Assessment of human resources and time needed to implement the DOTS strategy for TB control in health facilities

Survey instrument and guide to implementation

World Health Organization

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STOP TB DEPARTMENT

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Contents

I. Rationale

A lack of adequate, sufficient, and motivated human resources (HR) continues to be one of the most important barriers to implementation and expansion of DOTS[1] in many parts of the world. Furthermore, there is little information about the skill mix needed for adequate implementation of activities to control tuberculosis (TB), about the various cadres of health-care staff involved in managing patients in national TB control programmes (NTPs) following the DOTS strategy, or about the different tasks and the time needed to perform them.

The types of health-care staff involved in TB control vary between and within countries. In each country, health policies and professional and institutional regulations determine what tasks each cadre of health care staff is allowed to perform. There are virtually no data available in this area, even though the information is vital for the identification of training requirements, development of appropriate, needs-based, curricula and job descriptions, and HR planning, including estimating the number, type and distribution of staff needed for TB control now and in the future. Knowing who does what, where and in what time will allow NTP managers to better identify staff requirements, pinpoint gaps and estimate future HR needs, and allow them to substantiate their requests for resources to ministries and policy-makers.

II. Measurement strategy

The questionnaire presented here has been designed as a survey instrument to determine which cadres of health-care staff are involved in managing TB patients at peripheral (primary care) level in NTPs following the DOTS strategy, and to assess the time they need to perform the tasks related to TB care. In its current form, it should be implemented by a team of trained interviewers. It is intended as a survey instrument, not as a planning tool.

The questionnaire follows the flow of a TB patient through the DOTS implementation process, from the point of being recognized as possibly having TB (i.e. TB suspect with TB/respiratory symptoms) to completion of treatment and discharge. The definitions of TB suspect/respiratory symptomatic may vary between countries; also the requirements used by programmes to identify and examine TB suspects may differ, as well as the implementation of the respiratory/TB symptomatics register.

While the questionnaire has been designed to be used by NTPs, not all the activities are necessarily performed everywhere. For example, some NTPs recommend a monthly medical examination of TB patients undergoing treatment; others recommend examination only if there are problems with the treatment regimen. Therefore, in order not to be prescriptive, all items in the questionnaire include a *not done* (ND) option. Completion of the questionnaire in non-DOTS areas may be difficult, because the tasks performed in these settings may be considerably different.

Section 1 of the questionnaire includes general information about the health facility, the population and area covered, whether there is a team or a nominated person responsible for coordinating TB control activities, and some basic programme information on the numbers of TB patients seen at the facility and their treatment outcomes.

[1] The internationally recommended strategy for TB control until 2005, and the foundation of the new Stop TB Strategy introduced in 2006.

Each section begins with a set of general questions referring to the burden of TB in the area (i.e. activity, the number of TB cases or TB suspects seen in the health facility in the previous year, the number of contacts examined, etc.). These data – although not epidemiologically significant – will allow approximate workloads to be calculated for each health facility at the current case detection rate. These general questions can be cross-referenced with information available in the different registers (the TB register, the TB suspects/respiratory symptomatics register and the laboratory register).

These general questions are followed by questions about specific tasks that are performed by individual members of staff. Some tasks are very simple, and may even seem insignificant, but they nevertheless consume the time of health-care staff, and in settings with a high TB burden could account for a considerable part of their workload. Many items may appear to be repeated; this is simply because these tasks are performed repeatedly at different stages of the patient's progress during treatment, and the time required may vary at the different stages as patients and staff become more accustomed to the procedures.

Some tasks may be performed by different cadres of staff at the same health facility. In these cases, describe the cadre of staff that usually performs the task (i.e. the cadre of staff that performs the task more regularly), and the average time required (from beginning to end). If tasks are performed by members of the community, volunteers or staff of nongovernmental organizations (NGOs), please specify this in your answers.

The questionnaire should ideally be answered by the whole team dealing with the management of TB cases (including laboratory staff), or by the specific member of staff responsible for TB services at the health facility.

III. Sampling considerations

Unit of assessment

The unit of assessment for this survey is the individual health facility; therefore, one questionnaire should be applied to each facility. The key consideration when selecting the facilities to be studied (**study sample**) is that they should be an unbiased sample of all the health facilities in the country. In other words, the sample should be representative of the country's health facilities, in its characteristics, organization, type of staff, and services provided.

Sample selection

The sample facilities should be randomly selected from a list of all health facilities providing TB care at primary health-care level in the country (**sample frame**). The random selection process ensures that each facility will have the same probability of being selected (or not) for the survey. The selected facilities will be scattered geographically, and considerable time and resources may be required to travel from one location to the next. If there are different types of health facilities at primary health-care level providing care to TB patients, construct a sample frame for each type.

