# PRACTICAL GUIDE TO IMPROVE QUALITY TB PATIENT CARE:







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A PARTICIPATORY APPROACH

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# PRACTICAL GUIDE TO IMPROVE QUALITY TB PATIENT CARE:

# A PARTICIPATORY APPROACH

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## PRFFACE

In the context of the bilateral agreement between the governments of Mexico and the United States of America, initiated in 2000 and extended until 2010, and having as objective the support of 13 priority states in the development of their institutional capacity in Tuberculosis Control, PAHO has been assigned to design and implement a project to improve performance of human resources in delivering quality DOTS services. This project called "Participatory Quality Improvement in District Health System to stop TB" was implemented in the period between May 2007 and September 2009 and developed tools to improve the quality of DOTS services to TB affected persons. The TBCAP/TBCTA project involved in the third phase of the USAID support through their partners. The Union, KNCV and MSH were responsible for the yearly M&E of the USAID support including this project, permitting the monitoring at local level of the progress of the "Participative Improvement" project, implemented in 16 priority health districts (jurisdictions) of the 13 supported states.

The Evidence-based Participatory Quality Improvement (EPQI) methodology has been adapted to TB and is an innovative way to obtain better results, with the commitment of those who are directly responsible for patient care. This methodology for health care solutions features four integral components: a) customer-oriented quality evidence, b) process improvement, c) health system approach, and d) participatory improvement. The methodology does not require extra resources to be implemented, thus allowing the necessary sustainability of results.

The original idea of EPQI comes from Dr. Uehara, from Tohoku University in Japan, and focuses on quality assurance for hospitals, applied in the first place to prevent nosocomial infections in specialties such as surgery, obstetrics and emergencies. This is the first time the method has been applied at the primary care level, specifically addressing improvement of early detection and care of people affected by TB. After the evidence-based method showed success in this TB project, the methodology has also been applied to other health programs in Mexico, such as Safe Motherhood countrywide, and in some Mexican states it has been applied to the comprehensive health package, including for Dengue, Diabetes, Hypertension and Epidemiological Disasters.

In this document, the crucial steps toward achieving and sustaining improvement in TB diagnostics and care are described. I had the opportunity during the regular M&E missions of the USAID project to verify some of the results in the states of Chiapas, Jalisco and Guerrero, where enthusiastic teams of health workers showed evidence of the stepwise quality improvement of diagnostics and care to persons affected by TB.

I invite you to read this document that can be a useful tool to improve the quality of TB services at local levels in countries all over the world.

I hope you enjoy it. Netty Kamp, senior advisor KNCV Tuberculosis Foundation

# **ACKNOWLEDGMENTS**

SPECIAL ACKNOWLEDGMENT goes out to all 668 health workers who participated in the workshops of the 16 District Health System of:

Acapulco, Guerrero Costa, Oaxaca Córdoba v Orizaba, Veracruz Guadalupe, Nuevo León Hermosillo, Sonora Tapachula, Chiapas Tijuana, Baja California Torreón, Coahuila Guadalajara, Jalisco Morelia, Michoacán Mexicali, Baia California Ciudad Juárez, Chihuahua San Andrés Tuxtla, Veracruz Tuxtla Gutiérrez, Chiapas Saltillo, Coahuila Ojocaliente, Zacatecas

and with whom we had the great opportunity to develop a different way of addressing the TB problem. With their practical examples and motivation, we hope to support other health care units in the country, in the organized struggle for TB control and better quality of life for patients under their care.

Thanks to Dr. Philippe Lamy, PAHO/WHO representative in Mexico, and the financial support of USAID, through Molly Lindner, USAID officer.

Thanks to Ivonne Orejel and Luis Gerardo Castellanos, the main technical advisor, who coordinated the WHO TB Project in Mexico

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# INTRODUCTION

This guide is the result of several workshops on "Participatory Quality Imrovement in District Health System to Stop TB." The goal of these workshops was to empower health services managers and operational staff through the methodological use of quality tools for information analysis and decision making in order to provide continuous improvement of the TB patient care process.

While different methodologies exist for the development of quality improvement cycle, the base methodology we used, with some modifications for the specific analysis of TB in health care units, was EPQI (Evidence-based Participatory Quality Improvement), developed by Dr. Naruo Uehara, of the Tohoku University School of Medicine in Japan. This method has many similarities with that proposed by the U.S. CDC (known as the 7 Steps for Improvement), and with the Quality Route proposal by the Ministry of Health in Mexico. The EPQI methodology has a practical approach and helps the working group analyze, decide and design how to improve their results with less effort and more effectiveness. This methodology requires greater investment of time during the planning phase in the local environment in order to decrease the effort in developing best practices and maintaining the sustainability of the project.

The health personnel invited to participate in the workshops were as follows:

- State Level: Coordinator of TB Program, Epidemiologist, State DOTS Nurse, Head of Laboratory, Head of Community Health Information Area, etc.
- District Level: Director of District Health System, District Epidemiologist, Head of TB Program, DOTS Nurse, Head of Laboratory, Head of District Health Promotion, Area Monitoring Team.
- Selected Health Care Centers (five to eight medical units): Director of Health Center, physician, nurse, and health promoter.

This pamphlet includes some real examples that were the result of work done in these workshops; the start-up phase took place in the Districts of Costa, Oaxaca; Hermosillo, Sonora; Córdoba and Orizaba, Veracruz; and later Tapachula, Chiapas and Acapulco, Guerrero in 2007.

In collaboration with the National TB Program, with funding from USAID and technical assistance from PAHO / WHO in Mexico, the methodology was developed in classroom and health care units to analyze the performance and organization of the TB program in 16 (of 237) District Health Systems of 12 States of Mexico, between 2007 - 2009.

# **ADVISORY NOTICE**

This guide Is intended for personal working directly in patient care at health facilitties as well as for staff working In admisnitartion at local health systems, called districts, jurisdictions, or SILOS depending on each region of the world.

This document is not intended to provide specific TB technical support as this information can be found in National or International Guidelines or Manuals. This guide is meant to offer a teamwork approach to continuous improvement of patient care and performance of the national TB control program, but can also be used as a methodology for solving any other local (public) health problem.

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# CHAPTER I

# Background and Basic Premises

When managers or decision-makers select a health care unit or district, which they identify as having low performance or having problems in TB control in reality we are dealing with the EFFECT of the problem and not with the problem itself. You should keep this in mind as you read this document. In other words, what we see is the result of events that happened in another moment, and its failure or success (indicator - photograph) is based on a series of process activities performed by someone else, somewhere else and at some other time.

This effect could be considered the "symptom" or the concentrated expression of the existence of weaknesses in several stages of the process or in specific activities of the process (root causes). We are all responsible for these weaknesses in the district health system; while it is very tempting to try to solve the problem immediately through specific training or with sanctions against those involved, it is preferable to not make decisions lightly regarding what we observe.

Therefore, we need to identify the different activities assigned to each person, noting which are not being sufficiently monitored.

