# ASSESSING THE PERCEIVED QUALITY OF CARE IN MDR TB TREATMENT SERVICES IN JAKARTA, INDONESIA

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**Indonesia**

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Vrije Universiteit Amsterdam

**Assessing the Perceived Quality of Care in MDR TB treatment services in Jakarta, Indonesia**

A thesis submitted in partial fulfilment of the requirement for the degree of the Master of Public Health
By Jhon Sugiharto, Indonesia

Declaration:
Where other people's work has been used (either from a printed source, Internet, or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.

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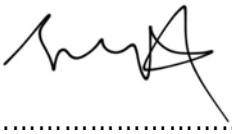

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## Abstract

**Introduction:** Assuring quality of MDR TB care is essential to ensure high treatment outcome. The MDR TB program in Indonesia is struggling with poor treatment results. So far, not much research has been done on the quality of care of MDR TB services particularly from the patient's perspective.

**Objectives:** To assess the quality of MDR TB care services in hospital and health centres in Jakarta from the patient's perspective.

**Methodology:** Literature review, interviews with patients and providers and focus group discussion with patients using a mix of qualitative and quantitative methods.

**Findings:** MDR TB patients in Jakarta from their perspective feel that support (financial support for visiting Health Facility), availability of services, interaction between provider and patients, and communication and information are the most important issues hampering quality of care. Patients treated at the hospital and health centres had different perceptions on quality of MDR TB care for four quality dimensions: support, communication and information, infrastructure and professional competence. We also found that providers and patients have quite different views on defining and ranking important quality dimensions.

**Conclusions:** Information about the patients' satisfaction regarding overall service provision and addressing the needs from the patient is crucial for success and optimal impact of the program.

**Recommendations:** In order to address the needs of MDR TB patients based on their perception of quality of care we recommend including and implementing patient centred approaches in Indonesia and integrating these approaches in the operational plan for PMDT expansion.

Keywords: tuberculosis, MDR TB, quality of care, treatment adherence, and Indonesia.

Word Count: 13,091

## List of Abbreviations

| | |
|---|---|
| AIDS | Acquired Immune Deficiency Syndrome |
| C | Culture test |
| CDC | Communicable Disease Control |
| CET | Clinical Expert Team |
| DALY | Disability-Adjusted Life Year |
| DOT | Directly Observed Treatment |
| DOTS | Directly Observed Treatment Short course |
| DRS | Drug Resistance Survey |
| DST | Drug Sensitivity Test |
| FGD | Focus Group Discussion |
| HC | Health Centre |
| HIV | Human Immunodeficiency Virus |
| ICHD | International Course in Health Development |
| IDI | In-Depth Interview |
| ISTC | International Standards for Tuberculosis Care |
| KIT | Royal Tropical Institute |
| KNCV | Royal Netherlands Tuberculosis Association |
| MDG | Millennium Development Goal |
| MDR | Multi Drug Resistance |
| MOH | Ministry of Health |
| MPH | Master of Public Health |
| NGO | Non-Governmental Organization |
| NTP | National Tuberculosis Program |
| PLHIV | People Living with HIV/AIDS |
| PPP | Purchasing Power Parity |
| PMDT | Programmatic Management of Drug-Resistant Tuberculosis |
| QI | Quality Impact |
| QUOTE | Quality of Care as seen through the Eyes of the Patient |
| SPSS | Statistical Package for the Social Sciences |
| TB | Tuberculosis |
| TBCTA | Tuberculosis Coalition for Technical Assistance |
| THE | Total Health Expenditure |
| UNDP | United Nations Development Program |
| UPIC | Unique Patient Identification Code |
| USAID | United States Agency for International Development |
| WHO | World Health Organization |

## Introduction

I am a medical doctor, who was born, lived and worked in Indonesia. I have been working in the public health area since I graduated from medical school ten years ago. Most of my career time was involved in the communicable disease control particularly in TB control for more than seven years. So far, I have always worked in NGOs in the project management which gave me the opportunity to balance provision of technical services with monitoring project implementation and impact.

This study was inspired by my involvement as the Program Manager of an external aid funded project of which one of the important objectives is to support NTP of Indonesia to establish access to second line TB drugs for the drug resistance patients through PMDT. This project was started in August 2009 in two hospitals as treatment centres which now have been expanded to six centres. A huge amount of resources has been allocated to ensure MDR TB patients can be treated, from ensuring that the health facilities are well equipped, providing supplies, conducting training for the health workers, monitoring and evaluation system, to support to patients for enabling them to access the services. Currently MDR TB program in Indonesia is struggling with poor treatment results. MDR TB is a real challenge for NTP as well as for the patients, due to the long duration of treatment, many drug side effects, rather centralized approach and the way of integrating the approach into the existing health system. As the provider of TB control services, we think that all the efforts will reach the patients effectively and that these adequately respond to their needs. But that is not always the case as patients may have their own opinion and perspectives towards the services they are receiving.

For this reason, I was eager to understand the patient's perspective on the quality of MDR TB services provided during these 2-3 years of PMDT implementation. What are perspectives of MDR TB patients that do not match with program approaches? How can we make MDR TB program more responsive to the needs of patients in order to improve treatment outcome?

Thesis outline

The next chapter commences with the background information of the country, health situation and tuberculosis control program in Indonesia. Chapter Two describes the problem statement, objectives and methodology of the study. Chapter Three explains the current situation of MDR TB control in Indonesia, and explores the theoretical and applied part of perceived quality of care. Chapter Four presents the results from the field study. Chapter Five discusses identified gaps between current response of program and the study's findings. Finally, the last chapter concludes the thesis and explores the possibilities of further directions.

# Chapter 1: Background Information

## 1.1. Geographical, Demographic, and Economic information

Indonesia is located in Southeast Asia and is the largest archipelago country in the world with approximately 17,000 islands. The land area is about 1.9 million square kilometres and more than 80% of the territory is covered with water. It has a total population about 230 million people (CBS-ROI, 2010A) with a very diverse people, culture, and nature from the west to the eastern part of country.

The structure of the population in Indonesia has a large proportion of young people and an increasing number of elderly persons. In the year 2010 around 26.9% were in the age group of 0-14 years, 67.9% were in the age group of 15–64 years and 5.2% were in the age group over 65 years (CBS-ROI, 2010A). Indonesia is categorized as a low middle income country with gross national income 3,600 per capita (PPP international $) (WHO,2010B). The adult literacy rate is estimated at 93%. The proportion of people living in poverty has declined from year to year to 12.5% in 2010 (CBS-ROI, 2010B).

## 1.2. Administrative Structure

Indonesia is administratively divided into 33 provinces and 497 districts (CBS-ROI, 2010A). Decentralization was implemented in 2001 when districts were given authority in prioritizing sectors for development. In many districts the health sector has less priority and and a low budget. As a consequence, some health problems, such as TB, do not get enough attention. This also has an impact of the effectiveness of the implementation and results of health programs (Heywood and Harahap, 2009).

## 1.3. Health Situation

Life expectancy has shown improvement over the last three decades, going from 57.6 (1980) to 69.4 (2011) (UNDP, 2011). The maternal mortality ratio showed a decline from 307 in 2002 to 228 per 100,000 live births in 2007 which may have been influenced by improvement of health care, socioeconomic situation and education. The infant mortality rate (IMR) showed a slight decline from 35 in 2002 to 34 per 1000 live births in 2007 (MOH-ROI, 2011A).

With the improvement of socioeconomic conditions, Indonesia is in an epidemiological transition: the country is now facing a double burden of communicable diseases and increasing prevalence of non communicable diseases such as cardiovascular diseases, metabolic disorders and cancer (MOH-ROI, 2010A). Communicable diseases such as TB, diarrhoea, malaria, and HIV/AIDS are still a major cause of morbidity and mortality in Indonesia but with the changing of age structure, disease patterns have shown a shift to non communicable disease and injuries (MOH-ROI,

2011A). Table 1 and Table 2 below indicate that amongst communicable diseases tuberculosis is one of the top leading causes of disease and death in Indonesia (WHO, 2009A). However government has put attention in controlling TB as shown in the MDG report in 2010. The MDG target indicators for halving the prevalence of TB and mortality due to TB by 2015 have been achieved (MOH-ROI, 2010B).

**Table 1: Top ten causes of burden of disease in Indonesia in 2004 based on DALYs lost**

| No | Diseases | DALYs |
|---|---|---|
| 1 | Ischemic heart disease | 2,571,000 |
| 2 | **Tuberculosis** | **2,562,000** |
| 3 | Road traffic accidents | 2,364,000 |
| 4 | Unipolar depressive disorders | 2,111,000 |
| 5 | Lower respiratory infections | 2,080,000 |
| 6 | Maternal conditions | 1,914,000 |
| 7 | Birth asphyxia and birth trauma | 1,249,000 |
| 8 | Cerebrovascular disease | 1,249,000 |
| 9 | Hearing loss, adult onset | 1,235,000 |
| 10 | Diarrhoeal diseases | 1,169,000 |

**Source:** DALY estimates for 2004 by cause (WHO, 2009A)

**Table 2: Top ten causes of deaths in Indonesia in 2008**

| No | Diseases | Number of deaths |
|---|---|---|
| 1 | Ischemic Heart Disease | 243,000 |
| 2 | Lower respiratory infections | 171,300 |
| 3 | Cerebrovascular disease | 138,300 |
| 4 | Chronic obstructive pulmonary disease | 82,500 |
| 5 | **Tuberculosis** | **69,200** |
| 6 | Diabetes mellitus | 48,300 |
| 7 | Road traffic accidents | 48,100 |
| 8 | Hypertensive heart disease | 43,800 |
| 9 | Lung cancer | 35,200 |
| 10 | Diarrhoeal diseases | 30,300 |

**Source:** Death estimates for 2008 (WHO, 2009A)

## 1.4. Health System

Health Services

Health services in Indonesia are organized in five levels: central, provincial, district, sub district and village (WHO, 2007) as illustrated on right:

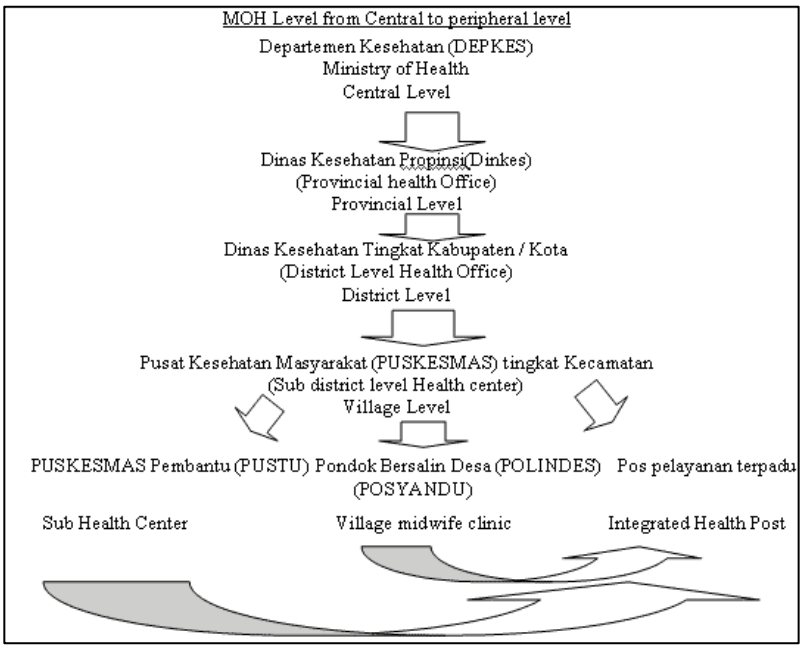



**Figure 1: Organizational structure of health system (WHO, 2007)**

Health Facilities

Healthcare services are provided by primary health centres, public hospitals, private sector healthcare facilities and private practices. In 2010, some 9005 primary health care centres located in sub-districts provided maternal and child care, family planning and curative in-patient and outpatient services to the community, as well as communicable disease control services. The ratio of health centre to population is 3.9 per 100,000 of the population. The Basic Health Research in 2007 revealed that 94% of the people have good access to health care facilities within less than five kilometres (MOH-ROI, 2011A). Curative services are provided by 1,632 hospitals, which consist of 1,299 general hospitals and 333 specialty hospitals (MOH-ROI, 2011A). The hospitals are under various management systems such as by the Ministry of Health, provincial government, district/ municipality governments, military/police, other ministries/state - owned enterprises and the private sector. This situation creates a challenge for the program to ensure a strong partnership and network among different providers in order to provide a better care for patients.

In 2010, the Ministry of Health issued a new Health Strategic Plan 2010-2014 emphasizing the new vision of self-reliance and fairness in healthy communities and its mission to enhance health status by implementing community empowerment involving private sector and civil society, to prevent and overcome health problems (MOH-ROI, 2010A).

Health Care Financing

Total health expenditure (THE) is 2.6% of GDP, and 50.9% of THE is from the private sector and about 75% comes from out of pocket expenditure (WHO, 2010B). For instance in the TB or MDR TB control programs, government has covered some of the expenditure such as free drugs but

patients still have to pay a lot out of their pocket. As part of decentralization policy, district government plays a big role in allocating budget for health sector. The district/municipality health offices develop annual plans based on their local priorities and in line with the Ministry of Health Strategic Plan to be submitted to the respective district government. The allocation of expenditures is decided by district government with an approval from district parliament(World Bank, 2007).

According to data from MOH, 63% of the population have health insurance. The largest part is covered by National Community Health Insurance (Jamkesmas), and followed by Provincial and District Community Health Insurance (Jamkesda), Health Insurance for civil servants and military (Askes), private health insurance and Social Insurance of employee (Jamsostek) (MOH-ROI, 2011A).

Health Work Force

The Ministry of Health has important role in the provision of health personnel. MOH has health training units to ensure that a sufficient number of skilled health personnel are distributed adequately across the country. However the distribution is still concentrated in the most populous islands and urban areas. There are wide gaps in the number and ratio of health personnel per population between urban and rural areas (MOH-ROI, 2011A).

## 1.5. Tuberculosis control in Indonesia

Tuberculosis is still one of major health problems in Indonesia. Indonesia ranks fourth on the list out of 22 high burden countries for tuberculosis with an estimated 450,000 TB patients (all forms of TB) and 5,100 MDR TB cases per year (WHO, 2011D). Nationally, Indonesia has still a low prevalence of HIV with concentrated epidemics in several provinces. The national estimation of HIV prevalence among the adult population was 0.2%. The estimated HIV prevalence among new TB cases is 3%. TB is the highest opportunistic infection found among PLHIV (WHO, 2011B).

A TB control program with Directly Observed Treatment Short course (DOTS) strategy was introduced by Ministry of Health only in 1995. The TB control services are fully integrated into the existing health services system in which District Health Offices are the basic management unit of TB control. After rapid expansion since the year 2000 the DOTS strategy has been implemented through almost all Health Centres (98%) but less than 40% of hospitals have adopted DOTS. In 2006, Indonesia reached the Global TB target with a case detection rate of more than 70% and a treatment success rate of more than 85% (MOH-ROI, 2010B).

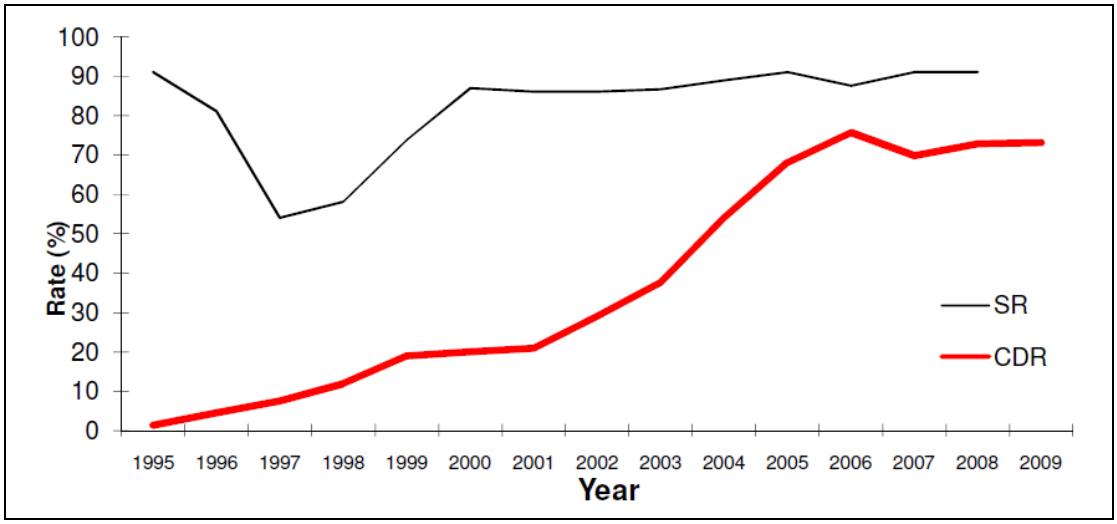



**Figure 2: Achievement of the National TB program, 1995-2009 (MOH-ROI, 2010B)**

Despite good progress and achievements of the National TB control program, the program is facing new challenges regarding emergence and spread of multi drug resistant (MDR) TB. A recent drug resistance survey (DRS) in the Mimika district in the Papua province in Eastern Indonesia showed that MDR TB cases occur in 2% of new TB cases. A DRS in Central Java province in 2006 showed that 1.8% among the new TB cases and 16.7% among re-treatment TB cases are MDR TB cases (WHO, 2011C).

## Chapter 2: Problem statement, objectives and methodology

### 2.1. Problem Statement

Patient's perspective on quality of care is important to know for getting a better understanding and for adequately meeting their needs, addressing barriers to services and for assuring successful treatment and cure. This should be done by creating a positive environment for patients and facilitating adherence and compliance (TBCTA, 2007). Furthermore, involving patients in assessing the quality of TB care is in line with the Global Stop TB Strategy which is meant to empower people with TB, and communities through partnership (Stop TB Partnership, 2011).

Among the 20 MDR TB patients enrolled in 2009, we found a treatment success rate of 65%, a default rate of 15%, a death rate of 10% and a failure rate of 10% (NTP, 2012). This treatment outcome is probably the result of the various challenges encountered in the start-up of the PMDT program where treatment was mainly centralized in hospitals. When looking in the literature or studies tackling this problem we see in a study that in Peru a treatment success rate of over 80% was reached (Shin *et al*., 2004; Mitnick *et al*., 2003). NTP tried to improve the situation by revising the PMDT strategy to decentralize treatment to Primary Health Centre, at the same time realizing that ensuring quality of care remains of major importance. Moreover NTP plans to do rapidly scale up treatment to 5100 MDR TB patients by 2014 (MOH-ROI, 2010B). The process of scaling up needs to be based on rational strategies for quality improvement in order to gain the best possible results from new interventions (WHO, 2006).

### 2.2. Justification of the study

Assuring quality of MDR TB care is essential to ensure high treatment outcomes. The treatment with second line anti TB drugs has more serious side effects and has a longer duration of 18-24 months compared to first line anti TB drugs (WHO, 2009B). If quality of care is not good, the outcome of treatment will be affected and will increase the risk of treatment failure (Mesfin *et al*., 2009). There are several studies done and tools for measuring quality of care are described in the literature such as QUOTE and some other tools (Silva 2000). QUOTE TB Light is a tool developed by TBCTA partners including KNCV and KIT for measuring the quality of TB care from patient's perspective. The tool has been piloted in Kenya, Malawi and Uganda (Massaut *et al*., 2009).

So far, not much research has been done on the quality of care of MDR TB services particularly from the patient's perspective. Secondly the MDR TB program in Indonesia is struggling with poor treatment results. Therefore, this research intends to explore perceptions of MDR TB patients on the quality of the care they receive. The study explores the following questions: What is the most important dimension of quality for patients

regarding MDR TB services provided to them? Do patients perceive a difference in quality of care in Health Centres than in Hospitals? These are the questions that this research seeks to answers. Moreover, the results of the study will help NTP, to redirect its policies and strategies for scaling up of PMDT.

## 2.3. Objectives

### 2.3.1. General objectives

To assess the quality of MDR TB care services in hospital and health centres in Jakarta from the patient's perspective in order to give the health services insights in the quality of MDR TB care as perceived by patients and give recommendations on developing specific interventions to improve the quality of care for MDR TB patients and make TB services more responsive to the needs of patients.

### 2.3.2. Specific objectives

There were four specific objectives for this study:

a. To describe the current situation of MDR TB control in Indonesia focusing on perceived quality of care
b. To assess the performance of services as experienced by MDR TB patients in hospital and in health centre settings in Jakarta based on various quality dimensions
c. To identify the gaps between current response of the program and the study's findings
d. To make recommendations on developing specific interventions to improve the quality of care for MDR TB patients

## 2.4. Methodology

### 2.4.1. Study design

This study was an observational cross-sectional study. The methods included literature review, interviews with patients and providers and focus group discussion with patients. The study used a mix of qualitative and quantitative methods.