The characteristics of urban health facilities may be very different from those of rural facilities, in terms of staffing arrangements, services provided, organization and TB burden. There may also be differences between geographical, social or political areas (states, districts, oblasts, puskesmas), or depending on which NGOs are working in the area. In this case, it may be appropriate to generate **area frames**, i.e. lists of all the facilities providing TB care in each area. A quota sampling technique could then be used to ensure that a representative sample is obtained of each type of health facility and from each potentially different area. This method could also considerably reduce the need for travel, since facilities selected in this way will be clustered. The number of regions to be assessed, as well as the number of each type of health facility within each region, should be determined by the NTP on the basis of the specific geographical, epidemiological, political and health service conditions in the country.

Sample size

For the data to be representative of the country, a minimum number of randomly selected health facilities from each of the regions should be surveyed. Determining the sample size is complex, and in practice will depend on the total number of facilities in the country, budget, staff capacity, distances and accessibility of health facilities. Provided that facilities are randomly selected, the larger the sample size, the greater the precision of the results.

Statistical and epidemiological programmes, such as EPI INFO, have simple instructions for calculation of sample sizes. In the absence of a computer program, a minimum sample of 205 facilities will give a relative variance of 15%, assuming that half of the facilities exhibit a particular attribute (and accounting for cluster design effects). If using a quota sampling technique, divide the sample size by the number of areas to calculate how many facilities are required from each area. This number may be increased to allow for non-responders and to improve precision.

Sampling process

- Compile a list of all primary health-care facilities in the country (**sample frame**).
- Group the facilities (stratify) according to region, urban/rural, type, or other criteria that might influence the services provided and the staff (**area frame**) selected.
- Draw a random sample of facilities within each area frame. (A dice can be used to identify a number. Throw the dice; if it reads "5", select facility number 5 and every 5th facility after that until you reach the quota needed for that particular area. Move to another area frame and repeat the process.) All the selected facilities constitute the **study sample**.
- Assign the selected facilities to your team of interviewers.

IV. Considerations when administering the questionnaire

It is important that the questionnaire is completed in the same way for all respondents, in all health facilities, and in the different areas of the country, so that the information obtained is comparable. Before administering the questionnaire in health facilities, the team of interviewers must be familiar with the questionnaire itself, the DOTS strategy, and the different registers used in the NTP. They must understand each question and the tasks they refer to, and be thoroughly familiar with how to administer the questionnaire. Interviewers should practise conducting interviews and administering the questionnaire to each other.

The questionnaire has been written in English. If it is translated into another language, it is advisable to ask a different translator to back-translate it into English, to ensure that the interpretation of tasks and the translation are accurate.

Ideally, the questionnaire should be completed by the interviewer, in an informal, non-threatening discussion with the TB team (including any laboratory assistants), or with the person responsible for TB control activities at the health facility. If there is not a nominated person responsible for TB activities at the health facility, the questionnaire could be administered to the director of the facility (if he or she is familiar with the TB control programme), or the main nurse involved in implementing TB control activities. Programme information can be obtained from the TB register, the TB/respiratory symptomatics register and the laboratory register.

After obtaining authorization from the health facility director, the interviewer should introduce him or herself to the TB team, and try to establish a good rapport by explaining the purpose of the questionnaire. It is important to emphasize the non-judgemental nature of the questionnaire, the anonymity of the interviewees and the confidentiality of the data. Explain how the time assessment will be used to measure staff requirements rather than to qualify the performance of staff from the specific health facility. The more comfortable the interviewees feel, the more likely it will be that the information provided is reliable. Make sure that respondents do not feel rushed (by the interviewer or by work pressure), and that the atmosphere is comfortable and pleasant at all times.

The questionnaire has been written in a standard format. All questions written in normal print can be read to the respondents. Sentences written in *italics* are instructions for the interviewer and do not need to be read aloud to the interviewee. Different types of questions and response categories are used. Many of the questions have a yes/no answer; these should be read to the interviewees. Some questions have multiple options; this does not mean that they are closed-ended questions, i.e. that respondents must choose from the options provided. The options are not meant to be read aloud. Tick all the options mentioned by the respondents, and note other answers under "Other". Make sure your handwriting can be easily read. Some questions include "skip" instructions (*please go to question #*); skipped questions should be left blank.

Interviewers are responsible for asking the questions, filling in the questionnaire, and reviewing the different registers. Before leaving the health facility, the interviewer should make sure

Administering the questionnaire

- Make sure that all the interviewers understand the rationale of the study and the importance of obtaining reliable information.
- Make sure that all the interviewers are familiar with the DOTS strategy, the activities included in the questionnaire and the different TB registers. During training, ask interviewers to administer the questionnaire to each other.
- After obtaining authorization from the director of the health facility, the interviewer should explain to the TB team the purpose of the questionnaire, its non-judgemental nature, and how the information will be used confidentially, preserving the anonymity of all respondents.
- The questionnaire should be completed by a trained interviewer in an informal discussion with the TB team (including any laboratory assistants), or the person responsible for TB control activities at the health facility.
- Before leaving the health facility, interviewers should make sure that the questionnaire is fully completed, including data from the different TB registers.