Below we describe the basic criteria that may be generally observed for any professional activity where the intention is to assess whether quality requirements are met:

A) Are individuals (doctor, nurse, promoter, supervisor, etc.) doing their work in a timely manner?

- Examples. Days, weeks or months elapsed between diagnosis and notification of a smear positive result to the health care unit and the patient; time elapsed between requesting and receiving treatment scheme for a new TB case.
- B) Were the activities implemented **sufficient** number of times?
  - Example. Number of drug doses for strictly supervised treatment; number of sputum controls requested and performed from the period of diagnosis to cure.
- C) Do recording instruments show an adherance to **standards** for diagnosis, monitoring and control of each patient?
  - Example. Chemoprophylaxis for children under 5 years of age living in the same home as the TB patient; or the two months intensive treatment phase...

See Figure 1

Source: Modified from the Quality Triangle (cost, time, quality)
Figure 1

If we keep these basic quality criteria in mind, they can serve as a guide for the analysis of any activity performed as part of the process TB patient care or even for any health care problem.

### Why is it so difficult to develop a Practical Guide for improving TB patient care?

Possibly because in practice it requires a joint effort from staff involved at different levels and areas of the process of care. The first challenge we confront in this document is a description of how to organize health care personnel to address this problem. Providing a detailed guide on teambuilding and analyze the activities of the process through a written document is not an easy job, because teamwork must be EXPERIENCED and built by all members of the team in real time.

The most effective way of addressing any health care problem is through experiencing teamwork with the effective support and commitment of the local authorities. The methodology described below is useful for those interested in solving problems in their work environment by analyzing and gathering data on concrete situations. The steps in this document are more useful for those who wish to improve the Program's performance in their workplace and who know and daily experience the difficulties in achieving successful interventions.

Note that the sequence of steps that will be addressed later is useful for many health care problems. If you look closely at the methodology applied in a logical, systematic and orderly way on a worldwide problem as TB Is, you will see that it can be implemented to solve also other health problems at local level.

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Reading the document may appear easy, but its implementation requires an investment of time, since data analysis of real situations can only be achieved with practical experience in district health systems.

### Categorized by source, how many types of problems exist?

There are three types of health problems if we divide into categories according to origin: 1) those associated with daily routine, 2) those that decision makers designate because they correspond to national or district priorities according to health evidence, and 3) problems found as the result of scientific research, or the development of improvement projects.

(See Table 1)

If we start to consider the origin of TB as a health problem, it corresponds to the first two types of problems as it appears in the daily routine when activities such as health promotion, detection, monitoring and control are not carried out, and it also corresponds to a designated problem, since it is a re-emerging disease that requires special attention in national health care policies. We cannot consider it the result of recent scientific research because it is a problem that has been studied and is sufficiently understood.

# Considering the cause and the solution, what group of problems does TB belong to? Is cause and source the same thing?

There are four basic patterns for problems, according to which they are categorized based on cause and solution:

**Pattern A:** These are problems of a simple type that can be resolved with the timely participation of one or more health workers in the same or different branch, not requiring huge time investments and which can be resolved trhough a manual or with a clear and detailed description of a basic teamwork procedure. Examples of this pattern are changing a light bulb, posting warning signs in hospital areas, cleaning toilets, etc.

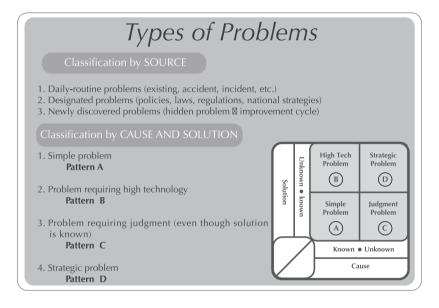
**Pattern B:** In some cases certain technological equipment needs to be available as only knowledge of the health personnel is not sufficient to identify a specific medical problem. These are problems that require high tech solutions. In this pattern, the use of technical equipment to solve a problem or to be sure of a diagnosis is indispensable. Examples include the need for an ultrasound to confirm a twin pregnancy or a biopsy to confirm breast cancer.

**Pattern C:** This refers to problems having to do with judgment, in which political conditions and alliances with those associated with the particular problem influence the management decision. This occurs when the results of the decision can have repercussions beyond the area and the consequences could turn out very positive or truly catastrophic. Such is the case when closing a low-productive health care unit; transfer of conflictive personnel to another area while backed by a labour union; launching a project without the approval of certain opinion leaders, etc.

**Pattern D:** Refers to a strategic problem, for which the participation of more than one area and decisions at various levels are required. Intervention requires both systemic analysis and a process approach; while the solution and the problem appear to be understood (e.g., sys-

### Chapter I

temic arterial hypertension, diabetes mellitus), things do not come out as expected in the district because issues are ignored, such as the measurement of critical activities, guided consultation, monitoring and recording instruments, definition of operational tools, etc. This pattern covers different public health problems, such as hospital infections frcuency of cesarean sections higher than the standard, maternal death, shortages of medicines, prenatal care and, of course, TB prevention and control.



Source: Uehara, N, Sendai Seminar, University of Tohoku, Japan, 2003

# Is tuberculosis a medical care quality problem or is it a public health quality problem?

In Mexico, as in many parts of the world, tuberculosis is a public health problem (of the health system) and also a strategic one (for the health care team). It goes beyond the physician-patient relationship and the doctor's office, and does not depend only on the good or bad performance of the physician and nurse since different decision making levels and various actors are involved in TB control in the district health system.

On the other hand, the dominant paradigm in the training, of health professionals at undergraduate and graduate levels, when dealing with health problems remains still to be merely clinical and as a consequence the focus is on TB clinical care and not a system approach. Since the creation of inisitutional medicine, the problem solving approach has chneged substantially as it required the coordinated participation of health professionals, because when one health professional does or does not do what he should do, the service to the patient given by another health worker is affected too.

In most cases, the quality of TB patient care is not a problem of individual performance only in terms of the medical treatment (in the doctor's office or in the hospital) that can be resolved with specific training of a person or a group of health care personnel, or with the distribution of and discussion about documents on guidelines or standards.

These type of solutions (such as specific training and the review and distribution of official standards) is appropriate for cases requiring specific knowledge of drugs, dosage, method of administration, storage, etc., or when specialized training is required for a surgical technique, such as microsurgery on the central nervous system, or an exploratory remote laparotomy using robotics. Thus, addressing individual performance quality issues reflects the concrete experience of health care professionals and success or failure depends on the individual. Unlike the training to learn to give correct medicines, which might be accomplished in a few hours, the training required for a highly specialized surgical technique can take several months or years, and both rely mainly on individual performance.

However, what do we face in health institutions when there is a shift change and the individual capacities of the personnel differ? Procedures are a precise way to reduce variation. When we speak of procedure-based quality, we refer to the technical equipment for health care where each activity of a method is specifically and sequentially described, and which can be completed through the timely participation of health professionals for a particular event, such as the work done by nurses for IV therapy, the procedure for a chest x-ray followed by the radiologist, or the chemotherapy plan for breast cancer carried out by the oncologist. The development of a procedure itself can reduce the gap between those who have more technical knowledge and those who are being trained. On the other hand, the complexity of the procedure may vary according to the type of service provided. Nonetheless, it is always useful to have instruments that clearly describe what each health care professional must do at the appropriate moment. One of the clearest and most detailed examples where the actions of each professional are precisely described is in the clinical guides for patient management.