The literature search was done using search engines of PubMed, KIT Library, and Scopus. Other websites such as that of the Ministry of Health of the Republic of Indonesia, WHO, KNCV, TBCTA, UNDP and World Bank were also used to complete this study. The keywords used in the search were TB, MDR TB, Indonesia, quality of care, and treatment adherence. Combinations of keywords were used to limit the number of articles to reach needed information. Only articles published in English and Bahasa Indonesia languages over the last decade (2000 to 2011) were considered.

### 2.4.2. Data collection tools

Data collection tools included structured questionnaires for the patient survey, topic guides for in-depth interview with providers and topic guides for focus group discussion with patients. These tools are described below.

Patient survey

A patient survey was used to assess the performance of services as experienced by MDR TB patients based on various quality dimensions using standardized questionnaires described in the QUOTE TB Light tool (Massaut *et al*., 2009). Sections covered in this questionnaire were patient's demographics, medical aspects of TB (when they were diagnosed, length of treatment, etc), and perceptions on the nine quality dimensions: communication and information, patient provider interaction and counseling, stigma, professional competence, availability of TB services, affordability, support, TB/HIV relationship and infrastructure. The performance assessment was based on the nine quality dimensions specific to TB services. The performance scores were calculated from the responses on the individual performance assessment interviews. As described in the QUOTE TB Light tool, the performance score presented the proportion of negative answers (total negative answers/number of respondents). A higher performance score means that a large percentage of respondents interviewed provided negative responses and therefore the health facility is performing poorly.

Focus Group Discussion

Focus Group Discussions (FGDs) were conducted to explore the perceptions of patients with respect to good quality MDR TB care. The topic guides covered introduction to participants, current view of the health care services, important aspects of health services, and areas relevant for patient centred health care. During FGDs, the participants ranked nine quality dimensions (communication and information, professional competence, availability of services, affordability, patient provider interaction and counselling, TB/HIV, support, infrastructure, and stigma) in order to measure (allocate weights to) the importance of quality dimensions. A nine pictogram card (Massaut *et al*., 2009) was used to remind participants of the quality of care. The ranking score of each dimension was used in the quantitative part (i.e. the patient survey) to measure the Quality Impact scores. The Quality Impact scores are calculated by multiplying the importance/ranking scores by the performance scores.

In-depth Interview

An in-depth interview method was used to explore the provider's view on their patients' perception on quality of MDR TB care. This method was selected in order to anticipate reluctance of providers to openly mention their real perceptions and ideas in a group due to fear of judgment by their colleagues. The topic guide covered current view of the health care services, important aspects of health services, and suggestions for

making healthcare services more patient-centred. Providers were also asked to rank nine quality dimensions (communication and information, professional competence, availability of services, affordability, patient provider interaction and counselling, TB/HIV, support, infrastructure, and stigma) based on their view on their patients' perception on quality of MDR TB care.

### 2.4.3. Planned Samples

Health Facilities

Originally this study was planned to be conducted in the Persahabatan hospital and five health centres in Jakarta, the capital city of Indonesia, which has been involved in MDR TB services since the PMDT program started in 2009. However based on the recent PMDT report in May 2012 (NTP, 2012), the number of patients in these five health centres was not sufficient to provide the minimum number of samples. We included therefore all hospitals and health centres providing MDR TB care services in Jakarta province, which covered one hospital and 15 health centres in five municipalities of Jakarta. The inclusion criterions for a health facility in this study were having patients on treatment with an age of $\geq$ 19 years and having a history of at least three weeks being treated at the facility or facility being involved in PMDT since 2009. Overall, 14 health facilities, both hospital and health centres, met these criteria (see Annex 3 List of Health Facilities).

Patient survey

For the patient survey, a systematic random sampling was used given that a complete list of all registered MDR TB patients was available and the fact that all patients were expected at the facility on a daily basis. A list, comprising only of all eligible patients for this study (excluding patients under the age of 19 years, patients who had passed away, patients that are on treatment for less than three weeks, and patients who participated in FGD) was compiled by health staff and the principal investigator for the hospital and health centres. The list distinguished between males and females in order to ensure probability proportional to size selection of males and females. We planned to interview 116 patients, 58 patients from hospitals and 58 patients from Health Centres. This figure was attained as follows: 65% as an estimate of the variable of interest, 80% power, significance level of 0.05 (5%), margin of error of 10% and a population size of 170 (total number of all MDR TB patients in Jakarta) to calculate the required sample size of 58 (see http://www.raosoft.com/ samplesize.html). As we wanted to compare the performance of hospital and health centres, 58 patients from both were selected. MDR TB patients who defaulted from treatment were also included whenever possible.

Focus Group Discussion (FGD)

In order to explore the perceptions of patients with respect to good quality MDR TB care we planned to conduct four focus group discussions: two groups of 6-12 patients from hospital and two groups of 6-12 patients from health centres. Purposive homogenous sampling was used to select patients for the focus group discussion to ensure adequate numbers (6-12 participants). The participants were selected from the treatment registers in the Persahabatan hospital and in one Health Centre. Inclusion criteria were similar to those above (at least three weeks on treatment in the MDR TB treatment facility and age above 19 years old). In order to increase participation and ensure that participants feel comfortable during the discussion, we planned to conduct FGD separate for men and women.

In-Depth Interview (IDI)

The In-Depth Interview with health providers was planned in the hospital and in five health centres which were involved in the program since 2009. The health providers included doctors and nurses who provided services to MDR TB patients. The doctors and nurses were recruited purposively. We planned to interview 12 health providers; one doctor and one nurse from the hospital and 10 doctors and nurses from health centres (one doctor and one nurse from each Health Centre).

### 2.4.4. Data Collection

Three research assistants/data collectors who are experienced in data collection– two doctors, and one public health bachelor- and one data manager were trained and employed for this study. A two-day training session for the data collectors included updating MDR TB knowledge, reviewing and mastering the content of the data collection instruments, and the procedure to obtain informed consent from respondents. Before starting the data collection, we did pre-testing of the topic guides and questionnaires to assess whether all questions were understood by the respondents and were seen as appropriate. We did pre-testing of instruments by interviewing two MDR TB patients (one in hospital and one in a health centre) and two providers (one from hospital and one from health centre) to test, clarify and validate the instrument over a period of three days. We used the information of the pre-testing to revise the topic guides and questionnaires.

Data of the patient survey were collected using a standard questionnaire form. Data were entered using EpiData, a free data entry software program. Upon returning from the field, the Principal Investigator together with the data manager checked all the questionnaires for accuracy and completeness. All the questionnaires were scanned to back up the data, and saved in a password protected folder.

During the FGD and IDI, notes were taken and a voice recorder was used subject to individual consent. One back up voice recorder was prepared in

case needed. All the FGDs and IDIs were transcribed and translated by the research assistants during the data collection in the field and rechecked by the principal investigator to ensure completeness of data.

### 2.4.5. Data Management and Analysis

At the office of the author, all files of each data collection instrument were combined into a single database. Data cleaning involved reviewing the number of facilities and respondents represented in each database and reviewing ranges for implausible values and means. All the transcriptions were kept anonymous and stored in a password protected computer. All participants were given a unique patient identification code (UPIC). This UPIC was only linked to the name of the interviewee on the informed consent form, which was stored separately in a locked closet and was not entered in the computer. All entered data only contained the UPIC as identification code.

Data were entered into an EpiData database and analyzed with Microsoft Excel (from QUOTE tools) and SPSS 17. Data analysis involved calculating the Quality Impact scores (QI) for each quality dimension derived from combining the importance scores from the FGDs and the average of performance scores from the patient survey. In order to see if quality of care ratings are influenced by respondent characteristics and by characteristics related to the health facilities then we also looked at statistically significant differences in the average performance scores between the hospital and health centres and between sex (women and men), age groups (young 20-39 and older 40+), education (low/below secondary school and high/ secondary school above) and occupation (unemployed/informal and employed). We used statistical tests: t-test, chi square or Fischer's exact test where appropriate. We considered a *p* value of $<0.05$ as statistically significant. Triangulation was done through examining the findings from different angles – patients and providers, hospital and health centres and mixed methods-quantitative and qualitative data.

### 2.4.6. Ethical Approval

The study was approved by the KIT Research Ethics Committee. Upon arriving at a health facility, the data collector of the team provided to the facility director a letter from the Ministry of Health of Indonesia to the facility director describing the study and asking for his or her cooperation. Written informed consent was obtained from all patients and providers interviewed.

## 2.5. Limitations of the study

1. The author had only recently been trained in qualitative and quantitative research but had not yet been exposed to conducting such a research.

2. There was a limitation of time to conduct this research as the author is also studying fulltime at the ICHD course. The preparations of field visit, data collection and analysis had to be done outside the normal study time.
3. Due to time limitation, the participants of this study were only the users of the services. Responses from users and non-users would provide a more global picture on the underlying cognitive and affective components of acceptability and quality of services.
4. It was a challenge to bring in a sufficient number of participants in the FGDs because of limited number of patients available at the agreed time.
5. The aim of this study was to have representative data comparing perceptions of MDR TB patients from the hospital and health centres mentioned in Jakarta. The results can therefore not necessarily be generalized to other cities, districts or populations.

To deal with these limitations, consultation was done on a daily basis with the local supervisor to ensure the implementation was in line with the protocol. Besides that, three research assistants with at least one year experience in doing research were recruited to help conducting this study such as getting permission, making appointments, interviewing patients, translation and also in transcribing the interviews.

## 2.6. Conceptual Framework

Quality of care is composed of multi dimensional factors. According to Dagger *et al*., quality of services consists of four major dimensions such as interpersonal quality, technical quality, environment quality, and administrative quality. Interpersonal quality reflects the relationship developed between providers and users. Technical quality reflects the expertise, and competency of the provider in delivering service. Environment quality comprises a complex mix of environment features like the convenience of facilities, amenities, or layout of building. And administrative quality reflects elements that are essential for the delivery of the service such as availability of services, support (Dagger *et al*., 2007).

For the purpose of analyzing the data, we used the conceptual framework from Dagger and from the QUOTE TB LIGHT tool. This tool specifically measures the quality of TB care with nine sub dimensions of quality namely communication and information, patient provider interaction and counseling, stigma, professional competence, availability of TB services, affordability, support, TB/HIV relationship and infrastructure (Massaut et al, 2009).

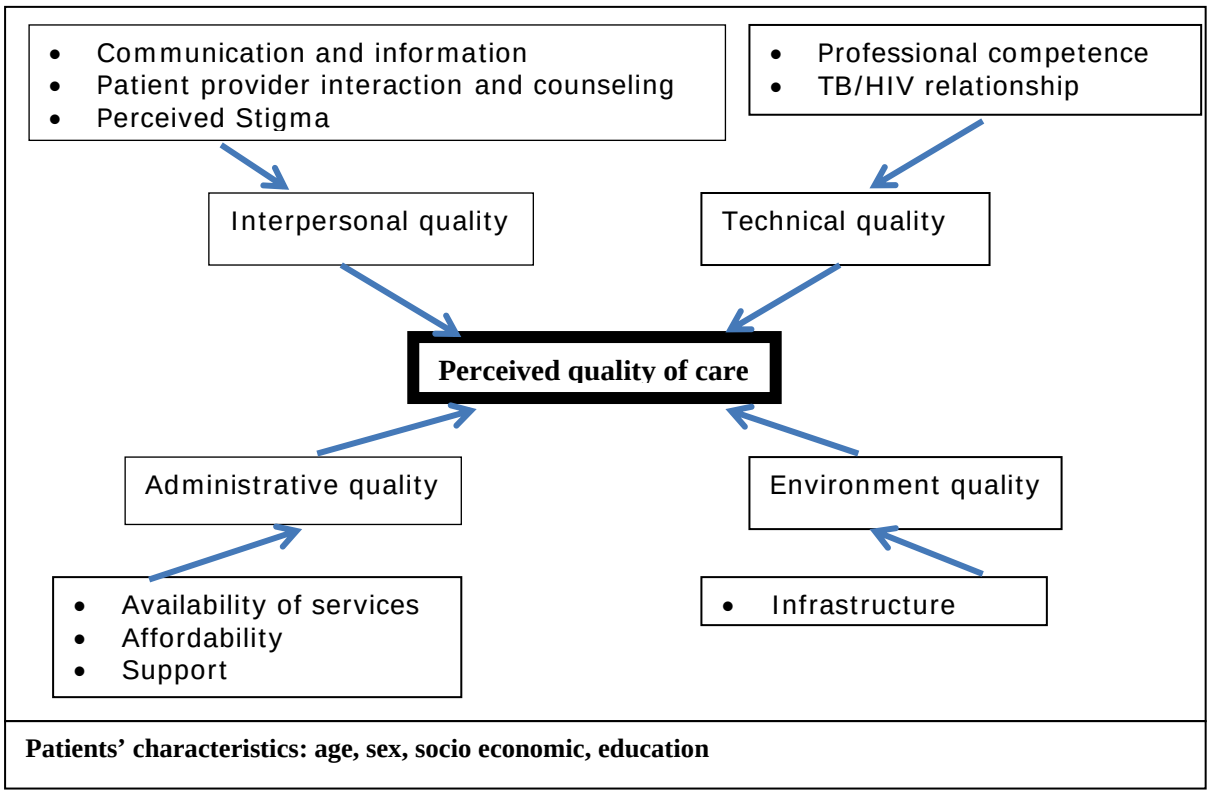



**Figure 3: The modified framework on perceived quality of care (Dagger *et al.*, 2007; Massaut *et al.*, 2009)**

The modified framework in figure 3 is a combination of the frameworks described by Dagger (Dagger *et al.*, 2007) and QUOTE TB Light tools (Massaut *et al.*, 2009) in order to link patient's perception on quality of TB care (QUOTE TB Light) with the various dimensions of service quality (Dagger).

## Chapter 3: Literature Review

In this chapter a literature overview is provided to describe the current situation of MDR TB control in Indonesia focusing on perceived quality of care.

### 3.1. TB and MDR TB

Tuberculosis is an airborne disease, which can be transmitted from an infected person to another person by coughing, sneezing, talking or spitting. Tuberculosis is curable with anti TB drugs with treatment lasting for at least six months. If *Mycobacterium tuberculosis* becomes resistant to first-line anti TB drugs, particularly Isoniazid and Rifampicin, it is called multi drug resistant TB (MDR TB). Patients get MDR TB from either primary infection with resistant bacteria from another patient (exogenous) or may develop resistance during the course of treatment. MDR TB is more difficult to treat with second line anti TB drugs as they are less effective and have a duration of 18-24 months. Also these drugs have more serious side effects than first line anti TB drugs (WHO, 2009B).

In 2006, WHO brought the MDR TB issue to global attention and addressed this in the Stop TB strategy. Based on WHO estimation in 2008, there are 440,000 cases of MDR TB globally emerging annually. From the 2011 report, only 10% of the estimated MDR TB cases in the MDR TB high burden countries were enrolled in treatment. During the 62$^{nd}$ World Health Assembly, a target was set to assure universal access for diagnosis and treatment of MDR TB by 2015. This needs large attention from all countries particularly the high burden countries with MDR TB to mobilize resources to achieve the target (WHO, 2011F).

### 3.2. Programmatic Management of Multi drug resistant TB

The National TB Control Program of Indonesia (NTP) started programmatic management for drug-resistant tuberculosis (PMDT) in August 2009 through pilots in two PMDT referral centres, Persahabatan hospital in Jakarta and Sutomo hospital in Surabaya. This program follows WHO guidelines and protocols, and uses a standardized regimens Kanamycin (Km)/ Capreomycin (Cm) - Ethionamide (Eto) – Levofloxacin (Lfx) – Pyrazinamide (Z) – Cycloserine (Cs) – Ethambutol (E). Five Reference Labs have been certified to perform DST for first- and second-line drugs. The enrolment process starts in the hospital. After diagnosis MDR TB patients come every day to the hospital or health centre for direct observed treatment (DOT) by the health staffs. Clinical monitoring and side effect management is under responsibility of the hospital's Clinical Expert Team (CET) and all clinical decisions are made by the CET. MDR TB treatment is provided free to patients. During the pilot phase of the program, patients received enablers for the transportation cost through an external aid funded project. Besides that, patients also receive other psycho-social supports such as counselling by social workers and

income generation activities. Unfortunately the transport support was ended in January 2012 (MOH-ROI, 2011B).

Based on recent WHO's recent guidelines on PMDT, MDR TB patients are recommended to be treated by clinic-based ambulatory care (decentralized) rather than in hospital-based inpatient care (centralized) (WHO, 2011E). NTP adopted this guideline and recommends that MDR TB patients are only hospitalized for the first two weeks of treatment if necessary in order to observe drug adverse reaction. This gives the opportunity not only to monitor possible side effects but also for intensive education of the patient. PMDT Hospitals are recommended to refer the MDR TB patients thereafter to Health Centres in an effort to decentralize the treatment care (MOH-ROI, 2011B).

This recommendation is based with the purpose to provide cost effective treatment and optimize control of transmission of MDR TB to other patients in crowded hospital settings and to provide convenient follow up services near to the place where the patient lives. It also minimizes the transport and opportunity cost for patients (MOH-ROI, 2011B).

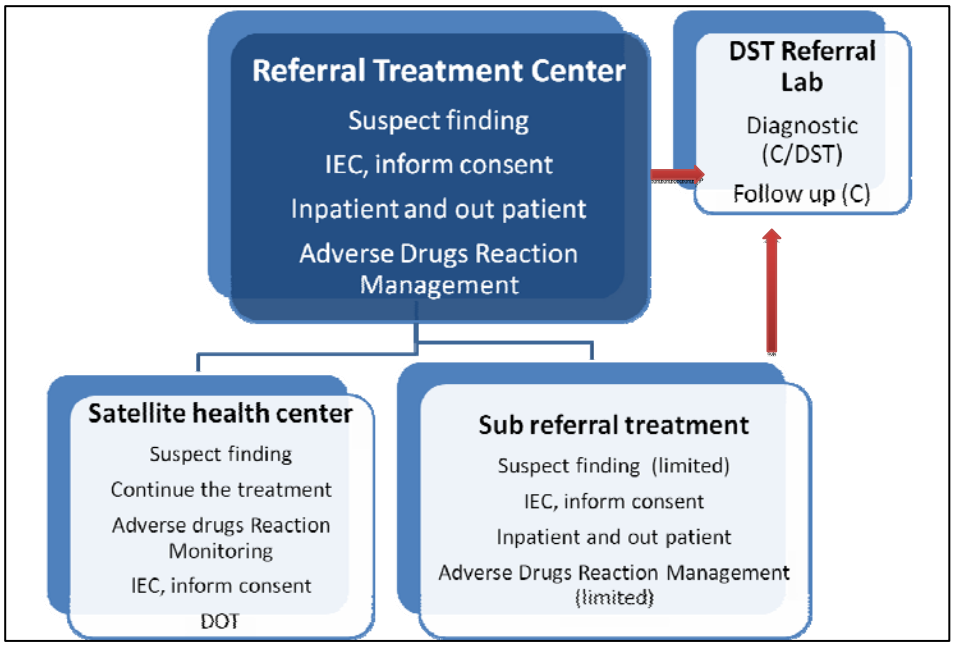



**Figure 4: PMDT treatment linkage (MOH-ROI, 2011B)**

MDR TB care services (see Figure 4) are provided through referral and sub referral treatment (selected hospitals) and satellite treatment health centre (selected primary health centre). A referral treatment centre provides various services including suspect identification, providing information and counselling, diagnosing and initiating treatment. It includes provision of in- and outpatient cares, managing adverse drug reactions, monitoring treatment progress, logistics and surveillance (recording and reporting).

A sub referral treatment centre has a similar function as the referral treatment centre except it requires close mentoring and supervision from the referral treatment centre. For the purpose of diagnose and treatment follow up examinations, the referral and sub referral treatment centres coordinate with the designated DST referral labs. The satellite treatment centre provides services such as suspect finding and referral, management of treatment, ensure logistic and ensures the recording reporting. Once the patient is diagnosed and the treatment has been initiated at the referral treatment centre, they will be referred to Health Centre nearest to their house except if the patients want to continue treatment only at the hospital (MOH-ROI, 2011B).

