A toolkit for rapid assessment of health systems and tuberculosis control

SYSTEMIC RAPID ASSESSMENT TOOLKIT: (SYSRA)

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Acronyms and Abbreviations

AIDS Acquired Immunodeficiency Syndrome
CBO Community based organisation (non-governmental)
CSO
DEPLESET Demographic, Economic, Political, Legal and Regulatory, Epidemiological, Socio-cultural, Ecological and Technological framework
DST Drug sensitivity test
FBC Full blood count
FBO Faith based organisation (non-governmental)
GDP Gross Domestic Product
GFATM Global Fund for AIDS, TB and Malaria
HIS Health Information system
HIV Human Immunodeficiency Virus
HSFRM Health Sector Finance Reform Model
IDU Intravenous drug user
IS Information Systems that include information flows in organisation context
IT Technology (hardware, software, system and database platforms, networks, storage, communication) to handle information within an organisation
M&E Monitoring and evaluation
MCH Maternal and child health
MDR-TB Multiply drug resistant tuberculosis
NGO Non-governmental organisation
NHA National health accounts
RAR Rapid assessment and response
SYSRA Systemic Rapid Assessment Toolkit
TB Tuberculosis
THE Total health expenditures
TPE Total public expenditure
WB Western Blot
WHO World Health Organisation
INTRODUCTION

Although a number of guidelines and manuals exist for baselining, assessment, monitoring and evaluation of infectious disease programmes these lack well developed tools that enable an assessor to take into account of the wider health system context. This is surprising given that often the health systems factors constrain the success of such programmes.

For instance, the WHO tuberculosis strategy is based on five elements considered essential for global tuberculosis control: political commitment; case detection using sputum microscopy; standardized short course chemotherapy; regular drug supply and a standardized recording and reporting system. Assessment based on these elements fails adequately to capture intelligence on the health systems context impacting on programme efficacy. Consequently, assessments of the success or failure of programmes are done with a limited analysis of the context and tend hence to be narrow in focus, limiting the ability of policy makers to draw lessons for wide use. The WHO “Guidelines for conducting a review of a national tuberculosis programme” identifies that one of the purposes of reviewing a tuberculosis programme is to describe the national tuberculosis programme resources and structure within the context of the general health care system, health sector reform, and the economic status of the country1. The document highlights that one of the objectives of reviewing a tuberculosis programme is to analyse the “current structure of health service management and financing, and potential changes over the next five years which will affect the national tuberculosis programme”. However, despite WHO recommendation highlighting the importance of such a review no formally validated tools exist to undertake a detailed assessment of the health system and the broader context.

A recent WHO report highlights the major systemic constraints to Directly Observed Therapy-Short Course (DOTS) implementation and recommends a comprehensive and multi-sectoral approach to tuberculosis control2. This obviates the need for tools that take into account health systems issues as well as focusing on a particular vertical programme.

Vertical programmes tend to focus on a disease, such as tuberculosis, and hence the programme goals and objectives are often highly specific and tend to be more easily measurable and achievable. The WHO and the International Union Against TB and Lung Disease (IUATLD) recommend and strongly support a closer integration of vertical programmes into the health system through “a pragmatic approach combining a specialised, well defined management system with a fully integrated service delivery”3. However, in many countries integration is not achieved and programmes are set up in parallel with existing health systems. At worst, the objectives of vertical programmes are not fully aligned with countries'
governmental health priorities and are ‘owned’ by international development agencies or local NGO’s that have different lines of management and accountability resulting in fragmentation and duplication of services. When such discordance exists the likelihood of effectively integrating the vertical programme into the health system declines, increasing the risk of governments diverting resources away from areas covered by externally supported vertical programmes, reducing the ‘added value’ these programmes may bring and the chances of long-term programme sustainability. Successful vertical programmes can, however, be ‘rolled-out’ nationally and become part of the existing health system. Notions of sustainability are of critical importance.

Many constraints faced by vertical programmes have their roots less in the technical. Addressing health systems issues and strengthening the health system rather than the vertical programme alone increases the chances of sustainability for the vertical programme. To fully capture the complexities of a vertical programme embedded within, or running parallel to (but still influenced by), the health system, a more comprehensive joint assessment of the health system and the vertical programme is necessary.