However, the clinical guides developed by experts are often not rigorously applied in the medical units, where local conditions may include some determining factors that hinder compliance. We are then facing a difficult control problem (like many public health problems) that requires a coordinated approach of different disciplines for the analysis of problems with a focus on systems and processes in the district health system. It is under these circumstances that we face a problem of management.

Our statement that the problem of TB (like many other health problems) is a management problem is based on the following arguments:

- The problem is located in the health systems and processes of health care units since local systems such as the district, intermediate and even national levels are involved.
- It requires a teamwork approach as there are different actors involved like health personnel delivering services, different health departments and other sectors as well as the healthfacilities which affect the outcome.

### Chapter I

- It is a recurrent problem and requires analysis of health system information related to health care processes, with the need of "hard data" as well as descriptive Information of interventions and their results occurring at local level.
- While revising the usual TB indicators this does not give us satisfactory results related to de tection, timely diagnosis and treatment, adequate follow up and cure among other components. Complications may show up such as failures, relapses, dropouts, drug resistance and cases of death.

Note that a management problem does not exclude the Importance of individual technical knowledge or the or the need for a detailed description of procedures; On the contrary: it includes specific training, use of clinical guides and the systematic and organized work of all players involved. It is classified in this way because this process involves different kind of health workers carrying out health promotion in the waiting room (intramural) and in the community (extramural); detecting new cases during contact tracing, in prisons, schools, workplaces and community centers; confirming diagnoses with sputum smear tests, cultures, x-rays in children; initiating treatment according to the latest standards of the National TB Program, evaluating classified cases as new, re-entry, relapse, failure, or drug resistant; following up each case through clinical evaluation and regular sputum tests; carrying out contact tracing inside and outside the household; evaluating success of activities through performance and impact indicators, etc.

If we limit the concept of performance only to the doctor's consultation room, our field of action will be limited only to the physician-patient relationship; However, if we believe the success of our activities is also related to other services and departments, then we really need to actively collaborate with all other players in order to improve patient care, as shown in the diagram.

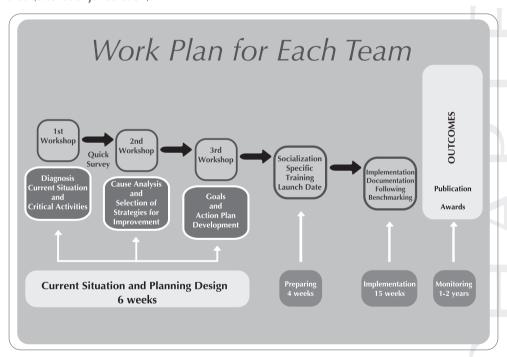


Source: Uehara, N, Sendai Seminar, University of Tohoku, Japan, 2003 Figure 2

# CHAPTER II

# Proposed Methodology for the Development of the Workshop

In the multipurpose room of the corresponding Health District (Jurisdiction in Mexico), 8-hour working sessions were organized for a period of two days, and the meetings were repeated three times with a lapse of approximately two weeks between sessions (six days total and 36 hours of classroom work, plus practical work in health care units). In each workshop, selected work teams met to discuss the current situation according to the outcome indicators and the organization of the TB program in the District Health System. In addition, cause analysis and corresponding verification has been done through a fast sampling method; the team participated in the exercise of designing intervention strategies, clarified goals and objectives, and finally, developed an action plan and implemented a continuous quality improvement project for TB patient care in the local area (district or jurisdiction).



### Chapter II

This chapter describes each of the steps and tasks involved to improve local TB patient care with the intention to guide other local health teams worldwide interested in problem solving with a participatory approach.

Although there are also different proposals for improvement cycles, and even this methodology would have given different results if we had used it to tackle other health problems than TB, we suggest to use the following steps for problem analysis and finding of solutions:

No.	STEP	No.	TASK				
1	Assess the current problem	1.1	Identify performance indicators				
		1.2	Select health care unit(s)				
		1.3	Build the right project team				
2	Identify and measure causes	2.1	Analyze critical activities based on				
			the care process				
		2.2	Perform a Baseline Test to Define the Current Situation				
		2.3	Develop a pathway to patient care through				
			a flowchart (health care units activity)				
		2.4	Present Tables and/or Graphics of the Results				
3	Clarify and prioritize	3.1	Evidence-based prioritization				
	intervention strategies	3.2	Set strategic areas				
		3.3	Clarify goals and specific goals to achieve				
4	Organize your action plan	4.1	Development of a Tree Diagram for each strategy				
		4.2	Include all stakeholders in the process				
		4.3	Define Tasks in Terms of Measurable Activities				
5	Prepare for Implementation	5.1	Create a Project Timeline				
		5.2	Prepare Awareness Meeting for Partners and Family Members				
		5.3	Prepare Specific Training				
		5.4	Prepare for Launch Date				
6	Monitoring the	6.1	Organize a monitoring plan				
	improvement process	6.2	Compose Mailing List				
		6.3	Evaluate your progress periodically				
7	Document the	7.1	Use the style you want, but documentation				
	improvement process		is necessary				

Source: Modified from EPQI (Evidence based Participatory Quality Improvement in District Health System to stop TB, developed by Naruo Uehara, University of Tohoku, Japan

Table 2

### STEPS FOR THE QUALITY IMPROVEMENT CYCLE

The following is a brief description of the 7 steps with each of the major tasks the instructor must consider for development of the quality improvement cycle:

### 1. Assess the Current Problem

- 1.1 Identify Performance Indicators
- 1.2 Select Health Care Unit(s)
- 1.3 Build the Right Project Team

### 1.1 Identify Performance Indicators

Using the TB epidemiological surveillance data and Indicators, review the information of the Intermediate or District Health System and select those that, based on hard numerical data, show performance problems.

- 1.2 Select health care unit(s) from the chosen District. Select between three to five health care centers that satisfy the following requirements:
  - Commitment of the manager in at least two of the selected health care units. This
    commitment could encourage and mobilize all project team members at the moment
    of analyzing process activities as well as when the moment is there to implementi the
    improvement process activities. Besides the participation of the health care center
    managers the commitment of the District and State Program Coordinators is also crucial.
  - As stability of the work team is vital members should not be temporary workers or still students. It is also convenient, as far as possible, that there will be no staff transfers at least during the first year after beginning the improvement project.
  - Proven leadership of some of the members of the choosen health facilities is needed. Although
    it is convenient that the director of the health facility has this leadership ability it is not mandatory, as long as someone from the district team can proactively mobilize his or her peers in
    the health care unit.