After piloting PMDT in two referral hospitals (Jakarta and Surabaya) NTP has expanded the implementation of PMDT to four other hospital treatment centres: in Malang, Solo, Makasar and Bandung. These six hospitals act as spiders in the network of PMDT referral centres in Indonesia with some health centres or hospitals serving as their satellite treatment centres. According to NTP's accumulative data on PMDT in May 2012, nearly 777 cases of MDR TB were diagnosed but only 576 started on treatment. The reason for this low enrolment is that about 66 cases (8.5%) died during the long diagnostic process before the start of treatment, 6% refused their treatment, and 11.3% defaulted during treatment. A person is declared a defaulter if he or she missed two months of treatment visits (NTP, 2012). Based on the National Strategic Plan, by 2014 NTP intends to mainstream PMDT services into the National TB Control Program and establish 33 PMDT treatment centres in order to cover all provinces in Indonesia, and able to treat 5100 MDR TB patients on an annual basis (MOH-ROI 2010B).

### 3.3. Quality of care

There have been several studies published on quality of care with different measurements. According to Donabedian, quality of care consists of two elements: one based on technical performance and on the other interpersonal communication. Quality of care is seen through three aspects, structure, process and outcome. Structure is the circumstances in which health care services are provided; process expresses the method of care provided; and outcome is the result of care. Patient satisfaction is considered a key to quality assurance and a yardstick for the process of care (Donabedian, 1988).

WHO considers quality of care to comprise of six elements or dimensions: quality care should be effective, efficient, accessible, acceptable/patient-centred, equitable, and safe (WHO, 2006).

According to Campbell *et al.*, quality of care is defined as "whether individuals can access the health structures and processes of care which

they need and whether the care received is effective" (Campbell *et al*., 2000).

The study by Dagger *et al.* (2007) reveals that service quality has an important impact on service satisfaction and behavioral intentions which has four quality dimensions: interpersonal, technical, environmental and administrative (Dagger *et al*., 2007).

### 3.4. Quality of Care in TB control

At the global level, an International Standard for Tuberculosis Care (ISTC) was developed to facilitate all care providers in delivering high quality of care for TB patients including the drug-resistant TB patients. ISTC cover standards for diagnosis, standards for treatment, standards for addressing HIV infection and other co-morbid conditions and standards for public health (TBCTA, 2009). Besides ISTC, the Patients' Charter for Tuberculosis Care (PCTC) was also developed as a set of standards of care from the perspective of patients which outlines the right of patients to care, dignity, information, choice, confidence, justice, organization, and security. It also defines the responsibilities of patients to share information, follow treatment, contribute to community health and show solidarity (WCC, 2006). These standards are promoted to countries as complementary to local guidelines in order to deliver high quality of care for TB patients.

In order to assist NTPs to measure the performance of TB services from the perspective of patients at the health facility, TBCTA developed a management tool called QUOTE TB. The QUOTE TB tool was developed and piloted in three countries in Africa: Kenya, Malawi and Uganda. QUOTE stands for Quality of Care as seen through the Eyes of the Patient. For patients, quality of care is defined as care that meets their perceived needs. Each patient may have different needs, and patient's satisfaction is influenced by the expectations, and the characteristics of patients such as age, sex, education and social economic background and the quality of services provided (TBCTA, 2007). Patient's satisfaction determines the expected outcome of care (Mesfin *et al*., 2009).

QUOTE TB Light is a simplified version from the original QUOTE TB tool in order to be more practical and easier to use. Nine quality sub dimensions are included in the QUOTE TB Light tools: availability of services, communication and information, patient provider interaction and counselling, affordability, infrastructure, TB HIV interaction, support, professional competence and stigma. This tool has been validated in the setting of TB control in Africa countries as mentioned above. In the process of developing this tool, patients were also involved in all stages including the health providers and NTP managers (Massaut *et al*., 2009).

### 3.4.1. Interpersonal quality

Interpersonal quality reflects the relationship developed between providers and users (Dagger *et al*., 2007) which measured through three quality sub dimensions:

Communication and information

Communication and information reflects the interaction between provider and patients regarding transfer of information (Dagger *et al*., 2007; TBCTA, 2007). Some important information regarding TB and its treatment are measured such as whether the patient knows when a TB patient stops spreading disease to others, whether TB an be cured. Also patient perceptions on the importance of directly observed treatment, possible side effects of TB drugs, the need for sputum tests to monitor treatment progress, and the duration of treatment are assessed (TBCTA, 2007).

Patient provider interaction and counselling

The interaction between patient and providers and the counselling of the patient provider describe the attitude and behaviour of the provider during the service and her or his closeness and relationship with the patient (Dagger *et al*., 2007; TBCTA, 2007). This quality dimension is measured through aspects such as treating the patient with respect, listening carefully to the patient, and explaining information in a way that the patient can understand. Other aspects include providing sufficient time to discuss and address the patient's problems, not discriminating against patients because of the disease, showing concern for the patient's privacy during the consultation or counselling, and advising how TB can affect his or her daily life (TBCTA, 2007).

Stigma

Stigma refers to the attitude and behaviour from providers which may discriminate against a patient due to the disease for example in the way of speaking to the patient, friendliness of the health provider, welcome/greeting, turning her/his face away while speaking with the patient, and treating the patient with dignity (TBCTA, 2007).

### 3.4.2. Technical quality

Technical quality reflects the expertise, and competency of the provider in delivering service (Dagger et al, 2007) which measured through two quality sub dimensions:

Professional competence

This quality dimension reflects the ability of health providers to adhere to high standards of services. It is measured through several aspects such as provision of quality assured services to examine sputum, physical examination during the first visit to the health facility, close contacts with

the patient being examined, and ensuring observed and standardized treatment (TBCTA, 2007).

TB/HIV relations

There is a strong relation between TB and HIV/AIDS. TB is the major cause of death among people living with HIV/AIDS and HIV increases TB incidence through immune suppression. Provider's competence in this area is important to ensure equity in access to adequate health care services for patients. There are several aspects measured under this quality dimension such as explanation to patients about the link between TB and HIV, information on how to prevent HIV, providing counselling and testing for HIV after diagnosis of TB, including assuring access to information and support to get HIV treatment (TBCTA, 2007).

### 3.4.3. Administrative quality

Administrative quality reflects elements that are essential for the delivery of the service (Dagger et al, 2007) which measured through three quality sub dimensions:

Availability of services

This quality dimension refers to factors involved in arrangements for receiving health services such as waiting time, counselling by the same health provider, convenience of service hours, availability of drugs, language barriers, patients being referred to other units due to services unavailable, distance to facility, availability of TB services during service hour of the facility, and availability of the relevant health provider (TBCTA, 2007).

Affordability

Affordability refers to the cost of services a patient should pay. This will partly determine whether the patient will seek necessary health care services. Some aspects measured are how often patients have to pay for the regular services (sputum test, TB drugs, X-Ray, etc), indirect or informal payments (tips) in order to receive services, and if and how often costs prevent patients from getting to the health facility (TBCTA, 2007).

Support

Support refers to additional services element that adds to the value of core service such as transportation support from the health facility (TBCTA, 2007).

### 3.4.4. Environment quality

Environment quality comprises a complex mix of environment features (Dagger et al, 2007) which measured through one quality sub dimension:

Infrastructure

This quality dimension reflects the tangible and intangible perceptions of environmental features in the health service. Several aspects are measured such as the cleanliness of the facility, provision of safe drinking water, availability and usability of the toilets, comfortable places to sit, and infection control measures like environmental controls and administrative measures (fast tracking -priority for patient with cough to receive service first) (TBCTA, 2007).

### 3.5. Patient's adherence

Quality of care plays a key role in influencing patient's adherence (Mesfin et al, 2009). Patient's adherence in a long treatment duration disease such as MDR TB is very essential. Poor adherence to treatment will have impact to treatment outcome, for MDR TB it may mean prolonged infectiousness, more drug resistance, relapse and death. Treatment adherence can be seen as results of complex interlinkage between patients' behaviour, health care worker's conduct, and decision makers and society's outlook (Munro *et al*., 2007).

Factors that may influence treatment adherence are the duration of the treatment, the number of medications prescribed, the cost and the frequency of dosing. Communication and the doctor-patient relationship are important factors for treatment adherence. However it also mentioned that patient's own beliefs and the constraints in daily life play a key role in patient's treatment adherence (Vermeire *et al*., 2001). In TB control, absence of symptom, and fear of side effect of drugs are key factors that lead to low treatment adherence (Widjanarko B, *et al*., 2009).

A systematic review study was conducted by Munro *et al.* to understand factors contributing to TB treatment adherence as perceived by patients, caregivers and health care providers. There were eight major themes revealed from this study: organisation of treatment and care; interpretations of illness and wellness; the financial burden of treatment; knowledge, attitudes, and beliefs about treatment; law and immigration; personal characteristics and adherence behaviour; side effects; and family, community, and household support (Munro *et al*., 2007).

A study in South Africa revealed that factors associated with default from MDR TB treatment are quality of patient provider relationship such as being treated disrespectfully, inaccurate information about MDR TB; lack of support from family and friends due to stigma to TB; socio economic factors such as access to transport, available work, monetary resources and access to food; side effects of drugs; and accessibility to health services such as inconvenient operating hours (Weyer K and Holtz T, 2005).

One of the standards in ISTC mentioned that patient-centred approach should be developed in health facilities in order to enhance patient adherence to TB treatment (TBCTA, 2009). A patient-centred approach means that health system and the interventions are developed on based on patient's right, preferences, values and needs (Massaut and Kwaak, 2010).

## Chapter 4: Results of field study

In this chapter the findings of the field study are presented. The findings describe how patients perceived the quality of MDR TB services provided in hospital and in health centre, and provider's view on their patients' perception on the quality of MDR TB care.

### 4.1. Actual Samples

Characteristics of Health Facilities Assessed

All, 14 of the health facilities included in this study were government/public owned (PMDT services have not yet been established in private facilities). The hospital was a tertiary level hospital and also acts as a teaching hospital. It opened the first PMDT treatment centre in Indonesia (2009). The selection of this hospital was based on the fact that it serves the highest number of MDR TB patients compared to other centres and has a well functioning DOTS unit. The other 13 health facilities selected were health centres located in five municipalities (urban settings) of the Jakarta province, all providing DOTS services. Five out of these health centres have been involved in MDR TB services since the beginning of the PMDT program in 2009. The others joined in the past year as part of scaling up of PMDT in Jakarta.

Characteristics of Patients Interviewed

A patient survey with a structured questionnaire was carried out with 96 MDR TB patients and two defaulters (one in the hospital and one in a health centre) giving a total of 98 patients. We were unable to contact 22 out of 24 treatment defaulters. This is likely due to internal migration or death.

More men (53%) than women (47%) were interviewed. The average age of our samples was 40 years old with a standard deviation of 11.7 years. Most (almost 60%) of the respondents were aged between 30-49 years and about 25% were 50 years or older. Two-thirds (67%) had graduated from secondary school and 55% were unemployed or worked in the informal sector. Out of 98 respondents, 61 were patients treated in hospital and 37 were treated in the health centre. There is no statistically significant difference ($p>0.05$) in demographic characteristics (age group-, sex-, educational-, and occupational distributions) between hospital and health centre patients (see table 3).

**Table 3: Demographic Characteristics of Hospital and Health Centre MDR TB patients in Jakarta, 2012 (n=98)**

| | | Hospital | | Health centre | | Total | | P-value * |
|---|---|---|---|---|---|---|---|---|
| | | n | % | n | % | n | % | |
| Age group | 20-29 | 10 | 16.4% | 10 | 27.0% | 20 | 20.4% | 0.578 |
| | 30-39 | 21 | 34.4% | 11 | 29.7% | 32 | 32.7% | |
| | 40-49 | 14 | 23.0% | 9 | 24.3% | 23 | 23.5% | |
| | 50+ | 16 | 26.2% | 7 | 18.9% | 23 | 23.5% | |
| Sex | Male | 32 | 52.5% | 20 | 54.1% | 52 | 53.1% | 0.878 |
| | Female | 29 | 47.5% | 17 | 45.9% | 46 | 46.9% | |
| Education group | None | 5 | 8.2% | 5 | 13.5% | 10 | 10.2% | 0.328[a] |
| | Primary | 7 | 11.5% | 3 | 8.1% | 10 | 10.2% | |
| | Secondary | 39 | 63.9% | 27 | 73.0% | 66 | 67.3% | |
| | Tertiary | 10 | 16.4% | 2 | 5.4% | 12 | 12.2% | |
| Occupation | Unemployed/informal | 35 | 57.4% | 19 | 51.4% | 54 | 55.1% | 0.563[a,b] |
| | Student | 2 | 3.3% | 0 | .0% | 2 | 2.0% | |
| | Employed | 15 | 24.6% | 10 | 27.0% | 25 | 25.5% | |
| | Housewife | 9 | 14.8% | 8 | 21.6% | 17 | 17.3% | |

* Pearson Chi-Square test

a. More than 20% of cells in this sub table have expected cell counts less than 5. Chi-square results may be invalid.

b. The minimum expected cell count in this sub table is less than one. Chi-square results may be invalid.

For further analysis, age, education and occupational status were re-categorised to take into account the relatively small frequencies in certain categories and to be able to conduct statistical tests. Age groups: young (20-39 years) and older (40+ years), education: lower (below secondary school) and higher (secondary school and above), and occupation: unemployed (unemployed/informal, student and housewife) and employed.

Characteristics of Patients participating in Focus Group Discussion

Three FGDs were conducted. Two FGDs were done with patients in the hospital, one group of male (five respondents) and one group of female (six respondents). One FGD (mixed male and female) was carried out with patients in a health centre (three respondents). The FGD in the Health Centre was constrained due to small number of patients turning up.

Characteristics of Providers Interviewed

Interviews were carried out with 11 health providers in six health facilities, two from one hospital and nine from five health centres. All of the respondents were female, four doctors and seven nurses.

## 4.2. Ranking of MDR TB quality of care

The ranking of the nine quality sub dimensions specific to MDR TB care was conducted through FGDs, survey with patients and in depth interview with the providers.

It revealed that health care providers perceive proper communication and information to patients and families as the most important quality dimension to be improved to ensure the treatment compliance. Patients on the other hand perceive support (financial support for visiting Health Facilities) as the most important quality dimensions. It shows the difference in perception between provider and patients and this needs to be considered to avoid gap in delivering care. The following table 4 gives the ranking of the aspects of MDR TB quality of care as perceived by the patients and by the providers.

**Table 4: Ranking of MDR TB quality of care by patients and providers (1=most important; 9=least important)**

| Quality sub dimensions | Patients in hospital | Patients in HC | Average Patients (Hosp + HC) | Providers |
|---|---|---|---|---|
| Communication and information | 3 | 4 | 3.5 | 1 |
| Professional competence | 6 | 7 | 6.5 | 3 |
| Availability services | 4 | 1 | 2.5 | 2 |
| Affordability | 5 | 3 | 4 | 5 |
| Patient provider interaction and counselling | 2 | 5 | 3.5 | 4 |
| Support | 1 | 2 | 1.5 | 7 |
| TB/HIV | 9 | 9 | 9 | 9 |
| Infrastructure | 7 | 6 | 6.5 | 6 |
| Stigma | 8 | 8 | 8 | 8 |

## 4.3. Performance of services as experienced by MDR TB patients: findings from the study

The findings of the patient's survey are systematically described along nine quality sub dimensions: Availability of services, Communication and Information, Patient Provider interaction and counselling, TB/HIV interaction, Infrastructure, Professional competence, Affordability, Support and Stigma.

The performance of services is measured from the Quality Impact (QI) scores of care. QI scores are calculated from combining the importance (from the FGD and the patients' survey) and average performance scores

(from the patients' survey). A QI scores above 0.75 indicates that there is room for improvement and that interventions to achieve quality improvement are required (Massaut *et al*., 2009). For the details see Annex 6 Performance, Importance and QI scores.

We compared the mean scores of patients' perceptions from different facilities (hospital and health centre), as well as between respondents' characteristics groups such as sex, age, education, and occupation in order to understand differences between groups. For the details see Annexes 7 and 8. Statistically significant differences are highlighted in the results.

The findings from the survey were triangulated with the analysis of data from focus group discussions comparing patients in hospital and health centres. Another level of triangulation was done with the provider's view on their patients' perception on quality of MDR TB care. The highlights that eventually emerged on patients' perceptions about quality of care are presented below.

In summary, there are 23 out of 40 aspects of quality considered by patients as needing improvement. Figure 5 shows quality dimensions that has a poor performance (QI > 0.75) and we also include the difference of QI between hospital and health centre.

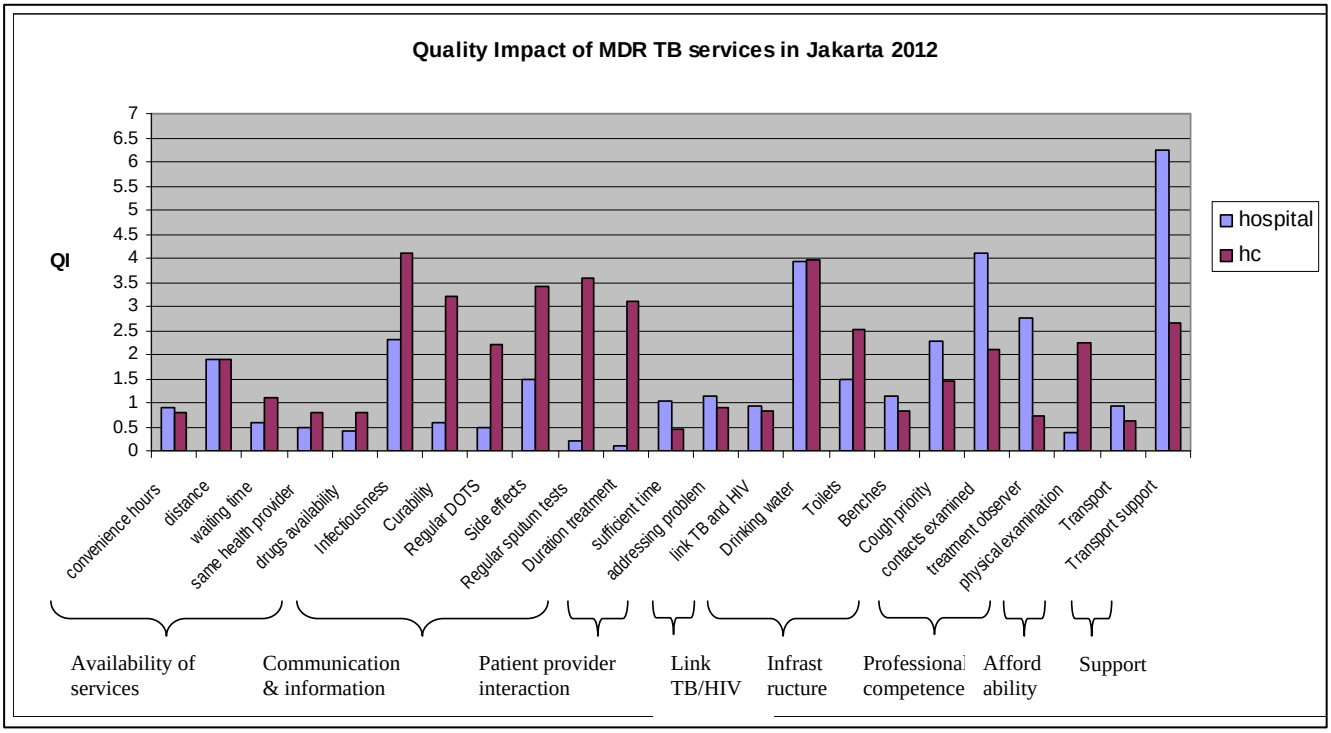



**Figure 5: Quality Impact of MDR TB services in Jakarta 2012**

### 4.3.1. Availability of services

The analysis of the data showed that patients treated in the hospital felt the convenience of service hours (QI = 0.9) and the distance to hospital (QI = 1.9) as priorities that need to be addressed. Patients in the Health Centres perceived the waiting time (QI = 1.1), being attended by the same health provider (QI = 0.8), the convenience of service hours (QI = 0.8), the drug availability (QI = 0.8) and distance to Health Centre (QI = 1.9) as issues to be addressed.

From the analyzed data (see Annex 8 table E), there is a statistically significant difference between the perception of employed and unemployed patients regarding language barriers (p = 0.045). The data showed that the employed group of patients perceived less difficulty in obtaining services in the health facility because the language barrier was considered less serious by them compared to the unemployed group patients, who faced more language problems due to less understanding in medical/technical terms.

There are no statistically significant differences in perceptions related to this quality dimension for sex (male - female patients), age (young (20-39 years) and old (40+ years) patients), and for education (lower (below secondary school) and higher (secondary school and above) level education group patients). There is also no significant difference of perception of this quality dimension between patients treated in the hospital and in health centres (p>0.05).

During the FGDs, we found that some patients experienced substantial delays in receiving services. An example is the long waiting time to receive an injection due to the limited number of available health staff.