This toolkit can be used for rapid assessment, monitoring and evaluation of the elements of the health system and a tuberculosis control programme. A different version of the toolkit has been developed for assessment of HIV/AIDS prevention and control programmes. The advantage of the toolkit is its inter-programme usability and its pragmatic nature.

The toolkit comprises two elements: The first element, the “horizontal assessment”, is for analysis of the health system within which the infectious disease programme is embedded from a variety of perspectives. The second element, the “vertical assessment”, is used to assess the infectious disease-specific component.

The toolkit has been designed to be used for programme monitoring and evaluation and could be used on an annual or biannual basis depending on the local and programme requirements.

The over-arching conceptual framework on which this toolkit is based bears similarities to the approaches to evaluations proposed by Atun, Hsiao for health systems and Pawson and Tilley generally but goes beyond these. First two approaches are strongly analytical and focus on the “levers” or “control knobs”, the inputs and processes that can be modified to achieve health system objectives whereas third extends the analysis to underlying factors that influence change. The approach adopted in the development of the toolkit aims to find a middle ground between the meta-analysis, with roots in evidence based medicine, and narrative review which is a more inductive approach examining and comparing the features of dif-
different programmes and drawing conclusions about what makes them more or less successful.
PART 1 PROGRAMME THEORIES, TUBERCULOSIS CONTROL, AND HEALTH SYSTEMS ASSESSMENT

Programme theory development

Understanding complexity such that it might inform programme implementation is a difficult and testing challenge. But, as Dick and Buskens, in relation to tuberculosis control, have recently suggested, this does not mean that we should not try\(^\text{10}\). Part of the challenge results from the notion that fundamental epistemological and ontological tensions exist between researchers from different disciplines. Nevertheless, in recent years researchers have been trying to develop research approaches that might improve our knowledge and develop a more coherent understanding of what works, what does not work, and why some interventions appear to work whilst the same interventions do not in different settings, under different influences. A more nuanced framework to evaluate programmes of control is needed, one that is inclusive of qualitative and quantitative research techniques, and of experimental, sociological, and managerial disciplines, an approach that encourages, in the words of Pawson and Tilley, ‘paradigm liberation’\(^\text{11}\).

Assessment of health systems with DOTS programmes that takes into account the complex environments within which they sit offers an opportunity to develop a systematic approach to evaluation, one that rejects a hierarchical view of evidence that has, it can be argued, constrained understanding and programme development. By understanding how environmental complexity influences programme delivery more systematically we might be able to develop programme theories, that is, improve our understanding of why and how some mechanisms work (or do not) in given circumstances such that lessons may be drawn to inform programme implementation in circumstances that are similar. This does not mean that evaluations are deductively premised and generalisable. It means that common sense dictates the potential for programme (or components of programmes) transferability. Thus we need to move away from the notion of ‘best technical solution’ and a ‘one size fits all’ approach to TB programme planning that ignores the various and unpredictable outcomes likely in different settings.
Programme theories are developed through an iterative process of evaluation of many programmes in order to draw out common themes and lessons. And embedded within such theories is a robust, rigorous and explicit adherence to research techniques. Systemic evaluation, evaluation that pays attention to contextual rather than just technical factors, is necessary if programmes are to be understood and implementers and evaluators to learn from them.

Disease specificity facilitates the focus of interventions on a clearly defined entity, making this approach well suited for tuberculosis programme evaluation. Moreover the DOTS framework enables the team to frame their analyses under each component of DOTS. Whilst each component of the DOTS strategy might be implemented through a variety of mechanisms which impact at various stages of any patient’s pathway the success of these mechanisms is dependent upon how a range of contextual factors influence implementation.

If we are reconciled to the need to draw from a wide range of research and evaluative approaches so that our understanding of complexity can inform programme development then we need to be able analyse data systematically and comparably drawn using a variety of disciplinary methods and be explicit in recording our methods.

By triangulating research findings from several disciplinary approaches internal validity may be bolstered, and alternative explanations and perspectives explored. Through conjecture and iteration programme theories will develop. This approach means that knowledge gained moves from being tacit to explicit. Whilst tacit knowledge is personal, specific to the individual, based on accumulated experience and not systematised for sharing with others explicit knowledge, on the other hand, is captured and systematised and hence can be made available to others. Effective systems of systems evaluation must, therefore, convert tacit knowledge into explicit knowledge so that lessons can be drawn and shared effectively.