Assessment Level	Deaths	Cases	Detection	Diagnosis	Recovery	Monitoring	Surveillance	Performance Index
State	42	446	100	100	78.4	79.9	79.9	85.8
a) District	18	182	94.4	84.3	68.5	60.4	82.4	74.1
Unit 1	1	16	82.7	73.3	78.9	74.1	76.1	77.6
Unit 2	0	6	100	91.7	100	98.4	82.1	96.56
Unit 3	3	34	100	100	81.3	81.8	59.1	86.2
Unit 4	4	38	100	47.9	40.3	35.2	84.0	57.6
Unit 5	1	9	93.6	79.8	68.5	63.6	57.9	69.1
Unit 6	2	8	100	100	97.1	96.7	15.7	95.5
Unit 7	0	11	100	89.3	90.1	85.2	79.8	89.7
Unit 8	2	13	100	83.0	90.7	90.6	67.1	90.8
Unit 9	5	47	34.0	43.1	40.3	27.7	77.8	35.4

Source: Adapted from the Unique Information System, TB Module and from the Bulletin "Moving Towards Excellence," SINAVE, Ministry of Health, 2007

Table 3

### 1.3 Build the Right Project Team

Teamwork is a highly participatory approach, where contributions and practical experience of the health care personnel are essential. In this sense, knowledge is built with the information collected by managerial staff and health care professionals who provide direct patient care, allowing us to select qualitative and quantitative criteria and use quality tools to transform them into process and result indicators, and work with useful information for decision making under a methodological EPQI (Evidence-based Participatory Quality Improvement) approach.

Creating the right project team means involving two or more people from each discipline involved in management or TB patient care. These include: doctor, nurse, health promoter, chemist, epidemiologist, social worker, TB Program coordinator. This means involving health facility counterparts from district and intermediate levels and if necessary also some personnel from the reference hospital. At all stages there must be always involvement of middle or/and high management.

Organize a meeting with the right project team and present the indicator results for the past six months or the last year and compare them to the expected national indicators, targets and standards.

### 2. Identify and Measure Causes

- 2.1 Analyze Critical Activities Based on the Care Process
- 2.2 Perform a Baseline Measurement to Define the Current Situation
- 2.3 Develop the Pathway of Patient Care through a Flowchart
- 2.4 Present Tables and/or Graphics of the Results

Perhaps the activity that requires the most time and clarity is the identification of critical activities and the measurement of their causes. Therefore we will use a much more detailed explanation of their tasks in this step.

The time dedicated to facts analysis is one of the most important activities and it will be crucial to dedicate enough time before advancing to the next task. There use to be frequent jumps in logical thinking while analyzing the information and it is needed that the facilitator does not loose out of scoope what the true purpose of the analysis of data is and facts which are possible opportunities. It will be necessary to have flexibitiy with the time schedule until really all critical activities influencing the choosen outcome indicators are analized fully. It may be necessary to invest some 5 to 10 hours of effective work for the activities described below in 2.1

2.1 Analyze Critical Activities Based on the Care Process

### **CLASSROOM ACTIVITIES**

Exercise to identify critical activities.

A critical activity in the patient care process of the health care system that is not carried out correctly from the beginning can endanger diagnosis, treatment or the patient's life (Ruelas col, 1990).

Analyze the activities that each member did not do at the indicated moment (opportunity), carried out incompletely (general criteria of sufficiency), or carried out improperly (general standards criteria) according to their function. Note that it is not the idea to blame or accuse others for something done incorrectly or something they did not do according his role. The greatest value of this activity is that the weaknesses of the patient care process are Identified by the participants as a team and as a health care system.

a) All team members (doctor, epidemiologist, supervisor, etc.) must silently and individually record on a Post It note each activity performed incompletely, those not carried out, and those not performed on a timely basis, according to the role for which they were hired.

For example, you can begin by analyzing the role of the doctor (not as an individual but as a function), what he/she fails to do in the waiting room, what is performed in completely in the consultation room or in recording, if information is omitted when referring a patient to another health care facility, if adverse effects are explained when starting treatment, and so on. After a few minutes, critical activities in the patient care process with the nursing role, and later continue with laboratory service, monitoring teams, directors of District and State programs, director of health care center, epidemiologist, district health system chief, etc., until completing a sufficient database of the activities of the Right Project Team.

b) Once the individual exercise is finished, a coordinator and a secretary will be appointed in order to involve the whole team and compare what everyone recorded, player by player. The team groups similar activities of the same nature together, as you do when playing cards. First select one role player (nurse, for example); all share their observations and group them according to their type (promotion, detection, treatment...); then the whole team gives an opinion about the performance of the physician (preventive measures, recording, monitoring...), of the laboratory (processing, reception, reporting, timeliness...), etc., until you have analyzed all participants in the process.



a) Working individually



b) Participation of the entire team

c) The wording of the text is checked on clarity, if it specifies if the different actors performs the activity or not, and who this affects, (e.g., the laboratory only receives specimens from sputum smears on Fridays; or the supervision team only visits health facilities during national health campaigns).

Note that this is not about questioning or criticizing the opinions of other team members. The purpose of this activity is to review the clarity of expression of each individual analysis on each Post It note, and to make sure it is clear to everyone.

d) Subsequently, a purge of those activities that cannot be evaluated objectively is performed (i.e. there is apathy from the health promoter, or the doctor rejects the patient) unless its wording is clarified and it can be measured and not by occasional findings that cannot be validated. Eliminate those activities that appear to be too general and do not specify enough.



c) and d) Validation and Purging

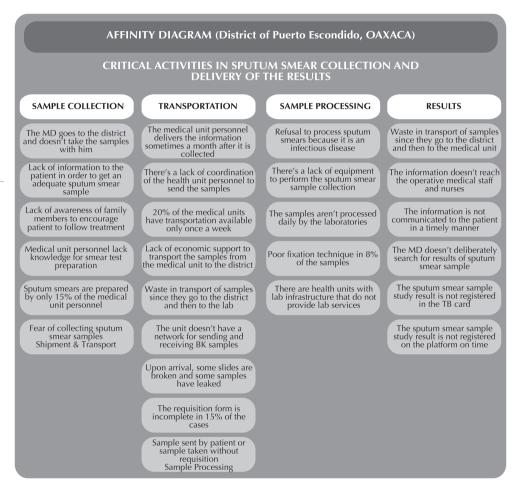


e) Presentation of the Affinity Diagram

### Chapter II

e) The next step is to create an Affinity Diagram showing all the critical activities per stake holder and headings that describe those ideas are identified. If the team were to indicate that the doctor does not interpret the sputum smear tests on the patient's chart; that he does not request contact of absent patients; that he gives quarterly appointments to patients that need regular follow up, etc., these activities can be grouped into Medical Records, in a hierarchical order.

Below you will find an Affinity Diagram related to the analysis of the process of sputum smear sampling and delivery of results, as one of the multiple causes associated with the analysis of the problem.