*"…There are a lot of patients who go to the clinic for the injections; only one staff was available to do all these injections, preparing the pills, do the administration..."* (45 year-old, male)

Some providers noted the high workload (many other programs to supervise) while the number of trained health staff is limited (only two staffs trained in MDR TB available per health centre).

*"There is no MDR staff on Saturday and Sunday so we left the medicine to the ER (emergency room) staff, who are usually really busy, so they can't observe while the patient is taking the medicine"* (nurse)

We asked patients' preference to be treated in the hospital or in a health centre that is nearest to their house. We found that some patients in the hospital would like to be transferred to a Health Centre but were told to wait until their sputum was converted to negative. One of the patients

mentioned the issue of discrimination in HC, which is discouraging for the patient. Another patient (treated at the hospital) doubted the quality of care in Health Centre, especially the long waiting times.

*"…sometimes at the health centre, the waiting time is too long, meanwhile we have to go to work. If the services were just as good as here the hospital and the waiting time wasn't too long, I wouldn't mind to continue treatment in Health Centre..."* (45 year-old, male)

However some patients in the Health Centres said that they preferred to be treated in a Health Centre although they considered the quality of care in Hospital to be much better and treatment at the hospital would be preferable if distance to the hospital was not a major stumbling block. Another reason is that in hospital they can meet other MDR TB patients, chat, share experiences and being together while taking the medicines.

Most of providers in a Health Centre mentioned that it is difficult to have patients attending appointments. Some patients are employed or have a job during the period of treatment. As a consequence the patients face irregular time schedules for taking their drugs and providers hardly met them during the working hours. In some occasions health staffs have to wait for the patient, even after service hours in order to observe and make sure that the patient is taking the medicine. In another situation, patients were referred to other staff that may not be able to correctly observe patients taking the medicine or provide patients with the needed information.

### 4.3.2. Communication and Information

The analysis of the data showed that patients treated at Health Centres perceived that all six quality aspects of communication and information need to be addressed (all QI > 0.75). While patients, treated in Hospital, perceived that only two aspects need to be improved, i.e. communication on infectiousness (QI = 2.3) and side effects (QI = 1.5).

There is not a statistically significant difference between perception of male and female, young and old patients, lower and higher level education group patients, employed and unemployed group patients with respect to this quality dimension ($p>0.05$).

There is however a statistically significant difference ($p<0.05$) between the perception of patients in the hospital and health centre regarding all aspects of this quality dimension. Our data (see Annex 7 table B) illustrated that a significantly higher percentage of hospital patients were adequately informed on issues regarding infectiousness of MDR TB than health centre patients (69% versus 38%). This also is the case with MDR TB curability (92% versus 51%), the importance of observed treatment (93% versus 69%), side effects of MDR TB drugs (80% versus 48%), the

need for sputum tests during treatment process (97% versus 46%) and the duration of the MDR TB treatment (98% versus 54%).

From the FGD in hospital and health centre, we found that majority of patients' experienced limited information given to them particularly concerning the results of the laboratory follow up examinations. Some of them did not even know the progress of their disease.

*"I asked the nurse about my test result and she told me that if there was no news, then it was good news"* (32 year-old, male)

All interviewed providers agreed that communication and information are important for patients' compliance with the treatment for instance information on the side effects of medication, importance of regular treatment, curability of the disease and infection control. However the practice seems different.

*"We must encourage patients for having a will to fight the disease. We must inform them on drug side effects (muscle aches, headaches, etc), they must be given motivation as to keep up with treatment and deal with the treatment."* (doctor)

Besides the patients, it is also important that the family members are informed about the disease and treatment, particularly the side effects of medication. One of the providers in HC suggested that the hospital should have provided all the detailed information to patients prior to their referral to a health centre. Others suggested providing more information by using brochures or flipcharts that patients can access, and read while waiting to be served.

A clinical nurse said:
*"Providing information should be more frequent than once in a month, may be good to do it every two weeks particularly for all new patients so they are able to anticipate side effects of drugs when these occur…"*

### 4.3.3. Patient Provider interaction and counselling

The data analysis showed two major aspects that hospital patients brought up as points for improvement. In the first place this was "providing sufficient time to discuss patient's problem" (QI=1.02). The second was "discussing with the patient how to deal with their problem" (QI= 1.15). While patients in health centres seemed quite satisfied with their interactions with providers, except for one aspect which need to be addressed: discussing with patients how to deal with their problem (QI= 0.9).

We found a statistical significant difference (see Annex 8 table B) in perceptions between male and female patients regarding the aspect of

explaining in a way that a patient can understand (p=0.02) and discussing with patients how to deal with their problem (p=0.04). The data showed that female patients perceived better interaction with the provider than the male patients. There is also a statistically significant difference of perceptions between lower and higher education groups of patients regarding explanation that patients can understand and experiencing discrimination because of having MDR TB (see Annex 8 table G). Patients with lower education levels perceived better quality of services regarding these two aspects compared to patients with a higher education level. This may be due to having low or no expectations in the first place resulting in higher levels of satisfaction for lower educated patients.

There is no statistically significant difference (p>0.05) of perception of this quality dimension between patients treated in the hospital and in health centres as well as between age groups (young and old) of patients and occupation groups (employed and unemployed).

From the FGD it appeared that the majority of patients felt that it was very difficult to meet the CET/clinical expert team (a team of assigned specialists responsible for clinical management of the MDR TB patient) which they would like to consult with to learn about their treatment progress.

*"…I have been treated here for 10 months and not once have I met with the main doctor (CET)… According to the contract I signed, during my two years of treatment, I should meet with the doctor once a month…"* (32 year-old, male)

*"…because these days, we feel like we have to chase them. Whenever we have a complaint, it seems like they are always in a hurry…"* (27 year-old, female)

One provider mentioned that she heard about complaints from patients that they hardly were able to meet the doctors of the CET even up till treatment completion; patients would like to get more information about the progress of their treatment process and receive more moral support to continue with the treatment.

*"…If only I could meet with my doctor (CET) once a month, that would refresh, be a motivation for me to carry on..."* (32 year-old, male)

### 4.3.4. TB/HIV interaction

For ethical considerations we modified the question "Did health providers in the facility inform you about the link between MDR TB and HIV?" If patients said that they were never informed by the provider about the "link between TB and HIV" then respondents would not be asked further

on other aspects of the TB/HIV interaction such as information on how to prevent HIV, advice to take HIV test after being diagnosed with MDR TB, and information and support to get HIV treatment.

In general, this quality dimension was ranked as least important by all respondents, however patients both in hospital and health centres felt that this quality aspect need to be improved (QI=0.92 and 0.84 respectively).

We found there is no significant difference between male and female patients, young and old patients, lower and higher level education patients, employed and unemployed patients regarding this quality aspect, as well as between patients treated in hospital and in health centre.

### 4.3.5. Infrastructure

The data analysis indicated that patients both in hospital and health centres felt that all aspects in this quality dimension (provision of safe drinking water, availability and usability of the toilets, comfortable places to sit, and priority setting for patients with cough to receive service first) need to be addressed (QI>0.75) except for the cleanliness of the facility.

There is no statistically significant difference of perception between male and female patients and between young and old patients regarding this quality aspect. However there is a statistical significant difference in perception between lower and higher education level patients and between unemployed and employed patients regarding the cleanliness of the health facility (see Annex 8 Tables E and G). Lower education level patients perceived better quality of services compared to higher education level, and unemployed patients perceived better quality of services than did employed patients.

We found a significant differences ($p<0.05$) in perceptions between patients treated in the hospital compared to health centres on sanitation (the usability of the toilets) and fast tracking (prioritizing patients with cough to receive service (see Annex 7 table A and B). Patients in hospital perceived the toilet facilities in the hospital as more usable compared to health centre patients. The data illustrated also that a significantly higher percentage of HC patients perceived that providers gave priority to patient with coughs compared to hospital patients (68% and 44%).

Most of providers in HC mentioned in the in-depth interview that there is no proper room available for treating MDR TB patients, particularly a proper space for injecting MDR TB drugs. Current facilities are inadequate which causes the problem of creating risks for transmission of MDR TB to other patients, especially when the MDR TB patients mix with other patients. To solve this problem in some health centres, patients are asked to come for treatment in the afternoon or evening which may not be

convenient for patients. This also reduces the chance for patients to see a doctor, and of course for some health workers, it is also a burden to wait for the patients to come for their medication after official opening hours.

### 4.3.6. Professional competence

Patients receiving care at the hospital felt that quality aspects like the examination of close contacts (QI=4.1) and the observation on the daily intake of MDR TB drugs (QI=2.76) needed improvement. Meanwhile patients treated in health centres felt that aspects of physical examination during the first visit to health facility (QI=2.25) and the examination of close contacts (QI=2.1) need improvement.

We found that there is a statistically significant difference of perception between male and female patients concerning the aspect of observation on the daily intake of MDR TB drugs ($p=0.009$). Female patients perceived this quality aspect to be better than male patients. There is no statistically significant difference in perception between young and old patients, lower and higher level education group patients, and employed and unemployed group patients related to this quality dimension ($p>0.05$).

Regarding patient perceptions on professional competence there is statistical significant difference for all aspects between patients receiving care in hospital compared to health centres. Patients in health centres perceived services to be better regarding the provider check on their daily intake of MDR TB drugs compared to hospital patients. However the data also illustrates that a significantly higher percentage of hospital patients than health centre patients (92% and 32%) are of the opinion that the provider did a physical examination during their first visit and a higher percentage of heath centre patients than hospital patients (35% and 15%) perceived that the provider did examination to close contacts.

During the FGD, patients in HC mentioned that they only come to get the medicine, and rarely have a chance to consult with the doctor. But another patient mentioned when she was sick, she consulted with the doctor after which she received additional medication.

Besides that, hospital patients also felt that when they complained about the side effect of drugs, it was not well followed up by the hospital provider and not sufficiently attended to or underestimated. From two defaulters that we interviewed, the main reason they stopped from treatment was fear of drug's side effect.

*"We are taking numerous amounts of pills every day. We're actually afraid that these drugs will affect other parts of our body…" (25 year-old, female)*

*"In my opinion, provider's attention to monitor our treatment should be improved. Don't wait till it is severe then start to manage..."(32 year-old, male)*

### 4.3.7. Affordability

The data analysis indicated that patients receiving care in health centres seemed satisfied with all affordability aspects, while patients in the hospital felt that issues on transportation costs needs to be addressed as daily transportation costs are a major constraint to get to the health facility (QI=0.93).

We found there is no significant difference of perception regarding the affordability quality aspect between male and female patients, young and old patients, lower and higher level education patients, employed and unemployed patients. There is also no significant difference between patients in the hospital and in health centre ($p>0.05$).

From the FGD, we found that the majority of patients were not happy about their daily visit to the hospital or health centre; patients felt that coming to the hospital/HC everyday takes too much of their time, and creates a significant economic burden. Most of patients are unable to work while on treatment due to side effects and time spent for visiting the health facility every day.

*"Even though the medication is provided for free, to access it is a large burden for me…It usually takes two hours to get here… for the transportation to hospital and return home, I spent about IDR 30,000 (=3 US$), that's not including food and drink which are needed to ease the process of swallowing tablets..."* (32 year-old, male)

*"I want to work, but that is impossible, can't stand with the drug's side effect…"* (27 year-old, female)

### 4.3.8. Support

The data analysis showed that both patients in hospital as well as in health centre feel that this aspect need to be improved (QI=6.23 and 2.64 respectively).

There is no statistically significant difference between male and female patients, young and old patients, lower and higher level education patients, employed and unemployed regarding this quality aspect ($p>0.05$). However we found there is a significant difference between the perception of patients in the hospital and in health centres ($p<0.05$). Patients treated in hospital gave more negative response compared to Health Centre patients. It is probably due to most of patients in Hospital are the new patients registered after January 2012 who don't get any transport support.

Besides the cost of transportation or accommodation (some patients who live very far from hospital rent a room in boarding house close to the treatment site), patients face major challenges to improve their nutritional status. Some providers felt that financial support is important to ensure that patients adhere to the necessary treatment, and two of the HC's providers also mentioned that patients should receive food supplementation to improve their nutritional status.

Support provided to patients, decreased significantly after a change of the policy from NTP in December 2011. Now patients only receive less than half of transportation support that they used to receive before. Even worse, the new patients who were registered since January 2012 do not receive any support. Since then the motivation of patients has decreased and also they perceived that the quality of services and attention from health staffs become less. According to the patients, some of the patients have dropped out and some would like to stop the treatment due to this lack of support.

*"…according to the data, 60-70% of this program's participants are of mid to lower level economy. It used to be that those who lived far away and had low income were brave enough to come here and seek treatment because they received some compensation…"* (37 year-old, male)

*"…and for the patients who start in 2012, they don't get financial assistance at all. Before we used to receive IDR 1.050.000 (=105 US$) per month as transport compensation, but now we only get IDR 400.000 (=40 US$)/ month. The reduction is too much…"* (25 year-old, female)

The majority of the providers in this study mentioned that psychosocial support is required to motivate patients for the treatment adherence. They also noted that involvement of relatives really helped the treatment process. Some providers mentioned that they need to counsel the patients through asking about their conditions and complaints and build up a relation of trust with patients.

*"Patients would be more comfortable to seek treatment if a good relationship with healthcare providers is built"* (nurse)

Providers considered psychosocial support meetings as very useful. In these sessions old and new patients share experiences and problems with each other and patients can bring up their complaints. But some patients said that such meeting were used only by the providers to gather patients and give out information.

*"…and mostly, the issues being brought up at the meeting were different with what we felt…when we want to tell what we actually feel, there was no time. So we just listened for information"* (25 year-old, female)

Patients suggested that old patients should be appointed and trained to provide psycho social support, to attend to their complaints, support them in the care process and help providing them with more information.

*"We often get advice from the older patients like not to give up and carry on. They tend to be more empathetic and caring than providers…"* (25 year-old, female)

### 4.3.9. Stigma

The data analysis showed that patients receiving care in the hospital and in health centres generally did not feel stigmatized by the health staffs in the hospital or the health centres (QI<0.75). There is no significant difference perception between male and female patients and between young and old patients regarding this quality aspect. There is also no difference in perception between patients in hospital and in health centres.

However there is a statistically significant difference in perception between unemployed and employed patients (see Annex 8 Table E) regarding the aspect of friendliness of the health provider. Unemployed patients perceived service to be better compared to employed patients. There is also a statistically significant difference in perception between low and high level education patients regarding direct communication while speaking with patient (turning away the face), (see Annex 8 table G). Low education level patients felt less the issue of direct communication compared to high education level patients.

Some patients face a problem when the community knows that they have MDR TB.

*"..I have been thrown out of my rented house. ..I had to move and that caused me not taking my medicines for a couple of days"* (28 year-old, female)

*"It is easy to get the support from other patients, but to get the support from family and other people around them is not going to be that easy because there is still a stigma for TB in the community. It's possible that the patients don't tell their neighbours or their colleague at work. If they do, there is a chance that they will be forced to leave."* (doctor)

Some providers suggested additional training on the issue of communication with MDR TB patients to reduce stigma. In particular they advised this for the other staffs such as from the Emergency Room (ER) unit, who are involved in providing medication during the weekend or after service hours and to other staff.

*"…a lot of healthcare personnel are still afraid of contracting MDR TB, they don't have a clear understanding on MDR TB yet..."* (nurse)

## Chapter 5: Discussion

In this chapter I begin by a critical discussion on the tools that I used. I will discuss key findings emerging from this study and draw some conclusions on each of the issues.

Major finding of this study is that MDR TB patients in Jakarta from their perspective feel that support (financial support for visiting Health Facilities), availability of services, interaction between provider and patients, and communication and information are the most important issues hampering quality of care.

The greatest difference in perceptions between patients treated at the hospital and health centres are in four quality dimensions: support, communication and information, infrastructure and professional competence. This may be due to the fact that health centres were not optimally prepared for implementing PMDT such assuring adequate professional competence, proper infrastructure, and provision of information. Regarding the quality dimension ‘’support from provider’’, hospital patients perceived lack of support as the greatest priority, as patients have to travel daily from far distances to the hospital hence bear/ suffer large opportunity costs.

There was no difference in perception between age groups. Female patients judged the services in general to be better than did male patients. Also low education level patients and unemployed patients regarded the services provided better than did the high education level patients and employed patients. This may be due to different levels of expectations and the difference in approaches to these particular groups. It could be that women and unemployed patients are afraid to criticize.

### 5.1. Interpersonal quality

In the hospital, due to large number of patients on treatment, many patients felt that provider was less attentive and did not spend enough time to discuss patient’s problems. The patients faced difficulties in actual meeting the responsible clinician (CET). Patients when judging the quality of care considered the interaction with providers as very important and were disappointed that the doctor did not spend more time with them to discuss their health problems and progress of their treatment. The interaction between patient and provider, as reported by a MDR TB study in South Africa is the most important issue that associated with patient’s default from treatment (Weyer K. and Holtz T., 2005).

Stigma was perceived as one of the less important quality dimension, this may be due to the fact that patients are in a dependent situation and have a low expectation regarding this issue.

## 5.2. Technical quality

We found that technical aspects of MDR TB treatment services in the health centres need to be improved. This applies to ensuring availability of competent health staff to address patient's problem, providing sufficient information to patients and family, and shortening the waiting time. Patients also expected the health centres not only to dispense their TB drugs but also to give them more information about MDR TB disease and progress of their treatment, as well as more consultation to discuss their health problem.

A study by Mesfin *et al*., stresses that competent health providers are important for improving the quality of care and such contribute to patient adherence to treatment (Mesfin *et al*., 2009). Providing sufficient information to patients and family is essential to improve treatment adherence and particularly need competent health provider. From a study in Central Java, Indonesia revealed that the most frequently mentioned reason for patient stopping their TB treatment was feeling better (Widjanarko B et al, 2009). Such problem can be anticipated through better education to patient. For MDR TB patients, information on side effect of drugs and how to deal with it are essential (Weyer K. and Holtz T., 2005).

Issues related to TB and HIV co-infection were perceived as the least important for patients. This may be the consequences of the limited attention and/or information given by health provider regarding possibility of TB-HIV co-infection.

## 5.3. Administrative quality

Even though NTP has scaled up the PMDT to more health facilities, the population coverage of MDR TB services is still limited even in the capital Jakarta. This can be concluded from the survey since both hospital and health centre patients face difficulties to access the health facilities providing PMDT services. From the study, we learn that the most important quality dimension for patients is the support to cover transportation- and food costs. This aspect was also pointed out as a significant factor influencing patients to stop treatment (Weyer K. and Holtz T., 2005).

Patients perceive it as important to have PMDT services available within a reachable distance, to shorten waiting times at their health facility and to have provider's preparedness to be available at a time convenient for patients, hereby reducing direct and opportunity costs.

## 5.4. Environment quality

The environmental quality of the facility is one of the dimensions that also need some improvement: Patients are concerned about the unavailability of drinking water to facilitate intake of the many tablets that are hard to

swallow, availability of clean toilets/latrines and proper waiting areas, which currently are not accommodating the needs of the patients while waiting for their treatment.

### 5.5. Provider concerns

Although the focus of this study was to assess patient's perspective on the quality of services, it is also important to see the provider's concerns emphasized such as:

- Shortage of staff in their facility who have been trained in MDR TB treatment provision and aspects of patient care
- The shortage/ lack of financial support for patients particularly for transport allowance and food supplementation
- The need for giving more information and assuring adequate communication with patients about the treatment including a positive interaction with MDR TB patients

From the study results, we found a difference in importance ranking between provider and patients. Some providers are aware of the issues such as provision of information to patients brought forward by patients, but apparently have not addressed them.

# Chapter 6: Conclusion and Recommendations

## 6.1. Conclusion

Based on the findings in this study, we are able to conclude the following. Two major quality dimensions perceived as most important by patients are the administrative quality (including patient support and availability of services) and interpersonal quality (including patient provider interaction and communication and information). Several other aspects need also to be addressed such as reduced or no transportation support, long distance to facility, long waiting time, insufficient information given to patients regarding the disease and treatment progress, difficult access to the responsible clinician (CET), and poor facilities.

Patients treated at the hospital and health centres had different perceptions on quality of MDR TB care for four quality dimensions: support, communication and information, infrastructure and professional competence. Patients treated in hospital were better informed about the disease and treatment and perceived less support than did HC patients. Patients treated in HC perceived less competent of the providers and less quality of facilities than did hospital patients. We also found that providers and patients have quite different views on defining and ranking important quality dimensions even though providers are aware of the issues brought forward by patients.

In Indonesia many patients suffer from TB and the problem of MDR TB is emerging. For TB service providers, it becomes an additional challenge to deal with MDR TB patients who have a longer duration of treatment and are expected to visit the treatment provider every day for 18-24 months. Thus, the MDR TB control program takes the needs of the patients into account when designing the program further. Through including a more patient centred approach health services are likely to improve patient adherence.