The term ‘programme theories’ was coined, as noted, by Pawson and Tilley in ‘Realistic Evaluation’ to describe an approach to evaluation that is iterative in nature and draws upon experience gained in similar settings such that models or ‘theories’ are developed that help
to explain successes, failures, challenges, and frailties of these programmes and inform pragmatic decision-making. Instead of asking simply whether a programme, for example a DOTS programme, works or not, realistic evaluation tries to develop an understanding of why a programme works, for whom, and in what circumstances. By outlining the conceptual reflections underpinning the development of our model and drawing from the complex interplay of individual, institutional, processual, and structural relations within a complex wider environment ‘programme theories’ relevant to communicable disease control should become systematically grounded and better able to inform policy implementation.

The differences between trial data and field data are illuminating as are the conclusions drawn from such data. The paradigm in which trials are conducted, analysed and interpreted is very different from that of those working in the field, an observation common to many types of intervention. Whilst much of the debate that has raged over conflicting results drawn from different settings has focused on narrow methodological issues, the paradigmatic differences are often seemingly forgotten overlooked or obscured. Whilst the conduct of trials (and statistical meta-analyses) rests upon the notion of control of confounding, elimination of bias, and generalisability of findings, the nuanced understanding of successes or failures of programmes in the field often rests upon an understanding of exactly those factors that the trial methodologically has attempted to control for and thereby remove from analysis. Whilst trials control for confounding, those in the field (and those working with qualitative methodologies) are often struggling to understand confounding. Consequently, those implementers working in the field may themselves resist implementing components of programmes based upon trial data (or encounter resistance from peers), not because they (or their peers) do not believe the findings or accept that the trial was conducted rigorously (though those who object to drawing upon trial findings often resort to methodological criticism first) but because, they argue, it is precisely because the trial failed to take account of the contextual setting that the application of lessons drawn are not relevant to the circumstances in which they are working.

In order to overcome the impediments to progress in expanding the DOTS strategy several experts and institutions are calling for further research on how interventions to support adherence to treatment might be improved. This toolkit aims to be a step in supporting a more profound, and systematic, understanding of the broader environment in which these programmes sit (of which mechanisms to ensure adherence are but one component), and which might identify the circumstances in which some programmes work while others do not and therefore inform in a practical sense policy making and programme implementation.

Why has evidence from research sometimes failed to reach the policy arena, to support effectively practical service delivery? This may, on occasion, be because of a failure of researchers to acknowledge the importance of the contextual environment in which pro-
grammes (often vertical and externally supported) are implemented such that lessons are not drawn, mistakes are replicated, and sustainability is not assured. This problem, in part, results from the differing paradigms that researchers inhabit, and their failure to communicate effectively in a productive manner. As well as vertical health care systems for tuberculosis frequently being nurtured it could be argued that vertical (or parallel) research paradigms are being generated and sustained.

**If programme implementation of the DOTS strategy is to be effective, and if global expansion of the roll-out of this strategy is to be assured, then policy-makers and implementers of programmes need to be able to draw effectively upon others’ experience of both successes and failures and contexts within which they are rooted. And to do this a systematic framework to support evaluation is required that acknowledges the importance of context.**

We have outlined the **thinking behind the development of one such framework.** This evaluation framework has been used to conduct an analysis in a number of settings including a tuberculosis control programme in Russia and other communicable disease programmes (for example in South Africa) and it is hoped that in publishing accounts programme theories that inform better our understanding of efforts to control tuberculosis might be facilitated.

**Analytical framework**

Health systems development is the subject of much discussion in the academic and policy-making arena. In particular, evidence-based policy making and measuring the performance of health systems has forced policy makers to evaluate the context and process of health systems development in a more systematic and structured way.

This interest was elevated to a new plane with the publication of the World Health Report 2000\(^\text{13}\) that ranked each member country’s health system according to a Health Systems Performance Assessment framework.

The analytical framework used to assess health systems should capture inputs, processes, outputs and outcomes of the system but also capture the interrelationships between each component as suggested by Frenk (1994)\(^\text{14}\). Moreover, the wider context within which the health system functions and interacts also needs to be evaluated.

Many existing frameworks for measuring health systems performance are based on health sector inputs and resources as well as processes rather than outputs or outcomes\(^\text{15}\). This is probably because health sector inputs and processes are easier to measure and the data on these can be obtained in the short term.
Health sector outcomes are altogether more difficult to measure in terms of ascribing causal relationships. That is, does introducing a new financing system improve health outcomes or are these improvements attributable to other factors? Health outcome information is often only available in the longer term, something many governments and donor agencies find difficult to accommodate within their financial and political cycles.