Source: Participatory Quality Improvement in District Health System to stop TB, workshop, 2007

It should be noted that the development of the Affinity Diagram should follow the steps listed above, since the team often starts discussing before starting individual work, or some participants want to start developing the Affinity Diagram before analyzing work as a team. Sometimes the team itself wants to divide the tasks without having analyzed what is happening in the patient care process at a local level.

2.2 Perform a Baseline Measurement to Define the Current Situation

### Field Activities

The following concepts have been taken from the Japanese culture; however, we have considered it necessary to broaden their interpretation in order to transmit to the working groups the value of direct observation of the care processes.

According to the Japanese, baseline measurements must be made by applying the genesis concept and the basic KAIZEN principles.

- **GEMBA** "Visiting the scene". This means that the vast majority of process indicators should be collected directly from health care facilities or communities respectively. Sources that collect and concentrate information are not always the most reliable because without a direct visit to the scene, valuable information of processing activities may be lost, which is the reason for rapid sampling for a quality improvement process.
- **GEMBUTSU** "Checking process activities". Depending on the activity assessed, there is a review of how each task is performed: the use of the recording instruments; procedures for appointments; supervision and monitoring of patients and how the team is organized.

As an example, there is a review of the congruency between the number of cases on the patient control card, the contact tracing report and medical records of contacts, if the patient is given an appointment at a certain time for the medication or attends spontaneously without previous agreement, if he is given the drug weekly or if intake is supervised at the time of visiting the health care unit, and so on.

• GENJITSU "Measuring results in real time". The point at which the activity is assessed, reflecting how the team is organized regularly. If there are health care promotion activities in the morning or not; if the patient has to wait to receive medicines, if patient appointments start immediately at the beginning of the workday or after several minutes or hours, after drinking coffee or having academic meetings, and so on. Real time provides information about patient care processes, in such a way that it is highly possible that what is observed at the right time, happens very frequently at other times in health care services. That is, it reflects the organization within the medical unit.

### Chapter II

Here are some considerations for the implementation of the baseline measurement through rapid sampling to be performed at most in a period of 1-2 weeks.

- a) Select the critical activities that are more significant in the whole care process of care described in the Affinity Diagram. Focus on the selection of two to five critical activities per stakeholder that are easily to demonstrate, based on the evidence available in medical units and at the district and state levels (second purge). It is advisable to have a total 10 to 30 selected activities at most.
- b) Transform the activity into indicators related to the care process in participating health care units and the corresponding Health District Health Office. These activities should be taken from the Affinity Diagram developed previously. A user friendly way of creating process indicators is:
  - by identifying the indicator (critical activity),
  - how to build it (identification or definition of criteria),
  - where to get the information (source),
  - period of time of the data collection,
  - sample size,
  - by defining who will be responsible for collection.

It is important to point out that these indicators should be process activities and not result indicators that are reported periodically in a conventional matrix.

- c) The recommended sample size is 60 to 100 cases. If there are less than 60 cases, include all the patients in the participating health care units. To justify the use of very few cases should be that the findings must be sufficient to initiate an improvement process.
- d) Do rapid sampling in less than a week or two at most, dividing the indicators between the participants, considering that it should be easy for those who have to collect the information, and they should commit themselves to presenting it at the next scheduled meeting with the right project team.

Below is a form that allows the clear identification of the selection of critical activities transformed into indicators:

CRITICAL ACTIVITY	CRITERIA	SOURCE	PERIOD AND Sampling	PERSON RESPONSIBLE
1. Patients with Directly Observed Treatment, Short-Course	Daily treatment at health center vs. treatment handed over to patient	TB control card from participating health care units	83 control cards	Heads of nursing at Health Care Centers
2. Sputum smear control	Interpretation of Sputum smear test results in Progress Note	Last entry of the month on Medical Chart	Medical records of 83 patients in control	Epidemiologist from Health Care Center
3. Conferences on TB Health Promotion	a) Number of conferences where TB was the topic. b) Number of conferences reported at SIS.	Schedule of conferences in waiting room	Second half of the year	Head of District Health Care Promotion

Source: Participatory Quality Improvement in District Health System to stop TB, Tapachula, Chiapas, November 2007 Table 5

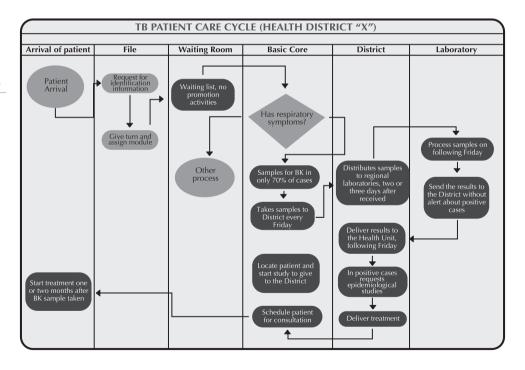
### Chapter II

### 2.3 Develop the Pathway of Patient Care through a Flowchart

In the case that the TB patient care explanation is not clear enough, it is necessary to make a flowchart showing the time it takes to receive and send a service and the movements that are performed within the health care unit, laboratory, health district, in order to get that result. Describe through a flowchart the cycle of the TB patient care process according to the following phases and the participation of different entities (as described below):

One possibility is to identify in time and manner the process of: health promotion in the waiting room and in the community, diagnosis, admission to treatment, handling of treatment, monitoring, control, surveillance, supervision, counseling and assessment. Furthermore, that the stakeholders (doctor, nurse, area team, manager) are responsible for doing so and what level (state, district, health care center, laboratory, storage area, hospital, etc.) they are in.

The example below shows a process map with critical activities that affect timeliness of patient care in the region marked in dark grey.



Source: Participatory Quality Improvement in District Health System to stop TB, workshop, 2007

Table 6

### 2.4 Present Tables and Graphics of the Results

The most convincing way to show that there are some weaknesses and opportunity areas is through the presentation of tables and graphics summarizing and organizing information for better understanding during their analysis.

This task is intimately connected with strategy prioritization, which is step number three.

### 3. Clarify and Prioritize the Intervention Strategies

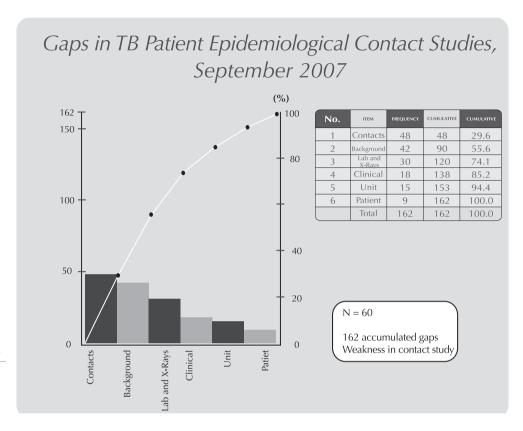
- 3.1 Establish Evidence-based Prioritization
- 3.2 Establish Strategic Areas
- 3.3 Clarify the Goals and the Specific Goals to Achieve

### 3.1 Establish Evidence-based Prioritization

According to the results obtained from the baseline measurement, where fundamental activities are identified, it will be necessary to perform a prioritization based on the evidences obtained.