The patient's perspective on quality of care is an important subject that is relatively neglected public health programs in general and specifically in the PMDT program in Indonesia deserving stronger attention from program and providers. Information about the patients' satisfaction regarding overall service provision and addressing the needs from the patient is crucial for success and optimal impact of the program.

## 6.2. Recommendations

Overall recommendation:

In order to address the needs of MDR TB patients based on their perception of quality of care we recommend including and implementing patient centred approaches in Indonesia and integrating these approaches in the operational plan for PMDT expansion.

From the study and its conclusions, the following specific recommendations can be made as next steps:

Recommendations for next steps in Health Facilities

At Hospital level:

1. The responsible clinician (CET) should ensure at least one consultation per month to every patient as regulated in the national PMDT guidelines and provide information about treatment progress to patients.
2. Ensure easy access for patients to information about MDR TB and the treatment such as through printing media.
3. Improve current infrastructure such as provision of drinking water, usable toilets, convenient waiting room

At Health Centre level:

1. Ensure that the delegation of task (task shifting) for supervision of MDR TB treatment supervision is done according to clear SOP, where staff receiving the delegated task are trained properly to enable them to perform according to standards set
2. Improve the services with less waiting times, provide consultation and address patient's problem
3. Improve current infrastructure such as convenient waiting room, injecting room, usable toilets, drinking water
4. Ensure that patients that are unable to cover the direct and opportunity costs for their treatment are receiving adequate support to enable compliance to their treatment e.g. through existing social funding mechanism such as Provincial/District Community Health Insurance (Jamkesda) and other social security mechanisms.

Recommendations for the National Tuberculosis Control Program

1. Decentralize PMDT treatment services to health centres and assuring quality of the provider at HC level
2. Include patient centred approaches in the operational work plan for expansion of PMDT, and work it out with engaging all stakeholders, recognizing patient rights, enabling partnerships between patient and provider, and empower patients and communities.
3. Develop standardised training on interaction / communication skills for providers.

Suggestions for further research

Based on the findings, I believe that further research is needed to better understand patient's experience of MDR TB and its treatment in order to improve treatment adherence among MDR TB patients.

Besides that it is also important to look at the challenges related to treatment of co-infected MDR TB patients with HIV/AIDS and taking treatment for MDR TB. Though this number is still relatively small in

Indonesia treatment for both HIV and MDR TB will have its particular challenges to the patients, providers and health care system.

Suggestion for development of tools

This QUOTE TB Light tool was developed for the TB setting. For use in MDR TB settings, the tool needs some adaptation and validation. The modified tool can be a simple tool like an interview checklist that can be used in health facility setting to assess the patient's perception on the quality of services and patient satisfaction. This is in particular needed to better inform and instruct the providers to provide better and more regular feed back to the patients.

## References


Campbell, S.M., Roland, M.O. and Buetow, S.A., (2000). Defining quality of care. *Social Science & Medicine* 51 (2000), pp. 1611-25.

CBS-ROI (2010A). Population Census 2010. Jakarta: Central Bureau Statistic Republic of Indonesia. [Online]. Available from: *http://www.bps.go.id/aboutus.php?sp=0* [Accessed 12 April 2012].

CBS-ROI (2010B). Illiteracy rate 2010. Jakarta: Central Bureau Statistic Republic of Indonesia. [Online]. Available from: *http://bps.go.id/tab_sub/view.php?tabel=1&daftar=1&id_subyek=28&notab=5* [Accessed 12 April 2012]

Dagger, T.S., Sweeney, J.C. and Johnson, L.W., (2007). A Hierarchical Model of Health Service Quality: Scale Development and Investigation of an Integrated Model. *Journal of Service Research*, 10(2), pp.123-142.

Donabedian, A.(1988) The quality of care: How can it be assessed? *JAMA* September 23/30, 260(12): p.1743-1748

Heywood, P. & Harahap, N.P., (2009). Public funding of health at the district level in Indonesia after decentralization-sources, flows and contradictions. *Health research policy and systems / BioMed Central*, 7(5). [Online]Available from: http://www.biomedcentral.com/content/pdf/1478-4505-7-5.pdf [Accessed 1 July 2012]

Massaut, S., Broek, J. van den and Kwaak, A. van der, (2009). QUOTE TB Light. Tuberculosis Coalition for Technical Assistance.

Massaut, S., Kwaak, A. van der, (2010) Patient Centered Approach Strategy. Tuberculosis Coalition for Technical Assistance.

Mesfin, M.M., Newell, J.N., Walley, J.D., Gessessew, A., Tesfaye, T., Lemma, F. and Madeley, R. (2009). Quality of tuberculosis care and its association with patient adherence to treatment in eight Ethiopian districts. *Health Policy and Planning* 2009, 24: p.457-466.

Mitnick, C., Bayona, J., Palacios, E., Shin, S., Furin, J., Alcantara, F., Sanchez, E., Sarria, M., Becerra, M, Fawzi, M.C.S., Kapiga, S., Neuberg, D., Maguire, J.H., Kim, J.Y., and Farmer, P., (2003). Community-Based Therapy for Multidrug-Resistant Tuberculosis in Lima, Peru. *The New England Journal of Medicine*, 348(2): pp.119-128

MOH-ROI (2010A). *Rencana Strategis Kementerian Kesehatan tahun 2010-2014* (Strategic Plan of MOH 2010-2014). Jakarta: Ministry of Health Republic of Indonesia.

MOH-ROI (2010B). Breakthrough toward Universal Access, TB control National strategy in Indonesia: 2010-2014. Jakarta: Ministry of Health Republic of Indonesia.

MOH-ROI (2011A). Indonesia Health Profile 2010. Jakarta: Ministry of Health Republic of Indonesia

MOH-ROI (2011B). National PMDT guideline. (unpublished)

Munro, S.A., Lewin, S.A., Smith, H.J., Engel, M.E., Fretheim, A. and Volmink, J., (2007). Patient adherence to tuberculosis treatment: a systematic review of qualitative research. *PLoS Medicine* 4(7): e238

NTP (2012). Monthly PMDT data – National TB control Program (NTP) Indonesia (unpublished)

Shin, S., Furin, J., Bayona, J., Mate, K., Kim, J.Y. and Farmer, P. (2004). Community-based treatment of multidrug-resistant tuberculosis in Lima, Peru: 7 years of experience. *Social Science & Medicine* 59(2004): p. 1529-1539

Silva, A. (2000). A framework for measuring responsiveness. GPE discussion paper series 32, World Health Organization [Online] Available from: http://www.who.int/healthinfo/paper32.pdf [accessed on 10 February 2012]

Stop TB Partnership (2011). The Global Plan to Stop TB 2011-2015: transforming the fight towards elimination of tuberculosis. World Health Organization.

TBCTA (2007). QUOTE –TB: Guide for improving TB care as seen through the eyes of the patient. Amsterdam: Tuberculosis Coalition for Technical Assistance.

TBCTA (2009). International Standards for Tuberculosis Care (ISTC), second edition. The Hague: Tuberculosis Coalition for Technical Assistance.

UNDP (2011). Human Development Report 2011: Indonesia. United Nations Development Program. [Online]. Available from: http://hdrstats.undp.org/images/explanations/IDN.pdf [Accessed 1 July 2012]

Vermeire, E., Hearnshaw, H., Royen, P.V., and Denekens, J., (2001). Patient adherence to treatment: three decades of research. A comprehensive review. *Journal of Clinical Pharmacy and Therapeutics* (2001) 26: p.331-342.

WCC (2006). The Patients' Charter for Tuberculosis Care: Patients' rights and responsibilities. World Care Council.

Weyer, K. and Holtz, T., (2005). Factors associated with default from Multidrug resistant Tuberculosis treatment, South Africa, 1999-2001. Medical Research Council Pretoria and Centers for Disease Control and Prevention Atlanta.

WHO (2006). Quality of care: a process for making strategic choices in health systems. France: World Health Organization.

WHO (2007). Indonesia: National Health System Profile. World Health Organization. [Online]. Available from: http://www.searo.who.int/LinkFiles/Indonesia_CHP-Indonesia.pdf [Accessed 1 July 2012]

WHO (2009A). Death estimates for 2008 and DALY estimates for 2004 by cause for WHO member States. World Health Organization. [Online]. Available from: http://www.who.int/healthinfo/global_burden_disease/estimates_country/en/index.html [Accessed 12 April 2012]

WHO (2009B). Divisive drug-resistance. *Bulletin World Health Organization* July 2009, 87(7): p.493-494.

WHO (2010A). Multidrug and extensively drug-resistant TB (M/XDR-TB): 2010 global report on surveillance and response. France: World Health Organization.

WHO (2010B). National Expenditure on Health. World Health Organization [Online]. Available from: http://www.apps.who.int/nha/database/StandardReport.aspx?ID=REP_WEB_MINI_TEMPLATE_WEB_VERSION&COUNTRYKEY=84604 [Accessed 14 April 2012]

WHO (2011A). Indonesia health profile. World Health Organization [Online]. Available from: http://www.who.int/gho/countries/idn.pdf [Accessed 12 April 2012]

WHO (2011B). TB/HIV in the South-East Asia Region: Status Report. New Delhi: World Health Organization.

WHO (2011C). Tuberculosis in the South East Asia Region: the Regional Report 2011. India: World Health Organization.

WHO (2011D). Global tuberculosis control: WHO report 2011. France: World Health Organization.

WHO (2011E). Guidelines for the programmatic management of drug-resistant tuberculosis. Geneva: World Health Organization.

WHO (2011F). Towards universal access to diagnosis and treatment of multidrug-resistant and extensively drug-resistant tuberculosis by 2015: WHO progress report 2011. France. World Health Organization.

Widjanarko B., Gompelman M., Dijkers M. and Werf M.J. van der (2009). Factors that influence treatment adherence of tuberculosis patients living in Java, Indonesia. *Patient Preference and Adherence* 2009 (3): p.231-238.

World Bank (2007). Spending for Development: Making the most of Indonesia's new opportunities. Washington DC: World Bank.

## Annex 1. Research table

| Objectives | Issues | Techniques | Target population |
|---|---|---|---|
| 1. To explore the perceptions of patients with respect to good quality of MDR TB care | communication and information, professional competence, availability of services, affordability, patient provider interaction and counselling, TB/HIV, support, infrastructure, stigma | Focus Group Discussion, Ranking, | - MDR TB patients who are under treatment in hospital and in health centre<br>- MDR TB patients who defaulted from treatment |
| 2. To assess the performance of services as experienced by MDR TB patients based on various quality dimensions | communication and information, professional competence, availability of services, affordability, patient provider interaction and counselling, TB/HIV, support, infrastructure, stigma | Semi-structured interview | - MDR TB patients who are under treatment in hospital and in health centre<br>- MDR TB patients who defaulted from treatment |
| 3. To compare the perception on quality of MDR TB care of patients served by health centres and patients served by the hospital | Quality impact differences and similarities in the appreciation of the patients' perception | analysis | |
| 4. To explore provider's view on their patients' perception on quality of MDR TB care | communication and information, professional competence, availability of services, affordability, patient provider interaction and counselling, TB/HIV, support, infrastructure, stigma | In depth interview | Providers in hospital and health centre |

## Annex 2. Data collection tools

### A. FGD topic guides

*1. Introduction (15 minutes)*

- Facilitator introduction to topic, aim, purpose and limitations to benefit
- Discussion regarding confidentiality and anonymity of FGD's
- Explanation of the recording of the FGDs
- Ground rules for the FGD to be made together and to be put up to be observed during discussion
- Ice breaker and introduction exercise

*2. Current view of your local healthcare services (15 minutes)*

- Individually or in groups, draw your current experience/view/ opinion of your local healthcare services during your MDR TB treatment if the facilitator didn't feel comfortable they can ask people without drawing
- Each group/ individual to present and explain their drawing-discuss to be generated by presentations
- Prompt: What did you like most about it and why?

*3. Patient centred services (30 minutes)*

- Write down or draw (by facilitator) what you think are the most important aspects of health services which response to patient needs and rights?
- Prioritize the top 5 aspects and explain the drawing the reasons behind your choice
- I will mention to you nine general topics on good quality of MDR TB care (NB. Interviewer: Show all pictures to the health provider). What is for you the most important topic in terms of good quality of MDR TB care? (NB Interviewer: this topic gets rank. nr. 1). And what is the second most important topic? (NB. Interviewer: this topic gets rank nr. 2). And what is the third most important topic? (NB. Interviewer: this topic gets nr. 3), etc.

| | |
|---|---|
| 1. Availability of TB services | Rank ____ |
| 2. Information | Rank ____ |
| 3. Provider interaction and counselling | Rank ____ |
| 4. TB – HIV relationship | Rank ____ |
| 5. Infrastructure | Rank ____ |
| 6. Procedures and tests | Rank ____ |
| 7. Costs and payment | Rank ____ |
| 8. Support | Rank ____ |
| 9. Stigma | Rank ____ |

- Which services of this facility need improvement?

*4. Making healthcare services patient centred (20 minutes)*

- Using your current drawing makes changes and additions to it to reflex what changes are needed to provide MDR TB services? explain it.- are changes feasible/not and why? What community can do to help MDR TB patient to express their needs and demand their rights? What do they do now and how does it work?
- What health service provider can do to improve health services to response the patient needs and rights? What do they do now and how does it work?
- How can/could you be best supported by the health service/facility in regards to:
    - Adherence to your treatment
    - Attending your appointments
    - Psycho-social support especially in relation to stigma
    - Testing and diagnosis of contacts
- Prompting questions: How do you think those changes will improve your experience as a patient?

*5. Conclusion/Debrief (10 minutes)*

- Each participant is given a chance to add anything else
- How can we improve the group activity for next time?
- Thank participants

**B. Patient survey questionnaire**
(Standard tool from QUOTE TB Light)

**Instructions to the interviewer**
When a patient has finished his/her consultation with the clinic staff, ask him/her if he/she is willing to answer questions about the quality of MDR TB services he/she has received. It is essential that you gain his/her **informed consent** before beginning the interview, so the following introduction should be given.

Greet the patient: "Hello. My name is ....."
I am interested in what you think about the MDR TB services provided at this health facility. I would like to hear your views of your local health service and the MDR TB care you receive in this facility. I would be very grateful if you could spend some time talking with me. I will not write down your name, and everything you tell me will be kept strictly confidential. Your participation is voluntary and you are not obliged to answer any questions you do not want to. Participating in this interview will not negatively affect the subsequent services you will get. Do I have your permission to continue?"

If no > stop the interview, thank the patient, note 'one refusal' on the non-respondent form, wait for another patient
If yes > continue with the interview

Name Interviewer
Date of interview
Interview conducted in: Specify language. .....
Interview conducted at: [1]☐ Hospital
[2]☐ Health Centre.....

**SECTION A : SOCIO-DEMOGRAPHIC CHARACTERISTICS AND GENERAL QUESTIONS**

**1. Patient's sex** 1☐ Male 2☐ Female
**2. Patient's age** .....years
**3. What is your highest level of education?**
[1]☐ None
[2]☐ Primary (Primary 1-6)
[3]☐ Junior Secondary (JHS 1-3)
[4]☐ Senior Secondary (SHS 4-6)
[5]☐ Tertiary
[6]☐ Other: .....

**4. What is the main source of your livelihood?**
[1]☐ None/informal

[2]☐ student
[3]☐ employed
[4]☐ housewife

**5. When were you diagnosed with MDR TB after onset of symptoms?**
(write response in dotted space and also check the corresponding option below)
……
[1]☐ Within three (3) weeks after the onset of symptoms
[2]☐ Three (3) to eight (8) weeks after the onset of symptoms
[3]☐ More than eight (8) weeks after the onset of symptoms

**6. After diagnosis, when did you start MDR TB treatment?**
[1]☐ Within two (2) days
[2]☐ Within one (1) week
[3]☐ More than one (1) week

**7. What was/were the reason(s) for your visit to the health facility? (Multiple answers possible)**
[1]☐ Diagnosis, specify: ……
[2]☐ Drug collection, specify: ……
[3]☐ Information/advice, specify: ……
[4]☐ Follow up sputum examination
[5]☐ Other, specify: ……

**8. In case of defaulter: why did you stop coming?**
(write response in dotted space below)
……

**SECTION B : PERFORMANCE OF THE FACILITY**
The next part of the survey is about the quality of MDR TB care that you received during your visits to this facility. Please answer the questions in this part of the survey about this facility only. Do not include any other facilities in your answer.

**B-1: AVAILABILITY OF TB SERVICES**
First, I would like you to rate eight aspects that have to do with the availability of MDR TB services.

| | |
|---|---|
| 1. Are the waiting time(s) before being served by health providers of this facility acceptable to you? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 2. How often are you attended to by the same health providers in this facility? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 3. How often are the service hours of this facility inconvenient for you to get your MDR TB treatment? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 4. How often are drugs not available when you require them? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 5. How often do you experience difficulties in obtaining MDR TB services in this facility because of language barriers? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |

| | |
|---|---|
| 6. Is this health facility easy to reach (distance)? | [1]☐ Yes [2]☐ No |
| 7. How often are MDR TB services available during the working hours of this facility? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 8. How often are the relevant health providers you come to see in this facility available? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |

## B-2: COMMUNICATION AND INFORMATION

Next, I would like you to rate six items that have to do with communication and information about MDR TB and its treatment.

| | |
|---|---|
| 1. Do the health providers in this facility tell you when you stop spreading MDR TB to others? | [1]☐ Yes [2]☐ No |
| 2. Do the health providers in this facility tell you that MDR TB can be cured? | [1]☐ Yes [2]☐ No |
| 3. Do the health providers in this facility tell you about the importance of observed treatment? | [1]☐ Yes [2]☐ No |
| 4. Do the health providers in this facility tell you about the side effects of MDR TB drugs? | [1]☐ Yes [2]☐ No |
| 5. Do the health providers in this facility tell you about the need for sputum tests at given points during your treatment schedule? | [1]☐ Yes [2]☐ No |
| 6. Do the health providers in this facility tell you about the duration of the MDR TB treatment? | [1]☐ Yes [2]☐ No |

## B-3: PATIENT – PROVIDER INTERACTION AND COUNSELLING

Next, I would like to ask you about eight aspects that have to do with the interaction between MDR TB patients and health care providers.

| | |
|---|---|
| 1. During your visits to this facility, how often does the health provider treat you with respect? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 2. During your visits to this facility, how often does the health provider listen carefully to you? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 3. During your visits to this facility, how often do health providers explain things in a way you can understand? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 4. During your visits to this facility, how often do you have sufficient time to discuss your problems? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 5. During your visits to this facility, how often do health providers discuss with you how to deal with your problems? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 6. During your visits to this facility, how often do you experience discrimination because you have MDR TB? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 7. During your visits to this facility, how often is your privacy respected during examination? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 8. Do health providers at this facility tell you how MDR TB can affect your every day life | [1]☐ Yes [2]☐ No |

## B-4: TB – HIV RELATIONSHIP

Next, I would like to ask you five questions about the link between **MDR** TB and HIV.

| | |
|---|---|
| 1. Did health providers in the facility inform you about the link between MDR TB and HIV? (If the answer is no, skip to B-5). | [1]☐ Yes [2]☐ No |
| 2. Were you informed by the health providers in this facility on how to prevent HIV infection? | [1]☐ Yes [2]☐ No |
| 3. After being diagnosed with MDR TB, were you advised to take an HIV test? | [1]☐ Yes [2]☐ No |

| | |
|---|---|
| 4. Were you informed where to get HIV-treatment in case you might need this? | [1]☐ Yes [2]☐ No [9]☐ not applicable |
| 5. Were you supported in case of being HIV positive in taking MDR TB and HIV treatment at the same time? | ☐ Yes [2]☐ No [9]☐ not applicable |

## B-5: INFRASTRUCTURE

Next, I would like to ask you about five aspects that have to do with the infrastructure of the MDR TB facility you are visiting.

| | |
|---|---|
| 1. How often is this facility clean? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 2. Is there safe drinking water in this facility? | [1]☐ Yes [2]☐ No |
| 3. How often are the toilets in this facility usable? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 4. Are there enough comfortable places to sit on in this facility? | [1]☐ Yes [2]☐ No |
| 5. Are people who come in with a cough given priority by the health providers? | ☐ Yes [2]☐ No |

## B-6: PROFESSIONAL COMPETENCE

Next, I would like to ask you three questions about MDR TB procedures and tests.

| | |
|---|---|
| 1. Were you physically examined during your first visit to this health facility? | [1]☐ Yes [2]☐ No |
| 2. In case of germs in your sputum that cause MDR TB, were your close contacts examined by the MDR TB facility? | [1]☐ Yes [2]☐ No |
| 3. How often is there a treatment observer checking on your daily intake of MDR TB drugs? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |

## B-7: AFFORDABILITY

Next, I would like to ask you about three aspects that have to do with the costs of MDR TB services.

| | |
|---|---|
| 1. How often do you have to pay for your regular MDR TB services (e.g. sputum tests, MDR TB-drugs, X-rays, etc.)? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 2. How often do you have to pay a tip in order to receive MDR TB services? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 3. How often do costs (e.g. transport) prevent you from getting to the health facility? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |

## B-8: SUPPORT

I would like to ask you about aspect that has to do with the support received from the MDR TB facility you are visiting.

| | |
|---|---|
| 1. How often do you receive transport support from the health facility? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |

## B-9: STIGMA

To conclude this exercise, I would like to ask you about five aspects that have to do with stigma issues in relation to the MDR TB facility you are visiting.

| | |
|---|---|
| 1. Does the health provider talk to you the same way you are spoken to when you receive services other than MDR TB? | [1]☐ Never [2]☐ Sometimes [3]☐ Usually [4]☐ Always |
| 2. Does the health provider serve you friendly? | [1]☐ Never [2]☐ Sometimes |

| | |
|---|---|
| | [3]☐ Usually [4]☐ Always |
| 3. Does the health provider welcome you into the health facility when you visit for MDR TB services? | [1]☐ Never [2]☐ Sometimes<br>[3]☐ Usually [4]☐ Always |
| 4. Does the health provider turn his/her face away when speaking with you? | [1]☐ Never [2]☐ Sometimes<br>[3]☐ Usually [4]☐ Always |
| 5. Do you feel that you are treated with dignity when you visit the health facility? | [1]☐ Yes [2]☐ No |

## SECTION C: INTERVIEW SETTING

### 1. Facility

| | |
|---|---|
| Health facility name | |
| District | |
| TB Zone | |

### 2. Level of facility (country specific)

[1]☐ Tertiary Hospital
[2]☐ General Hospital
[3]☐ Primary Health centre
[4]☐ Dispensary

### 3. Type of facility (country specific)

[1]☐ Government
[2]☐ Private for profit
[3]☐ Private not for profit
[4]☐ NGO/ Missionary

### 4. Locality of facility

[1]☐ Rural
[2]☐ Urban

## C. In-depth Interview topic guides

### Instructions to the interviewer

Before you start interviewing the health providers, ask him/her if he/she is willing to answer questions about the quality of MDR TB services perceived by his/her patients. It is essential that you gain his/her **informed consent** before beginning the interview, so the following introduction should be given.