A health system is made up of elements that interact together to make up a complex system whose sum is greater than its parts. The interactions of these elements affect the achievement of health system goals. Although these goals may differ in emphasis between different countries essentially they are very similar.

Hsiao (2000) defined health systems as a means to an end. He has described a conceptual framework based on this notion to systematically analyse health systems. Building upon this, this toolkit draws upon a novel model that specifically and explicitly links system ‘control knobs’ or ‘levers’ to health sector goals. This model identifies four levers in health system management. Modification of these levers enables policy makers to achieve different intermediate goals. The financing lever relates to how the health system is financed – the sources of financing and the way these finances are pooled. The second lever, resource generation and resource allocation, describes how resources are generated and how these resources are allocated. The third lever, stewardship and organisational arrangements, refers to the way the ministry of health manages the health system and the effectiveness of this approach, as well as the structural arrangements for purchasers, providers and market regulators. The fourth lever, service provision, encompasses notions of ‘content’, that is, what the health sector provides rather than the structures within which this content is delivered. As in Hsiao’s model these levers can be viewed as both system inputs and processes.

The intermediate goals are frequently cited as end goals in themselves. However, this framework suggests that efficiency (macro and micro [technical and allocative]), equity, effectiveness and choice, whilst obviously desirable, are not ends but means and intermediate steps in contributing to the attainment of the health sector’s ultimate goals of health, financial risk protection and consumer satisfaction. These intermediate goals describe the level and distribution of inputs required to achieve health system goals.

In the toolkit, this framework is further expanded to take into account the context within which the health system functions including demographic, economic, political, legal and regulatory, epidemiological, socio-demographic and technological contexts. Further, as each country and health system has a distinct history, which shapes the context and subsequent trajectory of development the political economy and of the health system, this must be captured in the analysis.
The terms used by Hsiao have also been adapted to include the terminology adopted by the World Health Organisation in their framework for assessing health systems and their functions\textsuperscript{18}. To this end, resource allocation has been termed resource generation and allocation in order to ensure that both of these roles are identified and assessed. Organisational arrangements have been expanded to include stewardship or oversight, as this is felt by the WHO to be one of the primary roles of national governments in healthcare in the current global political context of market orientation and decentralisation. Choice has been expanded to include the goal of responsiveness and this is intended to encompass the health systems responsiveness to the non-medical expectations of the population.

**Fig. 1.** The external context

![The External Context](image_url)

**Toolkit framework**

The toolkit, which uses the analytical framework described above, has two elements: The ‘horizontal element’ assesses the macro context and the health system within which the infectious disease programme is embedded from a variety of perspectives: political, legal, social, demographic, economic, technological, financing, organisational arrangements, resource allocation, and provision. The ‘vertical element’ assesses the infectious disease for instance Tuberculosis-specific components of the programme such as epidemiology, service delivery, diagnostics laboratory networks, and treatment.
The toolkit is modular in structure allowing flexibility according to the area in question, context and resource availability with each module addressing a specific area. The instrument has a predefined set of key generic questions or headings in each module to enable the user to capture necessary information rapidly. A multi-methods approach by a multidisciplinary team enables cross-referencing and triangulation of data. Where possible, toolkit utilises routine datasets.

The toolkit that has been designed is based loosely on a ‘T’ model Fig. 2. The horizontal elements comprise the health system analysis and the vertical elements the infectious disease programme components. In cases where parallel vertical systems exist, for example ministry of health Tuberculosis control programme or a prison-based ministry of justice Tuberculosis control system, these are explored both individually and in terms of their linkages for each other.
As with any figurative representation, the model gives a simplistic view of a highly complex system with a multitude of linkages and interdependencies that are difficult to reflect diagrammatically.

The system and programme levels are both into split into five modules covering relevant areas of assessment:

1. External context
2. Stewardship and organisational arrangements
3. Financing, Resource Generation and Allocation
4. Healthcare provision
5. Information systems

Within each of these modules, multiple methodologies, information sources and routine data sets are used, allowing triangulation of gathered information. As such, the toolkit calls for the use of qualitative and quantitative methods. This is in contrast to the more traditional method.
of using quantitative indicators for determining service outputs and health status. By using multiple data sources and methods of analysis the toolkit attempts to yield more rigorous and robust information.