There are different quality tools that can express the facts with hard data. One of these tools can be a Pareto Diagram, which must be expressed in terms of failures (instead of progress as it is expressed in a bar graph or histogram).

When you decide to select a Pareto, this must include criteria, sub criteria or sub-components of the same nature. If we refer to sampling quality, we could refer to the number of samples that did not meet the requirements established of each participating health care unit. If we refer to the epidemiological study, we will be able to compare the failure of each chapter per study made, as shown in the following example.

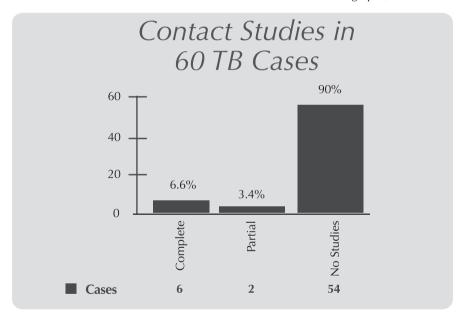


Source: Participatory Quality Improvement in District Health System to stop TB, workshop, 2007 Figure 3 However, the results can be so obvious that the presentation of the data can be expressed in percentage terms, or in proportions, provided that the interpretation of the information is clear for the health personnel:

### Examples:

- Four out of ten patients did not get an appointment for monthly control in District "X" during 2007.
- The average time of reception of sputum smears was 35 days with a range between 13 and 49 days.
- From the epidemiologic contact studies performed during "X" period, 90% did not have a contact study.

It will be easier to visualize the data if the written information contains graphs, as shown below:



Source: Participatory Quality Improvement in District Health System to stop TB, workshop, 2007 Figure 4

### Chapter II

### 3.2 Set Strategic Areas

The strategic areas should represent the set of critical activities or opportunities for improvement, according to the cycle of care analyzed in the Affinity Diagram. It is necessary to define clearly, according to results obtained, if our intervention should be focused on:

- Study of contacts,
- Timely delivery of sputum smears,
- Sampling quality improvement,
- Increase of adherence to treatment.
- Patient monitoring improvement, etc.

Of all the improvement opportunities, which may be many, it is useful to select, at the beginning, two to three strategies to initiate the improvement project; this does not mean that additional strategies cannot be included after six months or a year.

Improvement strategies should not be expressed in terms of training or application of standards. Training is the vehicle that leads us towards achieving the goals, but it is not the goal in itself. In other words, training the staff does not guarantee that they will perform the activities if they are not linked to a monitoring process, counseling, feedback, design of safety devices, input management, and so on. Moreover, standards serve as our reference to include all those activities that we should not ignore.

As a result, the objectives should represent patient care goals to achieve and not a need for skills, materials or knowledge required by the health personnel. They should always focus on the user of health care services.

### 3.3 Clarify the goals and specific goals to achieve

The strategic intervention areas should be translated into objectives: goals to achieve and the estimated time of achievement.

Once the objectives/goals (translation of strategies) are created, it is useful to identify intermediate or specific goals (action lines or how to reach them) that we should monitor and which may be translated into process indicators in order to facilitate leading the strategy and lead us by the hand in the development and monitoring of the quality improvement plan.

If as a result, we get that the complete study of contacts is only performed in 10% of the cases studied, the objective may be established as:

# Increase from 10 to 70% the study of contacts in the first six months,

with the corresponding action lines (specific objectives) and process indicators expressed in the following figure.

### STRATEGIC AREAS FOR IMPROVEMENT Contact Study Improvement PROCESS INDICATORS **ACTION LINES IMPACT** • Investigation of suspected Intra-house contacts **IDENTIFICATION OF** family members that studied **INDEX CASE** patient reports in his home No. of cohabitants OR informed about TB • Information on preventive **NEW CASE AROUND** and control measure for Detections made at STUDIED PATIENT the family to achieve home adherence to treatment • Quarterly monitoring of • Sputum smear from contacts suspected contacts

Source: Participatory Quality Improvement in District Health System to stop TB, workshop, 2007 Table 7

This conceptual framework can serve as a guide before starting the detailed construction of each of the performance activities presented in the next stage, which is the Action Plan.

### 4. Organize Your Action Plan

- 4.1 Development of a Tree Diagram for Each Strategy
- 4.2 Include All Stakeholders in the Process
- 4.3 Define Tasks in Terms of Measurable Activities

### 4.1 Development of a Tree Diagram for Each Strategy

There are many tools for developing an Action Plan; which to use depends on the level of abstraction of the information and if it is used for a district plan or internationally.

One of the tools we suggest using is the Tree Diagram, which is a tool where different aspects are visualized: the objectives (strategies), the actors, the action lines (specific objectives) and the performance activities to be carried out by each one of the stakeholders as an integral part of the TB patient care system.

In order to clearly categorize the information, and because each strategy has its own objectives and goals, it is desirable to develop a Tree Diagram for each of the selected strategies. Even though the actors may be the same, the control process will be easier for all people intervening.

(See example below)

### 4.2 Include All Stakeholders in the Process

The Action Plan should be an operational tool to clearly identify what everyone has to do and at the same time it becomes an instrument of control in which all involved are familiar with the corresponding activities, both individually and as a group.

Even when one of the stakeholders carries out only one performance activity and it is essential throughout the process of care, it is important to include the stakeholder since what he or she does or does not do affects the quality of the health care center system.

Be careful not to leave the majority of the activities to the physician and nurse in the module, since assuring the quality of the job in the system is associated with the complementary participation of all those involved.

### 4.3 Define Tasks in Terms of Measurable Activities

Measurable activities are the finest part of the Action Plan expressed in the Tree Diagram.

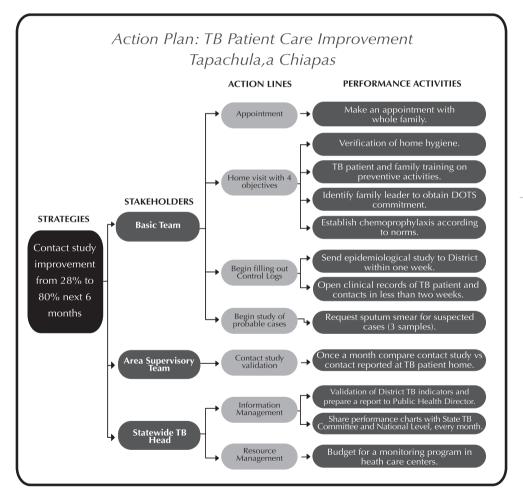
The measurable activities should be written in an observable and measurable style. Some of their characteristics are:

- They are described by means of an action (send, request, register, etc.).
- Someone does a job that is passed on to someone else (the chemist notifies the person responsible for the program), or demonstrates something through official records (physician records results of monthly sputum smear on progress chart).

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- Someone supervises and/or validates someone else's work (the head of the health center validates the complete filling out of the epidemiologic study).
- It includes opportunity criteria (...in less than 24 hours; in waiting room; on Fridays), and/or sufficiency (at least 3 sputum smears; for two months; every quarter).

