

## 10. Health Systems

### Introduction

A health system can be defined as a comprehensive network of public, private, parastatal, NGO, and informal sector providers and facilities. This includes all cadres of health workers and the financial, policy, and technical institutions and mechanisms that support providers and their health care facilities. The design and strengths of health systems are as diverse as the countries in which they function. As such, consideration for the context in which DOTS is being or can be delivered is a foundation for planning and implementing a sustainable, locally appropriate, and successful DOTS program.

The DOTS strategy includes technical and operational norms that have been successfully implemented through diverse health system structures—from community-based to highly specialized care structures. The DOTS strategy is designed to enhance the capacity of the primary health care network to detect, diagnose, treat, and cure TB patients. The implementation of quality TB control may strengthen the existing health system, particularly where it improves the referral networks between providers and laboratories, strengthens drug planning and management, and sharpens the focus on case management and successful treatment outcomes. Furthermore, DOTS expansion efforts are most effective where delivery strategies capitalize on the existing strengths of the health system, anticipate and adapt to changes in health system infrastructure or functions, and address health system constraints.

The monitoring indicators related to health systems are meant to support the identification of strengths within the health system that may be tapped into for DOTS delivery and to gauge the level of involvement of the TB control community with the wider health system. Particular emphasis is given to monitoring utilization of the forums and mechanisms used for policy development, budgeting, and planning in the health sector for the systematic contribution of TB control activities to broader health system priorities, and vice versa. These indicators highlight the needs at national and more decentralized levels for active collaboration between the TB control community and other health system partners.

The monitoring indicators related to health systems are of two types:

1. **Policy and planning**—that is, those that monitor the engagement of the national TB program with partners in the health system in terms of planning, including the following:
  - a. TB control is highlighted as a priority within health sector plans (Indicator 3.1).

- b. Budget is available and transparent for TB at all levels (Indicators 3.4 and 3.5).
  - c. TB program is represented in health services planning forums such as district health management committees, national health planning units, or their equivalents (Indicator 3.4).
  - d. TB benefits are included in national and community-level insurance schemes.
  - e. Anti-TB drugs are included in the essential drugs list.
  - f. TB control is integrated in the primary health care system (Indicators 3.1, 4.2, 5.1, and 9.3).
2. **Implementation**—that is, those that identify barriers or opportunities for DOTS implementation and expansion within the health system, including the following:
- a. TB control is included in monitoring or evaluation of overall PHC system performance.
  - b. Percentage of health facilities that are involved in the DOTS network (e.g., percentage of public dispensaries that are stocked with anti-TB drugs and with staff equipped to deliver DOTS) is calculated (Indicators 6.7, 9.1, and 9.2).
  - c. Percentage of health workers who have been trained in DOTS delivery is calculated (Indicators 3.9, 9.1, 9.2, and 9.3).
  - d. Distribution of the beneficiaries of TB control services is similar to the estimated disease burden in the general population; notably, the gender, urban/rural, ethnic, and economic status of DOTS beneficiaries matches the estimated burden (Indicator 10.1).

**Indicator**

- Equitable distribution of DOTS

## Resources

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**Indicator 10.1**

**EQUITABLE DISTRIBUTION OF DOTS**

**Definition**

Percentage of TB patients notified under DOTS who represent specific subpopulations, namely 1) poor, 2) rural 3) ethnic groups, and 4) women,<sup>1</sup> relative to the percentage of the population accounted for by these subpopulations.

$$\frac{\text{Number of TB patients living in poverty}^2 \text{ notified under DOTS in specified time period}}{\text{Total number of TB patients notified under DOTS in specified time period} \times \text{the percentage of the population living in poverty}} \times 100$$

Subpopulations 2, 3, and 4 can be substituted for subpopulation 1 in the above definition of numerator and denominator.

**What It Measures**

The indicator measures the depth of DOTS coverage (i.e., the ability of the current DOTS delivery system to reach disadvantaged populations). The information is useful for identifying subpopulations that are not accessing DOTS proportionally, so that targeted interventions to reach these groups can be introduced. This indicator may reflect general strengths or limitations of the primary health care network in serving the population. Monitoring of this indicator over time will enable consideration of the appropriateness of DOTS delivery mechanisms for various subpopulations and will also facilitate the identification in possible changes in TB epidemiology (e.g., increase in the percentage of TB patients who are women, linked to the disproportionate number of women infected with HIV). Few countries have reached the global target of detection of at least 70% of estimated cases. It is frequently not well understood who the “missing” cases are. This indicator will help to identify subpopulations that contribute to the cases not reported. Monitoring of this indicator also affords an opportunity to evaluate whom is receiving public subsidies for TB control.

<sup>1</sup> Historically, the incidence of TB has been higher among men than women, so equality in case notifications may not be expected. However, in many countries with high HIV prevalence, the gender balance is shifting and is approaching a 1:1 ratio. Measuring the distribution of DOTS between men and women must be done in the context of the local epidemiology.

<sup>2</sup> Definitions of poverty may be country specific, and the classification of patients into “wealth categories” may require special surveys. Detailed information on measuring poverty is available on the Internet at <http://www.worldbank.org/poverty/health/index.htm>.

### **How to Measure It**

The numerator is the total number of TB patients from a specified subpopulation notified under DOTS. Among data on the four subpopulations included in this indicator, only gender data are routinely collected. Additional data must be collected from patients during routine visits or as part of a special survey to enable analysis of the proportion of poor, rural, and ethnic groups accessing TB services.

### **Data Sources**

- Quarterly reports on TB case registration
- Census statistics
- Special surveys

### **Frequency & Function**

This indicator should be measured annually.

### **Strengths & Limitations**

This indicator allows for a more in-depth evaluation of DOTS coverage in a population and may help to identify subpopulations not being reached by DOTS. Without TB disease prevalence data disaggregated by these subpopulations, the indicator assumes equal distribution of TB in the population and therefore may underestimate underrepresentation of some marginalized populations that, in fact, have a higher prevalence of disease. The indicator relies on the collection of data not routinely collected or reported.