug regimen and other treatments (e.g. IV) for the patients.

If the program wants to reimburse patients for their indirect costs to the patient, the expenses incurred for their transport, loss of wages from work, and other expenses should also be calculated. In addition, it is possible that second-line drugs will only be available at certain facilities. In that case, the patient will incur additional transport costs since they would have to travel to the MDR TB facilities.
Thus, the cost analyst should assess whether there will be restrictions on where and when services will be conducted and how this will affect access by patients.

Other administrative or managerial costs may be incurred if the administration of TB services is decentralized and shifted to the local levels. The time spent by managers managing the program should also be calculated.

12.3 DOT/Follow-up

TB patients generally are followed up with Directly Observed Treatment (DOTS). During DOTS, patients come to the community or health clinic and are observed while they are taking their drugs. The costs incurred with DOTS are health worker or community agent time and supplies for record keeping. If the program is able to increase the case detection, then the number of persons being followed-up through DOTS will increase and total costs for this service would increase.

For the cost analysis, the researcher/planner would need to estimate the time of the health worker spent on each DOTS service, supplies needed for DOTS. If they would like to estimate patient costs, they should collect information on travel costs, loss of wages, and other expenses.

12.4 Social Support

Some types of social support that are offered to TB patients are nutritional, counseling and other types of support. To estimate the cost of this support, the analyst should value the time spent by the community agent/social worker, food provided and other commodities and supplies provided for the patient.

12.5 Public and Patient education

In order to promote utilization of insurance benefits, resources for marketing and patient information should be designated. Linkages to existing patient and public information channels should be sought as a cost-effective means of reaching patients and to reinforce existing messages on TB. These messages may focus on how and why a suspected TB patient should seek care through the insurance program.
13 List of References


Claasens, Mareli, “Tuberculosis in Healthcare Workers- Report to the Department of Health” 2010. Desmond Tutu TB Centre (DTTC), Stellenbosch University; USAID South Africa TB Program.


O’Connell, Thomas, National Health Insurance in Asia and Africa, UNICEF 2012


World Health Organization. TB in South East Asia. 2012. [www.searo.who.int/en/Section10/Section2097/Section2100_106]