Greet the health provider: "Hello. My name is ....."
I am interested in what you think about your patients' perception on quality of MDR TB care provided at this health facility. I would be very grateful if you could spend some time talking with me. I will not write down your name, and everything you tell me will be kept strictly confidential. Your participation is voluntary and you are not obliged to answer any questions you do not want to. Participating in this interview will not negatively affect your work. Do I have your permission to continue?"

If no > stop the interview, thank the health provider, note 'one refusal' on the
non-respondent form, wait for another health provider
If yes > continue with the interview

Name Interviewer
Date of interview
Interview conducted in: Specify language. …….
Interview conducted at: Hospital: [1]☐ Yes [2]☐ No
Health Centre, specify where:……

1. Write down or draw (by facilitator) what you think are the most important aspects of health services which response to patient needs and rights '?
2. Prioritize the top 5 important aspects and explain the reasons behind your choice
3. I will mention to you nine general topics on good quality of MDR TB care (NB. Interviewer: Show all pictures to the health provider). What is for you the <u>most important topic</u> in terms of good quality of MDR TB care? (NB Interviewer: this topic gets rank. nr. 1). <u>And what is the second most important topic</u>? (NB. Interviewer: this topic gets rank nr. 2).<u>And what is the third most important topic</u>? (NB. Interviewer: this topic gets nr. 3).

| | |
|---|---|
| A. Availability of TB services | Rank ____ |
| B. Information | Rank ____ |
| C. Provider interaction and counselling | Rank ____ |
| D. TB – HIV relationship | Rank ____ |

| | |
|---|---|
| E. Infrastructure | Rank ____ |
| F. Procedures and tests | Rank ____ |
| G. Costs and payment | Rank ____ |
| H. Support | Rank ____ |
| I. Stigma | Rank ____ |

4. Which services of this facility need improvement?
5. What health service provider can do to improve health services to response the patient needs and rights? What do they do now and how does it work?
6. How can/could the patient be best supported by the health service/facility in regards to:
    a. Adherence to your treatment
    b. Attending your appointments
    c. Psycho-social support especially in relation to stigma
    d. Testing and diagnosis of contacts
7. Prompting questions: How do you think those changes will improve their experience as a patient?

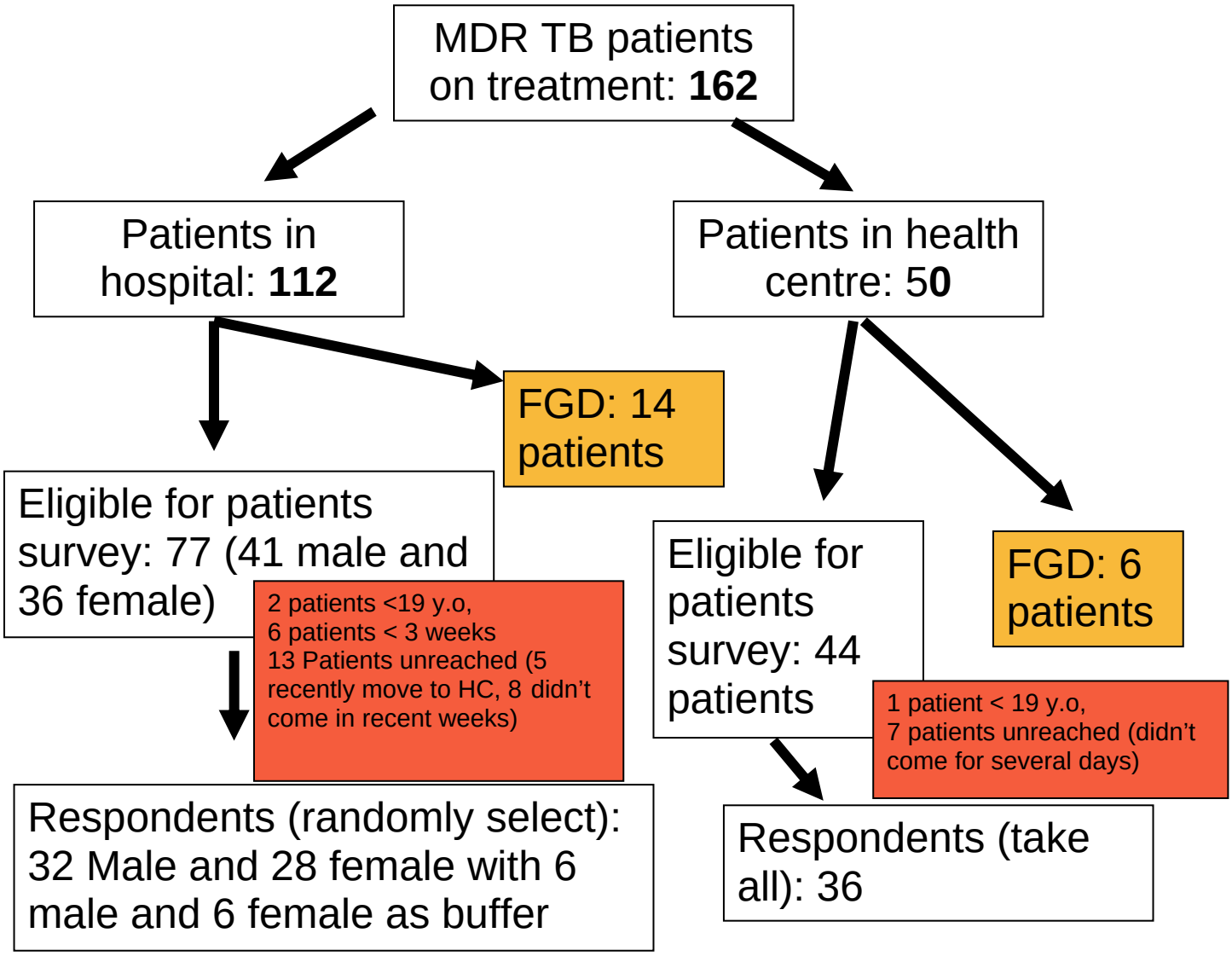
Interviewer: Give a chance to participant to add anything else and thank participant.

## Annex 3. List of Health Facilities

Health Facilities Participating in Perceived Quality of Care Study and Expected and Interviewed patients (patient survey) in each facility

| Facility ID | Facility Type and Name | Municipality | Expected number of patients | Interviewed number of patients | Remarks |
|---|---|---|---|---|---|
| 101 | **Hospital Persahabatan** | East Jakarta | 60 | 60 | include IDI and FGD |
| 201 | **Health Centre Duren Sawit** | East Jakarta | 3 | 3 | include IDI |
| 202 | **Health Centre Ciracas** | East Jakarta | 8 | 7 | include IDI |
| 203 | **Health Centre Kramat Jati** | East Jakarta | 5 | 5 | include IDI |
| 204 | **Health Centre Cipayung** | East Jakarta | 8 | 8 | include IDI |
| 205 | **Health Centre Pulo Gadung** | East Jakarta | 0 | 0 | only for IDI |
| 206 | **Health Centre Kebayoran Baru** | South Jakarta | 2 | 2 | |
| 207 | **Health Centre Grogol Petamburan** | West Jakarta | 5 | 3 | |
| 208 | **Health Centre Senen** | Central Jakarta | 4 | 4 | |
| 209 | **Health Centre Cilincing** | North Jakarta | 3 | 1 | |
| 210 | **Health Centre Tambora** | West Jakarta | 2 | 0 | |
| 211 | **Health Centre Koja** | North Jakarta | 3 | 3 | |
| 212 | **Health Centre Kebayoran Lama** | South Jakarta | 0 | 0 | only for FGD |
| | **TOTAL** | | **103** | **96** | |

**Annex 4. The Flowchart of respondent's recruitment**



## Annex 5. Consent form

### A. Informed consent for focus group discussion with patients

**Part I: Information**

Good morning/afternoon. My name is _____. I work as researcher from ……. We are studying about perceived quality of MDR TB care. We would like to investigate how patients feel about the care and the services they get to cure TB. We will interview patients in health centres and in Persabahatan hospital. We would like to know how you, as a TB patient, feel about the service you get from the staff here at this hospital/centre.

Some of the questions asked might be considered personal or intrusive. You may know some of the people in the group but we ask that you protect their confidentiality as they should protect yours. Unfortunately we are unable to guarantee this and therefore requested that you don't discuss any sensitive or personal information of your own. Your participation in this research is entirely voluntary. At any time you do not want to answer a question or discuss an issue, you are free not to do so. You are also free to withdraw from the group discussion at any time. The decision about whether or not to participate in this study or to answer any specific question will not have any impact on your or your family's access to MDR TB services or any other health program in your area.

This discussion will last about 90 minutes. Your name will only be recorded on the certificate of consent, which will be kept separate from the interviews and discussions. We like to ask your permission to tape record the interview. The tapes will be destroyed after the finalization of the study. The information gathered will only be used for the stated purpose. We will not mention your name or address anywhere outside this room. Your names will not be used in any reports and you can even give an alias name when you introduce yourself.

The intention for this research is to contribute improving the quality of MDR TB services, in particular from the perspective of you as a patient. This will come up with recommendations on how MDR TB services could possibly be improved.

In case you need assistance or want to discuss private issues related to MDR TB we will refer you to the right person. Or you may contact any of the following: (name, address/telephone number/email)

**Part II: Certificate of consent**

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Respondent's Name: ……(Signature……) (Date……)

Interviewer's Name: ……(Signature……) (Date……..)

## B. Informed consent for patient survey

### Part I: Information

Good morning/afternoon. My name is _____. I work as researcher from ……. We are studying about perceived quality of MDR TB care.

We would like to investigate how patients feel about the care and the services they get to cure TB. We will interview patients in health centres and in Persabahatan hospital. We would like to know how you, as a TB patient, feel about the service you get from the staff here at this hospital/centre.

Some of the questions asked might be considered personal or intrusive. Your participation in this research is entirely voluntary. At any time you do not want to answer a question or discuss an issue, you are free not to do so. You are also free to withdraw from the interview and study at any time. The decision about whether or not to participate in this study or to answer any specific question will not have any impact on your or your family's access to MDR TB services or any other health program in your area.

The interview will last about 30 minutes. The interview will be strictly confidential. The responses will not be shared with anyone. Your name will only be recorded on the certificate of consent, which will be kept separate from the interviews and discussions. Your interview responses will be combined with responses from other respondents and no one will be able to identify your responses. The information gathered will only be used for the stated purpose. We will not mention your name or address anywhere outside this room. We will give you a number code which we will use instead of names.

The intention for this research is to contribute improving the quality of MDR TB services, in particular from the perspective of you as a patient. This will come up with recommendations on how MDR TB services could possibly be improved.

In case you need assistance or want to discuss private issues related to MDR TB we will refer you to the right person. Or you may contact any of the following: (name, address/telephone number/email)

**Part II: Certificate of consent**

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Respondent's Name: ……(Signature……) (Date……)

Interviewer's Name: ……(Signature……) (Date……)

## C. Informed consent for In-depth interview with health providers

### Part I: Information

Good morning/afternoon. My name is _____. I work as researcher from ……. We are studying about perceived quality of MDR TB care.

We would like to investigate how patients feel about the care and the services they get to cure TB. We will interview patients in health centres and in Persabahatan hospital. We would like to know your view, as a health provider, on your patients' perception on quality of MDR TB care

Some of the questions asked might be considered personal or intrusive. Your participation in this research is entirely voluntary. At any time you do not want to answer a question or discuss an issue, you are free not to do so. You are also free to withdraw from the interview and study at any time. The decision about whether or not to participate in this study or to answer any specific question will not have any impact on your work.

The interview will last about 30 minutes. The interview will be strictly confidential. The responses will not be shared with anyone. Your name will only be recorded on the certificate of consent, which will be kept separate from the interviews and discussions. We like to ask your permission to tape record the interview. Your interview responses will be combined with responses from other respondents and no one will be able to identify your responses. The tapes will be destroyed after the finalization of the study. The information gathered will only be used for the stated purpose. We will not mention your name or address anywhere outside this room. We will give you a number code which we will use instead of names.

The intention for this research is to contribute improving the quality of MDR TB services, in particular from the perspective of you as a patient. This will come up with recommendations on how MDR TB services could possibly be improved.

In case you need assistance or want to discuss private issues related to MDR TB we will refer you to the right person. Or you may contact any of the following: (name, address/telephone number/email)

**Part II: Certificate of consent**

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Respondent's Name: ……(Signature……) (Date……)

Interviewer's Name: ……(Signature……) (Date……)

## Annex 6. Performance, importance and QI scores

### Performance, importance and QI scores of MDR TB patients survey in Jakarta, 2012

| | Quality Dimensions | | N1 | N2 | P-1 (%) | P-2 | I-1 | I-2 (%) | QI |
|---|---|---|---|---|---|---|---|---|---|
| | **1. Availability of services** | | | | | | | | |
| 1 | Waiting times | Hospital | 61 | 71 | 3.65 | 8.2 | 6.7 | 74 | 0.6 |
| | | Health centre | 37 | 36 | 3.62 | 10.8 | 9.0 | 100 | 1.1 |
| 2 | Same provider | Hospital | 61 | 71 | 3.44 | 6.5 | 6.7 | 74 | 0.5 |
| | | Health centre | 37 | 36 | 3.67 | 8.1 | 9.0 | 100 | 0.8 |
| 3 | Convenient hours | Hospital | 61 | 71 | 1.49 | 11.4 | 6.7 | 74 | 0.9 |
| | | Health centre | 37 | 36 | 1.38 | 8.1 | 9.0 | 100 | 0.8 |
| 4 | Drugs available | Hospital | 61 | 71 | 1.16 | 4.9 | 6.7 | 74 | 0.4 |
| | | Health centre | 37 | 36 | 1.24 | 8.1 | 9.0 | 100 | 0.8 |
| 5 | Language barrier | Hospital | 61 | 71 | 1.21 | 4.9 | 6.7 | 74 | 0.4 |
| | | Health centre | 37 | 36 | 1.11 | 2.7 | 9.0 | 100 | 0.3 |
| 6 | Easy to reach | Hospital | 61 | 71 | 1.26 | 26.2 | 6.7 | 74 | 1.9 |
| | | Health centre | 37 | 36 | 1.19 | 18.9 | 9.0 | 100 | 1.9 |
| 7 | Service available | Hospital | 61 | 71 | 3.93 | 1.6 | 6.7 | 74 | 0.1 |
| | | Health centre | 37 | 36 | 3.84 | 2.7 | 9.0 | 100 | 0.3 |
| 8 | Providers available | Hospital | 61 | 71 | 3.75 | 6.5 | 6.7 | 74 | 0.5 |
| | | Health centre | 37 | 36 | 3.86 | 2.7 | 9.0 | 100 | 0.3 |
| | **2. Communication and Information** | | | | | | | | |
| 9 | Infectiousness | Hospital | 61 | 71 | 1.31 | 31.1 | 6.7 | 74 | 2.3 |
| | | Health centre | 37 | 36 | 1.62 | 62.1 | 6.0 | 67 | 4.1 |
| 10 | Curability | Hospital | 61 | 71 | 1.08 | 8.2 | 6.7 | 74 | 0.6 |
| | | Health centre | 37 | 36 | 1.48 | 48.6 | 6.0 | 67 | 3.2 |
| 11 | Regular DOTS | Hospital | 61 | 71 | 1.06 | 6.5 | 6.7 | 74 | 0.5 |
| | | Health centre | 37 | 36 | 1.32 | 32.4 | 6.0 | 67 | 2.2 |
| 12 | Side effects | Hospital | 61 | 71 | 1.19 | 19.6 | 6.7 | 74 | 1.5 |
| | | Health centre | 37 | 36 | 1.51 | 51.3 | 6.0 | 67 | 3.4 |
| 13 | Regular sputum tests | Hospital | 61 | 71 | 1.03 | 3.2 | 6.7 | 74 | 0.2 |
| | | Health centre | 37 | 36 | 1.54 | 54.0 | 6.0 | 67 | 3.6 |
| 14 | Duration treatment | Hospital | 61 | 71 | 1.01 | 1.6 | 6.7 | 74 | 0.1 |
| | | Health centre | 37 | 36 | 1.46 | 45.9 | 6.0 | 67 | 3.1 |
| | **3. Patient Provider interaction and counselling** | | | | | | | | |
| 15 | Respect | Hospital | 61 | 71 | 3.82 | 4.9 | 7.0 | 78 | 0.38 |
| | | Health centre | 37 | 36 | 3.78 | 2.7 | 5.0 | 56 | 0.15 |
| 16 | Listen carefully to me | Hospital | 61 | 71 | 3.72 | 4.9 | 7.0 | 78 | 0.38 |
| | | Health centre | 37 | 36 | 3.73 | 8.1 | 5.0 | 56 | 0.45 |
| 17 | Explain things | Hospital | 61 | 71 | 3.59 | 6.5 | 7.0 | 78 | 0.5 |
| | | Health centre | 37 | 36 | 3.54 | 13.5 | 5.0 | 56 | 0.75 |
| 18 | Sufficient time | Hospital | 61 | 71 | 3.51 | 13.1 | 7.0 | 78 | 1.02 |
| | | Health centre | 37 | 36 | 3.65 | 8.1 | 5.0 | 56 | 0.45 |
| 19 | Deal with | Hospital | 61 | 71 | 3.42 | 14.7 | 7.0 | 78 | 1.15 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | problems | Health centre | 37 | 36 | 3.4 | 16.2 | 5.0 | 56 | 0.9 |
| 20 | Discrimination | Hospital | 61 | 71 | 1.31 | 8.2 | 7.0 | 78 | 0.64 |
| | | Health centre | 37 | 36 | 1.18 | 2.7 | 5.0 | 56 | 0.15 |
| 21 | Privacy respected | Hospital | 61 | 71 | 3.68 | 4.9 | 7.0 | 78 | 0.38 |
| | | Health centre | 37 | 36 | 3.81 | 0 | 5.0 | 56 | 0 |
| 22 | TB affects life | Hospital | 61 | 71 | 1.1 | 9.8 | 7.0 | 78 | 0.76 |
| | | Health centre | 37 | 36 | 1.13 | 13.5 | 5.0 | 56 | 0.75 |
| | **4. TB/HIV interaction** | | | | | | | | |
| 23 | Link TB and HIV | Hospital | 61 | 71 | 1.83 | 83.6 | 1.0 | 11 | 0.92 |
| | | Health centre | 37 | 36 | 1.75 | 75.6 | 1.0 | 11 | 0.84 |
| | **5. Infrastructure** | | | | | | | | |
| 24 | Clean | Hospital | 61 | 71 | 3.42 | 18 | 3.7 | 41 | 0.73 |
| | | Health centre | 37 | 36 | 3.46 | 13.5 | 4.0 | 44 | 0.6 |
| 25 | Drinking water | Hospital | 61 | 71 | 1.96 | 96.7 | 3.7 | 41 | 3.94 |
| | | Health centre | 37 | 36 | 1.89 | 89.2 | 4.0 | 44 | 3.96 |
| 26 | Toilets | Hospital | 61 | 71 | 3.05 | 36 | 3.7 | 41 | 1.47 |
| | | Health centre | 37 | 36 | 2.29 | 56.7 | 4.0 | 44 | 2.52 |
| 27 | Benches | Hospital | 61 | 71 | 1.28 | 27.8 | 3.7 | 41 | 1.13 |
| | | Health centre | 37 | 36 | 1.19 | 18.9 | 4.0 | 44 | 0.84 |
| 28 | Cough priority | Hospital | 61 | 71 | 1.56 | 55.7 | 3.7 | 41 | 2.27 |
| | | Health centre | 37 | 36 | 1.32 | 32.4 | 4.0 | 44 | 1.44 |
| | **6. Professional competence** | | | | | | | | |
| 29 | Physical exam | Hospital | 61 | 71 | 1.08 | 8.2 | 4.3 | 48 | 0.39 |
| | | Health centre | 37 | 36 | 1.67 | 67.5 | 3.0 | 33 | 2.25 |
| 30 | Contacts examined | Hospital | 61 | 71 | 1.85 | 85.2 | 4.3 | 48 | 4,10 |
| | | Health centre | 37 | 36 | 1.65 | 64.8 | 3.0 | 33 | 2.16 |
| 31 | Treatment observer | Hospital | 61 | 71 | 2.37 | 57.3 | 4.3 | 48 | 2.76 |
| | | Health centre | 37 | 36 | 3.27 | 21.6 | 3.0 | 33 | 0.72 |
| | **7. Affordability** | | | | | | | | |
| 32 | Pay for services | Hospital | 61 | 71 | 1.13 | 3.2 | 4.7 | 52 | 0.17 |
| | | Health centre | 37 | 36 | 1.02 | 0 | 7.0 | 78 | 0 |
| 33 | Pay a tip | Hospital | 61 | 71 | 1 | 0 | 4.7 | 52 | 0 |
| | | Health centre | 37 | 36 | 1 | 0 | 7.0 | 78 | 0 |
| 34 | Transport | Hospital | 61 | 71 | 1.65 | 18 | 4.7 | 52 | 0.93 |
| | | Health centre | 37 | 36 | 1.46 | 8.1 | 7.0 | 78 | 0.63 |
| | **8. Support** | | | | | | | | |
| 35 | Transport support | Hospital | 61 | 71 | 2.13 | 62.2 | 9.0 | 100 | 6.23 |
| | | Health centre | 37 | 36 | 3.11 | 29.7 | 8 | 89 | 2.64 |
| | **9. Stigma** | | | | | | | | |
| 36 | Equal treatment | Hospital | 61 | 71 | 3.47 | 14.7 | 2.0 | 22 | 0.32 |
| | | Health centre | 37 | 36 | 3.7 | 5.4 | 2 | 22 | 0.12 |
| 37 | Friendly | Hospital | 61 | 71 | 3.75 | 3.2 | 2.0 | 22 | 0.07 |
| | | Health centre | 37 | 36 | 3.86 | 0 | 2 | 22 | 0 |
| 38 | Greet/ welcoming | Hospital | 61 | 71 | 3.87 | 3.2 | 2.0 | 22 | 0.07 |
| | | Health centre | 37 | 36 | 3.73 | 5.4 | 2 | 22 | 0.12 |
| 39 | Direct | Hospital | 61 | 71 | 1.05 | 0 | 2.0 | 22 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 40 | communication | Health centre | 37 | 36 | 1.13 | 2.7 | 2 | 22 | 0.06 |
| | Dignity | Hospital | 61 | 71 | 1.03 | 3.2 | 2.0 | 22 | 0.07 |
| | | Health centre | 37 | 36 | 1 | 0 | 2 | 22 | 0 |