The Tree Diagram may extend until including all those involved in the improvement process. On the other hand, it is important to remember that a Tree Diagram must be developed for each strategy (objective-goal).



Source: Participatory Quality Improvement in District Health System to stop TB, workshop, 2007

## 5. Prepare for Implementation

- 5.1 Create a Project Timeline
- 5.2 Prepare Awareness Meeting for Partners and Family Members
- 5.3 Prepare for Specific Training
- 5.4 Prepare for Launch Date

#### 5.1 Create a Project Timeline

It is important that the work team sets the activities to be performed and the period in which the activities will be performed in a Gantt Diagram. Note that the Schedule may permit amendments to the extent that there is an opportunity to extend or enter into partnerships through different means: academic forums, staff turnover, funding opportunities, remodeling, expansion to other heath care centers, etc.

Epidemiological Committee Presentation														
Activity	Jun- 07		Jul- 07		Aug- 07		Sep- 07		Oct- 07		Nov- 07		Dec- 07	
Health Center Sensitization														
Epidemiological Committee Presentation														
Specific Training														
Online Support & Consulting														
On-Site Consulting, Units A, B & C														
On-Site Consulting, Units D, E & F														
1st Evaluation Meeting														
Project Extension to the District														
Presentation of Results to the Minister of Health														
State Nursing Meeting														

Source: Example developed for the purpose of the document.

Table 8

### 5.2 Prepare Awareness Meeting for Partners and Family Members

The fundamental purpose of sensitization is to have more people aware of the objectives of the intervention and the way these activities will take place.

Like in any other company, a partner contributes with active participation in the achievement of the objectives. Each representative of the program, at the state level as well as in District Health System, has to be seen as a stakeholder. Through sharing the Action Plan with more people in the health sector and general public, the participation of more allies is obtained which will be able to support in a direct way (through the coordination) or indirectly (through sending suspicious TB patients to health care units) in the improvement of the performance of the district program for the attention of patients with TB.

The first group in which it is necessary to share the intervention strategies is the health care center personnel from each one of the medical units participating, as well as to the personnel at the district and state level. This must include the maintenance personnel, persons responsible of the storage facility and even the human resources or acquisitions coordinators, who might not be directly involved in the quality improvement plan, but we know that with more informed people and through recognizing what the specific working team is carrying out, they will be able to contribute in the objectives of the intervention.

Besides, there are committees within the health sector with which it is necessary to share the project. The more people are aware, the better the results will be.

No less important are our end users, the population, which needs to be well informed of what they can expect with the quality improvement plan and with the performance of the health care center services. For this, the medical unit will have to organize itself letting people know in the waiting room as well as in group meetings, bulletin boards and pamphlets, the way in which the health care center personnel is organized: for example, improving the expectations concerning the time to receive results of a lab study, timeliness of the care in getting appointments, meaning and importance of the family study, handling of the medication, etc.

Finally, the sensitization phase can be given before, during and after having initiated the improvement project and it is convenient to look for all the appropriate forums to let people know about the Project.

#### 5.3 Prepare for Specific Training

The training must be focused towards training in the service of the Specific Action Plan, unless there are weaknesses of specific knowledge. The checking of the strategies/objectives, specific objectives and performance activities must be carried out in the presence of all who appear as actors within the care process. The joint discussion of a text and the identification of complementary activities among those involved favor the sense of being part of the project, and then collaboration is very well accepted. It is recommended that this specific training not be greater than 6 hours of training.

# Chapter II

Before starting the specific action plan training, all the instruments of registration and the instructions for the procedure to guarantee the performance activities should be well defined and designed. For example: those involved should know exactly how to fill out the control card and the characteristics of an epidemiological study; the definition of a timeline with the role of the health care center personnel to carry out promotional and detection activities in the waiting room; the verification of the necessary inputs to carry out the detection of people with respiratory symptoms; the specific supervision tools of the Program; the organization of the working team to clarify who will accompany who in carrying out a certain activity (contact study); etc.

The team responsible for conducting specific training should prepare all the necessary supplies for distribution to the participants. They should also be aware of new proposals that support project performance improvement at the local and district level, as long as the fundamental objectives of the intervention are not lost sight of.

It should be noted that the specific training (for implementing the strategy) should be performed whenever new personnel arrive at the medical unit, whether they are in the training process or are temporary employees.

#### 5.4 Prepare for Launch Date

The launch date should be considered a special date for the health care unit or district; all the health care center personnel should be aware beforehand of what they have to do and what they can expect from the rest of the health care center personnel in a joint effort for better achievement of their activities.

Moreover, as with any inaugural event, this represents the conclusion of the planning phase and is the beginning of a phase of working in a different way, something that was developed by those directly involved in the process of health care.

The beginning date has a psychological effect among the participants and it is anticipated with enthusiasm when the points of view of the health care center workers have been taken into consideration and they feel they have contributed to the elaboration of the strategy.

The project team experiences the preparation, organized as a celebration, as its own, and there is no greater merit than having contributed to building a more efficient process. It helps individuals and organizations to move from a sense of individualization to an inclusive group project.

## 6. Monitoring the Improvement Process

- 6.1 Organize a Monitoring Plan
- 6.2 Compose Mailing List
- 6.3 Evaluate your Progress Periodically

#### 6.1 Organize a Monitoring Plan

Since the focus is participatory, once the classroom activities are concluded it is useful to divide the follow up and monitoring of the improvement project among several individuals in each unit, rather than it being the responsibility of the epidemiologist or of the director of the medical unit.

Nonetheless, someone should be the coordinator to collect information and show the progress of the project through diagrams. Agreements should be established so that the working group periodically shares the information on progress in each activity (this can be done on a monthly, bimonthly, or quarterly basis).

#### 6.2 Compose Mailing List

One of the most active ways to keep in touch with each one of the partners is through creating a mailing list that should have a very specific purpose: to keep the quality improvement project moving. In order to be transformed into a management tool, this mechanism should be used to:

- Share information on awareness/sensitization activities, specific training and implementation in each of the health care units at national, state and district levels,
- · Clarify doubts that may be of common interest,
- Share progress with the delivery of monthly monitoring tools,
- · Share bibliography,
- · Establish associations and partnerships,
- Keep everybody involved and informed of the progress of the improvement project.

Note: The mailing list should not be used to send jokes, share videos, announce social activities that are not related to the Improvement Project or for other uses which distort the purpose for which it was created

### 6.3 Evaluate Your Progress Periodically

Based on the process indicators defined in section 3.3 (specific goals) and on the performance activities, prepare a monthly, bimonthly or quarterly report. This report is to be shared horizontally, in meetings with all the colleagues in the health care unit, as well as vertically within the organizational structure of the district, at a state and national level.

Strive to let all the heads of areas know about the progress in process and result indicators, even when they do not request the information. The progress of the project is strengthened when management participates.

## 7. Document the Improvement Process

One of the most common weaknesses in our midst is that we do not keep evidence of all the effort we make on a daily basis.