Notes:

- N1 and N2 refer to the total number of respondents in the performance data set (N1) and in the importance data set (N2)
- Mean scores on performance (P-1)
- Percentage of respondents in the “sometimes” and “never” or “no” categories on performance (P-2)
- Mean scores of importance (I-1)
- Percentage of respondents in the “extremely important” category on importance (I-2)
- Combination of P-2 and I-2 giving the quality impact (QI)

## Annex 7. Comparison perceived quality of care between patients treated in hospital and health centres

### A. Comparison of average ratings per quality sub-dimension between patients treated in hospital and health centres

| | Quality dimensions | | N | Mean | Std. Deviation | Std. Error Mean | P-value* |
|---|---|---|---|---|---|---|---|
| | **1. Availability of services** | | | | | | |
| 1 | Waiting times | Hospital | 61 | 3.66 | .629 | .081 | .805 |
| | | Health centre | 37 | 3.62 | .681 | .112 | |
| 2 | Same provider | Hospital | 61 | 3.44 | .620 | .079 | .077 |
| | | Health centre | 37 | 3.68 | .626 | .103 | |
| 3 | Convenient hours | Hospital | 61 | 1.49 | .977 | .125 | .550 |
| | | Health centre | 37 | 1.38 | .861 | .142 | |
| 4 | Drugs available | Hospital | 61 | 1.16 | .663 | .085 | .623 |
| | | Health centre | 37 | 1.24 | .830 | .136 | |
| 5 | Language barrier | Hospital | 61 | 1.21 | .635 | .081 | .374 |
| | | Health centre | 37 | 1.11 | .516 | .085 | |
| 6 | Service available | Hospital | 61 | 3.93 | .403 | .052 | .359 |
| | | Health centre | 37 | 3.84 | .553 | .091 | |
| 7 | Providers available | Hospital | 61 | 3.75 | .623 | .080 | .296 |
| | | Health centre | 37 | 3.86 | .419 | .069 | |
| | **3. Patient Provider interaction and counselling** | | | | | | |
| 8 | Respect | Hospital | 61 | 3.82 | .500 | .064 | .725 |
| | | Health centre | 37 | 3.78 | .479 | .079 | |
| 9 | Listen carefully to me | Hospital | 61 | 3.72 | .609 | .078 | .947 |
| | | Health centre | 37 | 3.73 | .608 | .100 | |
| 10 | Explain things | Hospital | 61 | 3.59 | .716 | .092 | .782 |
| | | Health centre | 37 | 3.54 | .931 | .153 | |
| 11 | Sufficient time | Hospital | 61 | 3.51 | .766 | .098 | .329 |
| | | Health centre | 37 | 3.65 | .633 | .104 | |
| 12 | Deal with problems | Hospital | 61 | 3.43 | .784 | .100 | .915 |
| | | Health centre | 37 | 3.41 | 1.013 | .166 | |
| 13 | Discrimination | Hospital | 61 | 1.31 | .847 | .108 | .111 |
| | | Health centre | 37 | 1.11 | .393 | .065 | |
| 14 | Privacy respected | Hospital | 61 | 3.69 | .620 | .079 | .237 |
| | | Health centre | 37 | 3.81 | .397 | .065 | |
| | **5. Infrastructure** | | | | | | |
| 15 | Clean | Hospital | 61 | 3.43 | .826 | .106 | .836 |
| | | Health centre | 37 | 3.46 | .730 | .120 | |
| 16 | Toilets | Hospital | 61 | 3.05 | 1.117 | .143 | .006** |
| | | Health centre | 37 | 2.30 | 1.351 | .222 | |
| | **6. Professional competence** | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 17 | Treatment observer | Hospital | 61 | 2.38 | 1.344 | .172 | .001** |
| | | Health centre | 37 | 3.27 | 1.146 | .188 | |
| | **7. Affordability** | | | | | | |
| 18 | Pay for services | Hospital | 61 | 1.13 | .562 | .072 | .180 |
| | | Health centre | 37 | 1.03 | .164 | .027 | |
| 19 | Pay a tip | Hospital | 61 | 1.00 | ,000[a] | 0.000 | |
| | | Health centre | 37 | 1.00 | ,000[a] | 0.000 | |
| 20 | Transport | Hospital | 61 | 1.66 | 1.124 | .144 | .336 |
| | | Health centre | 37 | 1.46 | .869 | .143 | |
| | **8. Support** | | | | | | |
| 21 | Transport support | Hospital | 61 | 2.13 | 1.466 | .188 | .001** |
| | | Health centre | 37 | 3.11 | 1.390 | .229 | |
| | **9. Stigma** | | | | | | |
| 22 | Equal treament | Hospital | 61 | 3.48 | .868 | .111 | .171 |
| | | Health centre | 37 | 3.70 | .740 | .122 | |
| 23 | Friendly | Hospital | 61 | 3.75 | .505 | .065 | .202 |
| | | Health centre | 37 | 3.86 | .347 | .057 | |
| 24 | Greet/welcoming | Hospital | 61 | 3.87 | .427 | .055 | .253 |
| | | Health centre | 37 | 3.73 | .652 | .107 | |
| 25 | Direct communication | Hospital | 61 | 1.05 | .218 | .028 | .357 |
| | | Health centre | 37 | 1.14 | .536 | .088 | |

* T- test

** significant at 5%

a. t cannot be computed because the standard deviations of both groups are 0.

## B. Comparison of proportion of positive responses between patients treated in Hospital and in Health centres

| Quality dimensions | | | Hospital | | Health centre | | Total | | P-value * |
|---|---|---|---|---|---|---|---|---|---|
| | | | n | % | n | % | n | % | |
| **1. Availability of services** | | | | | | | | | |
| 1 | Easy to reach | Yes | 45 | 73.8% | 30 | 81.1% | 75 | 76.5% | .469 |
| **2. Communication and Information** | | | | | | | | | |
| 2 | Infectiousness | Yes | 42 | 68.9% | 14 | 37.8% | 56 | 57.1% | .003** |
| 3 | Curability | Yes | 56 | 91.8% | 19 | 51.4% | 75 | 76.5% | .000** |
| 4 | Regular DOTS | Yes | 57 | 93.4% | 25 | 67.6% | 82 | 83.7% | .001** |
| 5 | Side effects | Yes | 49 | 80.3% | 18 | 48.6% | 67 | 68.4% | .002** |
| 6 | Regular sputum tests | Yes | 59 | 96.7% | 17 | 45.9% | 76 | 77.6% | .000** |
| 7 | Duration treatment | Yes | 60 | 98.4% | 20 | 54.1% | 80 | 81.6% | .000** |
| **3. Patient – Provider Interaction and Counselling** | | | | | | | | | |
| 8 | TB affects life | Yes | 55 | 90.2% | 32 | 86.5% | 87 | 88.8% | .743 |
| **4. TB/HIV interaction** | | | | | | | | | |
| 9 | Link TB and HIV | Yes | 10 | 16.4% | 9 | 24.3% | 19 | 19.4% | .430 |
| **5. Infrastructure** | | | | | | | | | |
| 10 | Drinking water | Yes | 2 | 3.3% | 4 | 10.8% | 6 | 6.1% | .195 |
| 11 | Benches | Yes | 44 | 72.1% | 30 | 81.1% | 74 | 75.5% | .346 |
| 12 | Cough priority | Yes | 27 | 44.3% | 25 | 67.6% | 52 | 53.1% | .036** |
| **6. Professional competence** | | | | | | | | | |
| 13 | Physical exam | Yes | 56 | 91.8% | 12 | 32.4% | 68 | 69.4% | .000** |
| 14 | Contacts examined | Yes | 9 | 14.8% | 13 | 35.1% | 22 | 22.4% | .025** |
| **9. Stigma** | | | | | | | | | |
| 15 | Dignity | Yes | 59 | 96.7% | 37 | 100.0% | 96 | 98.0% | .525 |

* Fischer's Exact test
** Significant at 5%

## Annex 8. Comparison perceived quality of care among patients' characteristics

### A. Comparison of proportion of positive responses between male and female patients

| Quality dimensions | | | Sex | | | | | | P-value* |
|---|---|---|---|---|---|---|---|---|---|
| | | | Male | | Female | | Total | | |
| | | | n | % | n | % | n | % | |
| **1. Availability of services** | | | | | | | | | |
| 1 | Easy to reach | Yes | 41 | 78.8% | 34 | 73.9% | 75 | 76.5% | .637 |
| **2. Communication and Information** | | | | | | | | | |
| 2 | Infectiousness | Yes | 32 | 61.5% | 24 | 52.2% | 56 | 57.1% | .415 |
| 3 | Curability | Yes | 41 | 78.8% | 34 | 73.9% | 75 | 76.5% | .637 |
| 4 | Regular DOTS | Yes | 42 | 80.8% | 40 | 87.0% | 82 | 83.7% | .585 |
| 5 | Side effects | Yes | 32 | 61.5% | 35 | 76.1% | 67 | 68.4% | .134 |
| 6 | Regular sputum tests | Yes | 40 | 76.9% | 36 | 78.3% | 76 | 77.6% | 1.000 |
| 7 | Duration treatment | Yes | 41 | 78.8% | 39 | 84.8% | 80 | 81.6% | .602 |
| **3. Patient – Provider Interaction and Counselling** | | | | | | | | | |
| 8 | TB affects life | Yes | 45 | 86.5% | 42 | 91.3% | 87 | 88.8% | .534 |
| **4. TB/HIV interaction** | | | | | | | | | |
| 9 | Link TB and HIV | Yes | 7 | 13.5% | 12 | 26.1% | 19 | 19.4% | .132 |
| **5. Infrastructure** | | | | | | | | | |
| 10 | Drinking water | Yes | 4 | 7.7% | 2 | 4.3% | 6 | 6.1% | .681 |
| 11 | Benches | Yes | 40 | 76.9% | 34 | 73.9% | 74 | 75.5% | .816 |
| 12 | Cough priority | Yes | 30 | 57.7% | 22 | 47.8% | 52 | 53.1% | .418 |
| **6. Professional competence** | | | | | | | | | |
| 13 | Physical exam | Yes | 36 | 69.2% | 32 | 69.6% | 68 | 69.4% | 1.000 |
| 14 | Contacts examined | Yes | 13 | 25.0% | 9 | 19.6% | 22 | 22.4% | .630 |
| **9. Stigma** | | | | | | | | | |
| 15 | Dignity | Yes | 50 | 96.2% | 46 | 100.0% | 96 | 98.0% | .497 |

* Fischer's Exact test

## B. Comparison of average ratings per quality sub-dimension between male and female clients treated in hospital and health centres

| | Quality dimensions | Sex | N | Mean | Std. Deviation | Std. Error Mean | P – value* |
|---|---|---|---|---|---|---|---|
| **1. Availability of services** | | | | | | | |
| 1 | Waiting times | Male | 52 | 3.62 | .631 | .088 | |
| | | Female | 46 | 3.67 | .668 | .099 | .658 |
| 2 | Same provider | Male | 52 | 3.54 | .641 | .089 | |
| | | Female | 46 | 3.52 | .623 | .092 | .896 |
| 3 | Convenient hours | Male | 52 | 1.44 | .916 | .127 | |
| | | Female | 46 | 1.46 | .959 | .141 | .941 |
| 4 | Drugs available | Male | 52 | 1.06 | .416 | .058 | |
| | | Female | 46 | 1.35 | .948 | .140 | .060 |
| 5 | Language barrier | Male | 52 | 1.12 | .471 | .065 | |
| | | Female | 46 | 1.24 | .705 | .104 | .317 |
| 6 | Service available | Male | 52 | 3.87 | .486 | .067 | |
| | | Female | 46 | 3.93 | .442 | .065 | .461 |
| 7 | Providers available | Male | 52 | 3.81 | .487 | .067 | |
| | | Female | 46 | 3.78 | .629 | .093 | .827 |
| **3. Patient Provider interaction and counselling** | | | | | | | |
| 8 | Respect | Male | 52 | 3.75 | .519 | .072 | |
| | | Female | 46 | 3.87 | .453 | .067 | .226 |
| 9 | Listen carefully to me | Male | 52 | 3.62 | .690 | .096 | |
| | | Female | 46 | 3.85 | .470 | .069 | .052 |
| 10 | Explain things | Male | 52 | 3.40 | .975 | .135 | |
| | | Female | 46 | 3.76 | .480 | .071 | .022** |
| 11 | Sufficient time | Male | 52 | 3.52 | .754 | .105 | |
| | | Female | 46 | 3.61 | .682 | .101 | .539 |
| 12 | Deal with problems | Male | 52 | 3.25 | .947 | .131 | |
| | | Female | 46 | 3.61 | .745 | .110 | .039** |
| 13 | Discrimination | Male | 52 | 1.23 | .675 | .094 | |
| | | Female | 46 | 1.24 | .766 | .113 | .955 |
| 14 | Privacy respected | Male | 52 | 3.67 | .585 | .081 | |
| | | Female | 46 | 3.80 | .500 | .074 | .234 |
| **5. Infrastructure** | | | | | | | |
| 15 | Clean | Male | 52 | 3.48 | .804 | .112 | |
| | | Female | 46 | 3.39 | .774 | .114 | .576 |
| 16 | Toilets | Male | 52 | 2.85 | 1.243 | .172 | |
| | | Female | 46 | 2.67 | 1.283 | .189 | .503 |
| **6. Professional competence** | | | | | | | |
| 17 | Treatment observer | Male | 52 | 2.38 | 1.345 | .187 | |
| | | Female | 46 | 3.09 | 1.244 | .183 | .009** |
| **7. Affordability** | | | | | | | |
| 18 | Pay for services | Male | 52 | 1.06 | .235 | .033 | |
| | | Female | 46 | 1.13 | .619 | .091 | .456 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | Pay a tip | Male | 52 | 1.00 | .000[a] | .000 | |
| | | Female | 46 | 1.00 | .000[a] | .000 | |
| 20 | Transport | Male | 52 | 1.48 | .939 | .130 | |
| | | Female | 46 | 1.70 | 1.133 | .167 | .313 |
| **8. Support** | | | | | | | |
| 21 | Transport support | Male | 52 | 2.56 | 1.514 | .210 | |
| | | Female | 46 | 2.43 | 1.515 | .223 | .689 |
| **9. Stigma** | | | | | | | |
| 22 | Equal treatment | Male | 52 | 3.52 | .852 | .118 | |
| | | Female | 46 | 3.61 | .802 | .118 | .594 |
| 23 | Friendly | Male | 52 | 3.73 | .528 | .073 | |
| | | Female | 46 | 3.87 | .341 | .050 | .122 |
| 24 | Greet/Welcoming | Male | 52 | 3.77 | .614 | .085 | |
| | | Female | 46 | 3.87 | .400 | .059 | .336 |
| 25 | Direct communication | Male | 52 | 1.13 | .486 | .067 | |
| | | Female | 46 | 1.02 | .147 | .022 | .116 |

* T- test
** significant at 5%
a. t cannot be computed because the standard deviations of both groups are 0.

## C. Comparison of average ratings per quality sub-dimension between age groups 20-39 and 40+

| | Quality dimensions | Age group | N | Mean | Std. Deviation | Std. Error Mean | P-value* |
|---|---|---|---|---|---|---|---|
| **1. Availability of services** | | | | | | | |
| 1 | Waiting times | 20-39 | 52 | 3.62 | .690 | .096 | .654 |
| | | 40+ | 46 | 3.67 | .598 | .088 | |
| 2 | Same provider | 20-39 | 52 | 3.44 | .698 | .097 | .134 |
| | | 40+ | 46 | 3.63 | .532 | .078 | |
| 3 | Convenient hours | 20-39 | 52 | 1.48 | .918 | .127 | .722 |
| | | 40+ | 46 | 1.41 | .956 | .141 | |
| 4 | Drugs available | 20-39 | 52 | 1.17 | .706 | .098 | .766 |
| | | 40+ | 46 | 1.22 | .758 | .112 | |
| 5 | Language barrier | 20-39 | 52 | 1.12 | .511 | .071 | .313 |
| | | 40+ | 46 | 1.24 | .673 | .099 | |
| 6 | Service available | 20-39 | 52 | 3.94 | .235 | .033 | .342 |
| | | 40+ | 46 | 3.85 | .631 | .093 | |
| 7 | Providers available | 20-39 | 52 | 3.88 | .379 | .052 | .105 |
| | | 40+ | 46 | 3.70 | .695 | .102 | |
| **3. Patient Provider interaction and counselling** | | | | | | | |
| 8 | Respect | 20-39 | 52 | 3.79 | .498 | .069 | .706 |
| | | 40+ | 46 | 3.83 | .486 | .072 | |
| 9 | Listen carefully to me | 20-39 | 52 | 3.75 | .556 | .077 | .663 |
| | | 40+ | 46 | 3.70 | .662 | .098 | |
| 10 | Explain things | 20-39 | 52 | 3.63 | .715 | .099 | .415 |
| | | 40+ | 46 | 3.50 | .888 | .131 | |
| 11 | Sufficient time | 20-39 | 52 | 3.60 | .634 | .088 | .617 |
| | | 40+ | 46 | 3.52 | .809 | .119 | |
| 12 | Deal with problems | 20-39 | 52 | 3.38 | .889 | .123 | .686 |
| | | 40+ | 46 | 3.46 | .862 | .127 | |
| 13 | Discrimination | 20-39 | 52 | 1.35 | .861 | .119 | .091 |
| | | 40+ | 46 | 1.11 | .482 | .071 | |
| 14 | Privacy respected | 20-39 | 52 | 3.77 | .469 | .065 | .517 |
| | | 40+ | 46 | 3.70 | .628 | .093 | |
| **5. Infrastructure** | | | | | | | |
| 15 | Clean | 20-39 | 52 | 3.33 | .785 | .109 | .135 |
| | | 40+ | 46 | 3.57 | .779 | .115 | |
| 16 | Toilets | 20-39 | 52 | 2.71 | 1.210 | .168 | .657 |
| | | 40+ | 46 | 2.83 | 1.322 | .195 | |
| **6. Professional competence** | | | | | | | |
| 17 | Treatment observer | 20-39 | 52 | 2.58 | 1.319 | .183 | .284 |
| | | 40+ | 46 | 2.87 | 1.360 | .201 | |
| **7. Affordability** | | | | | | | |
| 18 | Pay for services | 20-39 | 52 | 1.08 | .436 | .060 | .734 |
| | | 40+ | 46 | 1.11 | .482 | .071 | |
| 19 | Pay a tip | 20-39 | 52 | 1.00 | .000[a] | .000 | |
| | | 40+ | 46 | 1.00 | .000[a] | .000 | |
| 20 | Transport | 20-39 | 52 | 1.67 | 1.080 | .150 | .352 |
| | | 40+ | 46 | 1.48 | .983 | .145 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **8. Support** | | | | | | | |
| 21 | Transport support | 20-39 | 52 | 2.56 | 1.514 | .210 | .689 |
| | | 40+ | 46 | 2.43 | 1.515 | .223 | |
| **9. Stigma** | | | | | | | |
| 22 | Equal treatment | 20-39 | 52 | 3.65 | .738 | .102 | .246 |
| | | 40+ | 46 | 3.46 | .912 | .134 | |
| 23 | Friendly | 20-39 | 52 | 3.83 | .430 | .060 | .477 |
| | | 40+ | 46 | 3.76 | .480 | .071 | |
| 24 | Greet/ Welcoming | 20-39 | 52 | 3.83 | .474 | .066 | .835 |
| | | 40+ | 46 | 3.80 | .582 | .086 | |
| 25 | Direct communication | 20-39 | 52 | 1.10 | .454 | .063 | .673 |
| | | 40+ | 46 | 1.07 | .250 | .037 | |

* T-test

a. t cannot be computed because the standard deviations of both groups are 0.

## D. Comparison of proportion of positive responses between age groups 20-39 and 40+

| Quality dimensions | | | Age group | | | | | | P-value* |
|---|---|---|---|---|---|---|---|---|---|
| | | | 20-39 | | 40+ | | Total | | |
| | | | n | % | n | % | n | % | |
| **1. Availability of services** | | | | | | | | | |
| 1 | Easy to reach | Yes | 40 | 76.9% | 35 | 76.1% | 75 | 76.5% | 1.000 |
| **2. Communication and Information** | | | | | | | | | |
| 2 | Infectiousness | Yes | 32 | 61.5% | 24 | 52.2% | 56 | 57.1% | .415 |
| 3 | Curability | Yes | 38 | 73.1% | 37 | 80.4% | 75 | 76.5% | .477 |
| 4 | Regular DOTS | Yes | 42 | 80.8% | 40 | 87.0% | 82 | 83.7% | .585 |
| 5 | Side effects | Yes | 33 | 63.5% | 34 | 73.9% | 67 | 68.4% | .286 |
| 6 | Regular sputum tests | Yes | 39 | 75.0% | 37 | 80.4% | 76 | 77.6% | .630 |
| 7 | Duration treatment | Yes | 42 | 80.8% | 38 | 82.6% | 80 | 81.6% | 1.000 |
| **3. Patient – Provider Interaction and Counselling** | | | | | | | | | |
| 8 | TB affects life | Yes | 46 | 88.5% | 41 | 89.1% | 87 | 88.8% | 1.000 |
| **4. TB/HIV interaction** | | | | | | | | | |
| 9 | Link TB and HIV | Yes | 11 | 21.2% | 8 | 17.4% | 19 | 19.4% | .799 |
| **5. Infrastructure** | | | | | | | | | |
| 10 | Drinking water | Yes | 3 | 5.8% | 3 | 6.5% | 6 | 6.1% | 1.000 |
| 11 | Benches | Yes | 36 | 69.2% | 38 | 82.6% | 74 | 75.5% | .160 |
| 12 | Cough priority | Yes | 29 | 55.8% | 23 | 50.0% | 52 | 53.1% | .685 |
| **6. Professional competence** | | | | | | | | | |
| 13 | Physical exam | Yes | 35 | 67.3% | 33 | 71.7% | 68 | 69.4% | .666 |
| 14 | Contacts examined | Yes | 14 | 26.9% | 8 | 17.4% | 22 | 22.4% | .334 |
| **9. Stigma** | | | | | | | | | |
| 15 | Dignity | Yes | 51 | 98.1% | 45 | 97.8% | 96 | 98.0% | 1.000 |

* Fischer's Exact test

## E. Comparison of average ratings per quality sub-dimension between occupation groups unemployed and employed

| | Quality dimensions | Occupation group | N | Mean | Std. Deviation | Std. Error Mean | P-value* |
|---|---|---|---|---|---|---|---|
| **1. Availability of services** | | | | | | | |
| 1 | Waiting times | unemployed | 73 | 3.64 | .653 | .076 | .980 |
| | | employed | 25 | 3.64 | .638 | .128 | |
| 2 | Same provider | unemployed | 73 | 3.59 | .573 | .067 | .176 |
| | | employed | 25 | 3.36 | .757 | .151 | |
| 3 | Convenient hours | unemployed | 73 | 1.48 | 1.002 | .117 | .515 |
| | | employed | 25 | 1.36 | .700 | .140 | |
| 4 | Drugs available | unemployed | 73 | 1.18 | .694 | .081 | .740 |
| | | employed | 25 | 1.24 | .831 | .166 | |
| 5 | Language barrier | unemployed | 73 | 1.22 | .672 | .079 | .045** |
| | | employed | 25 | 1.04 | .200 | .040 | |
| 6 | Service available | unemployed | 73 | 3.90 | .505 | .059 | .787 |
| | | employed | 25 | 3.88 | .332 | .066 | |
| 7 | Providers available | unemployed | 73 | 3.82 | .536 | .063 | .464 |
| | | employed | 25 | 3.72 | .614 | .123 | |
| **3. Patient Provider interaction and counselling** | | | | | | | |
| 8 | Respect | unemployed | 73 | 3.86 | .451 | .053 | .084 |
| | | employed | 25 | 3.64 | .569 | .114 | |
| 9 | Listen carefully to me | unemployed | 73 | 3.79 | .526 | .062 | .108 |
| | | employed | 25 | 3.52 | .770 | .154 | |
| 10 | Explain things | unemployed | 73 | 3.64 | .734 | .086 | .183 |
| | | employed | 25 | 3.36 | .952 | .190 | |
| 11 | Sufficient time | unemployed | 73 | 3.62 | .680 | .080 | .241 |
| | | employed | 25 | 3.40 | .816 | .163 | |
| 12 | Deal with problems | unemployed | 73 | 3.47 | .835 | .098 | .402 |
| | | employed | 25 | 3.28 | .980 | .196 | |
| 13 | Discrimination | unemployed | 73 | 1.23 | .736 | .086 | .964 |
| | | employed | 25 | 1.24 | .663 | .133 | |
| 14 | Privacy respected | unemployed | 73 | 3.77 | .541 | .063 | .335 |
| | | employed | 25 | 3.64 | .569 | .114 | |
| **5. Infrastructure** | | | | | | | |
| 15 | Clean | unemployed | 73 | 3.55 | .708 | .083 | .043** |
| | | employed | 25 | 3.12 | .927 | .185 | |
| 16 | Toilets | unemployed | 73 | 2.73 | 1.294 | .151 | .582 |
| | | employed | 25 | 2.88 | 1.166 | .233 | |
| **6. Professional competence** | | | | | | | |
| 17 | Treatment observer | unemployed | 73 | 2.81 | 1.340 | .157 | .239 |
| | | employed | 25 | 2.44 | 1.325 | .265 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **7. Affordability** | | | | | | | |
| 18 | Pay for services | unemployed | 73 | 1.10 | .505 | .059 | .845 |
| | | employed | 25 | 1.08 | .277 | .055 | |
| 19 | Pay a tip | unemployed | 73 | 1.00 | .000[a] | .000 | |
| | | employed | 25 | 1.00 | .000[a] | .000 | |
| 20 | Transport | unemployed | 73 | 1.64 | 1.085 | .127 | .261 |
| | | employed | 25 | 1.40 | .866 | .173 | |
| **8. Support** | | | | | | | |
| 21 | Transport support | unemployed | 73 | 2.48 | 1.510 | .177 | .821 |
| | | employed | 25 | 2.56 | 1.530 | .306 | |
| **9. Stigma** | | | | | | | |
| 22 | Equal treatment | unemployed | 73 | 3.58 | .832 | .097 | .774 |
| | | employed | 25 | 3.52 | .823 | .165 | |
| 23 | Friendly | unemployed | 73 | 3.88 | .371 | .043 | .016** |
| | | employed | 25 | 3.56 | .583 | .117 | |
| 24 | Greet/ Welcoming | unemployed | 73 | 3.89 | .356 | .042 | .096 |
| | | employed | 25 | 3.60 | .816 | .163 | |
| 25 | Direct communication | unemployed | 73 | 1.07 | .385 | .045 | .524 |
| | | employed | 25 | 1.12 | .332 | .066 | |

* T-test

** Significant at 5%

a. t cannot be computed because the standard deviations of both groups are 0.

## F. Comparison of proportion of positive responses between occupation groups unemployed and employed

| Quality dimensions | | | Occupation group | | | | | | P-value* |
|---|---|---|---|---|---|---|---|---|---|
| | | | unemployed | | employed | | Total | | |
| | | | n | % | n | % | n | % | |
| **1. Availability of services** | | | | | | | | | |
| 1 | Easy to reach | Yes | 55 | 75.3% | 20 | 80.0% | 75 | 76.5% | .787 |
| **2. Communication and Information** | | | | | | | | | |
| 2 | Infectiousness | Yes | 41 | 56.2% | 15 | 60.0% | 56 | 57.1% | .817 |
| 3 | Curability | Yes | 55 | 75.3% | 20 | 80.0% | 75 | 76.5% | .787 |
| 4 | Regular DOTS | Yes | 61 | 83.6% | 21 | 84.0% | 82 | 83.7% | 1.000 |
| 5 | Side effects | Yes | 50 | 68.5% | 17 | 68.0% | 67 | 68.4% | 1.000 |
| 6 | Regular sputum tests | Yes | 58 | 79.5% | 18 | 72.0% | 76 | 77.6% | .579 |
| 7 | Duration treatment | Yes | 60 | 82.2% | 20 | 80.0% | 80 | 81.6% | .773 |
| **3. Patient – Provider Interaction and Counselling** | | | | | | | | | |
| 8 | TB affects life | Yes | 64 | 87.7% | 23 | 92.0% | 87 | 88.8% | .724 |
| **4. TB/HIV interaction** | | | | | | | | | |
| 9 | Link TB and HIV | Yes | 14 | 19.2% | 5 | 20.0% | 19 | 19.4% | 1.000 |
| **5. Infrastructure** | | | | | | | | | |
| 10 | Drinking water | Yes | 4 | 5.5% | 2 | 8.0% | 6 | 6.1% | .643 |
| 11 | Benches | Yes | 58 | 79.5% | 16 | 64.0% | 74 | 75.5% | .176 |
| 12 | Cough priority | Yes | 37 | 50.7% | 15 | 60.0% | 52 | 53.1% | .490 |
| **6. Professional competence** | | | | | | | | | |
| 13 | Physical exam | Yes | 51 | 69.9% | 17 | 68.0% | 68 | 69.4% | 1.000 |
| 14 | Contacts examined | Yes | 16 | 21.9% | 6 | 24.0% | 22 | 22.4% | .789 |
| **9. Stigma** | | | | | | | | | |
| 15 | Dignity | Yes | 72 | 98.6% | 24 | 96.0% | 96 | 98.0% | .447 |

*Fischer's Exact test

## G. Comparison of average ratings per quality sub-dimension between education groups lower and higher education level

| | Quality dimensions | Education group | N | Mean | Std. Deviation | Std. Error Mean | P-value* |
|---|---|---|---|---|---|---|---|
| **1. Availability of services** | | | | | | | |
| 1 | Waiting times | lower education level | 20 | 3.65 | .489 | .109 | .947 |
| | | higher education lever | 78 | 3.64 | .683 | .077 | |
| 2 | Same provider | lower education level | 20 | 3.70 | .470 | .105 | .107 |
| | | higher education lever | 78 | 3.49 | .659 | .075 | |
| 3 | Convenient hours | lower education level | 20 | 1.40 | .940 | .210 | .796 |
| | | higher education lever | 78 | 1.46 | .935 | .106 | |
| 4 | Drugs available | lower education level | 20 | 1.30 | .923 | .206 | .550 |
| | | higher education lever | 78 | 1.17 | .673 | .076 | |
| 5 | Language barrier | lower education level | 20 | 1.35 | .813 | .182 | .257 |
| | | higher education lever | 78 | 1.13 | .519 | .059 | |
| 6 | Service available | lower education level | 20 | 3.95 | .224 | .050 | .394 |
| | | higher education lever | 78 | 3.88 | .509 | .058 | |
| 7 | Providers available | lower education level | 20 | 3.80 | .523 | .117 | .970 |
| | | higher education lever | 78 | 3.79 | .567 | .064 | |
| **3. Patient Provider interaction and counselling** | | | | | | | |
| 8 | Respect | lower education level | 20 | 3.80 | .523 | .117 | .953 |
| | | higher education lever | 78 | 3.81 | .485 | .055 | |
| 9 | Listen carefully to me | lower education level | 20 | 3.70 | .657 | .147 | .850 |
| | | higher education lever | 78 | 3.73 | .596 | .067 | |
| 10 | Explain things | lower education level | 20 | 3.80 | .410 | .092 | .036** |
| | | higher education lever | 78 | 3.51 | .864 | .098 | |
| 11 | Sufficient time | lower education level | 20 | 3.50 | .761 | .170 | .686 |
| | | higher education lever | 78 | 3.58 | .712 | .081 | |
| 12 | Deal with problems | lower education level | 20 | 3.25 | 1.118 | .250 | .434 |
| | | higher education lever | 78 | 3.46 | .801 | .091 | |
| 13 | Discrimination | lower education level | 20 | 1.05 | .224 | .050 | .026** |
| | | higher education lever | 78 | 1.28 | .788 | .089 | |
| 14 | Privacy respected | lower education level | 20 | 3.65 | .813 | .182 | .579 |
| | | higher education lever | 78 | 3.76 | .461 | .052 | |
| **5. Infrastructure** | | | | | | | |
| 15 | Clean | lower education level | 20 | 3.85 | .489 | .109 | .001** |
| | | higher education lever | 78 | 3.33 | .816 | .092 | |
| 16 | Toilets | lower education level | 20 | 2.80 | 1.361 | .304 | .897 |
| | | higher education lever | 78 | 2.76 | 1.240 | .140 | |
| **6. Professional competence** | | | | | | | |
| 17 | Treatment observer | lower education level | 20 | 2.95 | 1.395 | .312 | .399 |
| | | higher education lever | 78 | 2.65 | 1.327 | .150 | |
| **7. Affordability** | | | | | | | |
| 18 | Pay for | lower education level | 20 | 1.05 | .224 | .050 | .488 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | services | higher education lever | 78 | 1.10 | .499 | .057 | |
| 19 | Pay a tip | lower education level | 20 | 1.00 | .000[a] | .000 | |
| | | higher education lever | 78 | 1.00 | .000[a] | .000 | |
| 20 | Transport | lower education level | 20 | 1.80 | 1.196 | .268 | .353 |
| | | higher education lever | 78 | 1.53 | .990 | .112 | |
| **8. Support** | | | | | | | |
| 21 | Transport support | lower education level | 20 | 2.20 | 1.508 | .337 | .327 |
| | | higher education lever | 78 | 2.58 | 1.508 | .171 | |
| **9. Stigma** | | | | | | | |
| 22 | Equal treatment | lower education level | 20 | 3.65 | .745 | .167 | .566 |
| | | higher education lever | 78 | 3.54 | .848 | .096 | |
| 23 | Friendly | lower education level | 20 | 3.85 | .366 | .082 | .492 |
| | | higher education lever | 78 | 3.78 | .474 | .054 | |
| 24 | Greet/ Welcoming | lower education level | 20 | 3.80 | .523 | .117 | .877 |
| | | higher education lever | 78 | 3.82 | .528 | .060 | |
| 25 | Direct communication | lower education level | 20 | 1.00 | .000 | .000 | .032** |
| | | higher education lever | 78 | 1.10 | .414 | .047 | |

*T-test

**Significant at 5%

a. t cannot be computed because the standard deviations of both groups are 0.

## H. Comparison of proportion of positive responses between education groups lower and higher education level

| | Quality dimensions | | Education group: lower education level n | lower education level % | higher education level n | higher education level % | Total n | Total % | P-value* |
|---|---|---|---|---|---|---|---|---|---|
| **1. Availability of services** | | | | | | | | | |
| 1 | Easy to reach | Yes | 15 | 75.0% | 60 | 76.9% | 75 | 76.5% | 1.000 |
| **2. Communication and Information** | | | | | | | | | |
| 2 | Infectiousness | Yes | 12 | 60.0% | 44 | 56.4% | 56 | 57.1% | .806 |
| 3 | Curability | Yes | 16 | 80.0% | 59 | 75.6% | 75 | 76.5% | .776 |
| 4 | Regular DOTS | Yes | 18 | 90.0% | 64 | 82.1% | 82 | 83.7% | .513 |
| 5 | Side effects | Yes | 14 | 70.0% | 53 | 67.9% | 67 | 68.4% | 1.000 |
| 6 | Regular sputum tests | Yes | 16 | 80.0% | 60 | 76.9% | 76 | 77.6% | 1.000 |
| 7 | Duration treatment | Yes | 17 | 85.0% | 63 | 80.8% | 80 | 81.6% | 1.000 |
| **3. Patient – Provider Interaction and Counselling** | | | | | | | | | |
| 8 | TB affects life | Yes | 18 | 90.0% | 69 | 88.5% | 87 | 88.8% | 1.000 |
| **4. TB/HIV interaction** | | | | | | | | | |
| 9 | Link TB and HIV | Yes | 3 | 15% | 16 | 20.5% | 19 | 19.4% | .756 |
| **5. Infrastructure** | | | | | | | | | |
| 10 | Drinking water | Yes | 1 | 5.0% | 5 | 6.4% | 6 | 6.1% | 1.000 |
| 11 | Benches | Yes | 18 | 90.0% | 56 | 71.8% | 74 | 75.5% | .144 |
| 12 | Cough priority | Yes | 9 | 45.0% | 43 | 55.1% | 52 | 53.1% | .460 |
| **6. Professional competence** | | | | | | | | | |
| 13 | Physical exam | Yes | 14 | 70.0% | 54 | 69.2% | 68 | 69.4% | 1.000 |
| 14 | Contacts examined | Yes | 3 | 15.0% | 19 | 24.4% | 22 | 22.4% | .550 |
| **9. Stigma** | | | | | | | | | |
| 15 | Dignity | Yes | 20 | 100.0% | 76 | 97.4% | 96 | 98.0% | 1.000 |

*Fischer's Exact test