There should be a coordinator for each level of responsibility (health care center, district, state) responsible for compiling all evidence of the effort they make in the improvement project.

The organization of information is essential. Either paper or electronic files must be archive instruments, where all the efforts of the team will be consolidated. The organization into chapters should be a task that is completed once there is sufficient evidence and when the consistency of information allows such organization.

Facing the authorities or any social pressure, it is important that there are no false expectations based on the desire to commit to quality improvements in the first months after initiating the project, nor should preliminary information with unreliable data be presented in academic for a; therfore the team should wait six months to a year when, after a period of gradual implementation of consistent and sustained work, the impact indicators can be evaluated. Even if change can be seen in the process activities during the first months, there is no guarantee that the desired effects have been yet obtained.

Experience in the implementation of improvement projects shows that when the team is consistent, it takes from one to three years until the project stabilizes and becomes a truly successful experience.

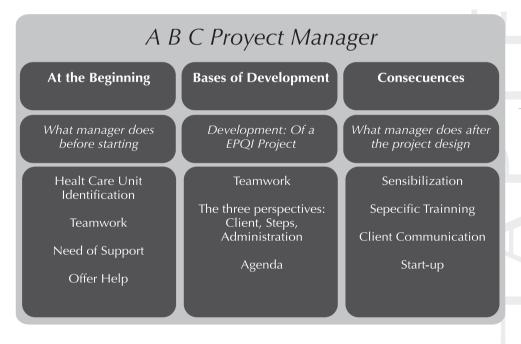
The best way to keep the project alive is by sharing the effort made with others, complying with a program of counseling and supervision by district project leaders, through the organization of off-site visits, letting people know about the improvement plan in academic activities, presenting results at national and international forums and publishing the results.

# Management and Leadership

Any attempt to improve the quality of the health care services cannot be achieved if there is no strong support from the project leaders at different levels in the health system, like the Head of the District Health System, the Director of Prevention, and the State Minister of Health.

In practice, the health personnel becomes enthusiastic when involved in improvement projects and their opinions are taken into account in the building of knowledge. The sense of belonging is inherent in the development of social beings.

The following table has been modified by J. A. Martínez from the original idea of the One Minute Manager by Ken Blanchard, and the following slide attempts to synthesize the seven steps for improvement into three main stages, which the project leader must consider in the planning, development and implementation of an improvement project (see below).



Source: Adapted by J.A. Martínez from the original idea of One Minute Manager by Ken Blanchard, 2007 Table 9

Practical Guide to improve quality TB patient care: A participatory approach

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# Chapter III

## The Challenge: How Do You Keep the Improvement Project Dynamic?

Perhaps the easiest stage is that of classroom activities (the basis for development, according to the image above), no matter how complicated the analysis was. You should pay attention to all of the details, from the selection of medical care units and working groups, to formal invitations, etc. Unforeseen situations may arise upon implementing the improvement project, such as: staff turnover, management changes, epidemiologic outbreaks, etc. Even with all these drawbacks, the most difficult and complicated part is making things happen in practice, and making them stabilize in everyday life.

### What Does It Mean to Be a Manager?

Something we have emphasized throughout the workshops on Participatory Quality Improvement is the responsibility of a manager, who besides receiving, processing, compiling and analyzing information related to the program for which he/she is responsible, needs to have a schedule with follow-up visits and counseling for various levels of responsibility and verify that the agreements and commitments are carried out horizontally and vertically. Management is not carried through only on paper, but rather it is key to regularly visit the place where the action occurs and make sure that things are happening.

Being a manager does not mean receiving information at your desk and giving long-distance instructions.

It is important to realize that on and after the launch date, the working team and every leader should consider the need to develop their own instruments for management control. The tools proposed below are based on three closely related control blocks: Documentation, Verification and Validation.

# **Documentation: Documentary Evidence**

The documentary evidence supports the archiving of the history of the management process of any project, including identification of outcome and process indicators of participating health care units on a regular basis; consultation documents, invitations, announcements; efforts to acquire the necessary resources for the development of best practices, agreements and commitments made with different governmental and nongovernmental organizations; schedules; photographs; etc.

## Verification: In Person, electronically or by telephone

The presence of project leaders on the scene is essential. The verification is accomplished with a well-established work program for regular visits to health care units to validate the recording instruments, to check procedures, participate in academic activities, and accompany the health care center personnel in the study of contacts. This gives added value to the performance of the staff activities directly serving patients.

Moreover, the follow-up testing, such as phone calls or the use of electronic correspondence also assists in verifying that things are happening. No matter how many times it is necessary to have electronic or telephone communication, it assures you that everything is occurring as expected. A document submitted without verification is no longer valid. If there are arrangements to have contact with some regularity, the operational staff will be aware of this pledge and so agreements will be more real.

#### **Validation: Health Personnel and/or Patient Surveys**

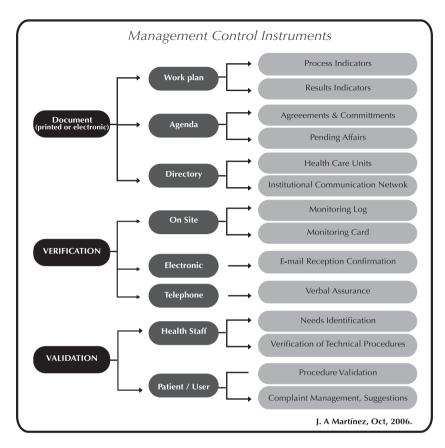
It is essential to go to the place of actions and establish direct contact with the health personnel at the time when they are performing their activities. The cross-evaluation (with people from the same area) and concurrent evaluation (intervening with comments for improvement) will help create better performance. On the other hand, it is a great opportunity for the health workers to talk about the conditions under which they operate and to identify resource requirements.

Direct surveys for patients is a tool that allows us to obtain more reliable information about the process of care, as long as the questions are directed towards the evaluation of technical quality aspects.

Interviews of health care staff and TB patients are complementary and indispensable activities that must be organized with certain frequency.

It should be noted that documentary control, verification and validation do not guarantee any process if they are done separately. On the contrary, they must be developed in a complementary way.

While the following table does not exhaust the possibilities that you can play with for your specific project, what it tries to show is the interrelation between activities as instruments of management control and their possible components.



Source: Martínez J.A. Seminar on the Integration of Top Management in Health Services in Sinaloa, October 2006

Figure 6

In the case of the 12 states that participated in workshops to learn and apply this methodology in Mexico and to Stop TB, we have found different levels of development: from Districts where nothing had happened after the workshop, due to lack of monitoring and involvement of the different levels of decision-makers, to a significant improvement in the entire cycle of TB patient care and where the operational staff is highly motivated, with the support of the people responsible for the district and state program, and above all, top management that supports the operation of the health care services.

The preparation for intervening to improve a particular health problem requires stable teams that can continue constructing successful projects as they go, but if the management leaves them on their own, all efforts will be blunted and transformed into a mere classroom activity.

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