**Phases of assessment and evaluation**

The toolkit has three stages of analysis.

**PHASE I: Screening**

A multidisciplinary team comprising external consultants, local professionals, and programme managers collect qualitative and quantitative data through desk analysis of available datasets and documents and the process of interviewing the selected key informants.

This screening stage can be further divided into two phases. The Systemic Rapid Assessment Tool (SYSRA) comprises a list of questions/information that is gathered at this stage using the framework outlined in the previous section. There are two primary sources of information, one is published data and documentation and the other is a range of interviews with identified key informants. As a first step secondary data and documentation is reviewed in order to determine what information is available in this form and what the remaining gaps are. This will guide the application of the toolkit. Key informants are then identified who can provide a balanced view of the health system and disease programme and have expertise in a broad range of system and programme components.

At the next stage, the key informant interviews are carried out using the predefined questions for each module outlined in the SYSRA toolkit. The questions to be asked are wide ranging but need to be applicable to different settings and additional questions are only added if justified to the particular programme context.

This stage enables a multidisciplinary assessment team comprising external consultants, local professionals, and programme managers to elicit key qualitative and quantitative information, through an iterative process of information gathering and discussion that triangulates the findings. The aim of this stage is to provide comprehensive information on the context rapidly, current processes and mechanisms for the programme in question. Many questions identified at this stage are often posed during programme feasibility studies but have rarely been structured in a way presented in the toolkit. The questions seek information on past patterns, trends, responses to changes and other historical information to help the assessment team begin a process of scenario building and modelling possible future system and programme responses.
The questions included at this stage are wide ranging and through validation and refinement have been, expanded to a core set of questions that yield valid and reliable information. These questions have been shown to be applicable in a variety of settings including the Russian Federation and Moldova, with supplementary questions used context-sensitively as necessary.

The information gathered by team members should be shared and triangulated to prevent interviewer bias and then analysed to identify further areas for investigation at phase II. Part of this process of analysis will encompass using snowballing sampling techniques to identify further key informants for interview at phase II. This technique is discussed in greater detail under the section on sampling in the following section “How to use the SYSRA Toolkit”.

The data collated may reveal areas of system and programme strengths or weakness that can be immediately built upon or addressed and the team will develop intermediate responses and interventions to address this as part of their initial report.

**Phase II: Detailed application**

The aim of the second stage is to elucidate information obtained at phase one and provide more detail on the health system and vertical programme based on gaps identified by the screening questions in phase one. At this stage the team can include a wider range of key informants in order to capture a more representative group. The tools and questions recommended at phase II are the same as those that can be used in at phase I. The tools and questions recommended at stage two are those that can be used in rapid assessment and appraisal and the phase can be carried out in a short time frame. Key informants and sentinel sites are used extensively at this stage. Qualitative data predominates as it is relatively easy to obtain but routine quantitative data, where it exists, is also collated, especially in the areas of financing and epidemiology: much of it from routinely collected data at national and local level. At this stage there could be some areas for which the qualitative data is insufficient or biased. These problems can partly be resolved by ensuring that key informants are chosen from as wide a circle as possible and that appropriate sampling techniques are used when gathering information at sentinel sites. Sampling methodologies such as capture-recapture techniques have been used successfully, particularly where the social groups targeted are vulnerable and ‘hard to reach’, as is the case with many tuberculosis sufferers.

The second phase of the SYSRA is again modular in nature covering the horizontal element (system level) and the vertical element (programme level).
Fig. 3. Phases and application of the toolkit

As in phase one the project team meets daily to analyse and triangulate the data collected and identify areas for further in depth longitudinal analysis at stage three. Triangulation should focus upon intra modular analysis, that is, cross-referencing information regarding each component or module within the horizontal and vertical elements such that a nuanced understanding of each component emerges.

Phase III: Synthesis, response development and options generation

The aim of phase three is to provide detailed information on areas identified as critical to the success of the programme and not easily collated during rapid assessment stages one and two. This new information is collected over a longer time frame and may well coincide with programme implementation and could be a programme output as well as being used to inform programme implementation. Such analyses will need to be carried out by the external team in concert with local collaborators and the balance will depend on the outcome of the rapid appraisal stages as well as the skills and knowledge of the experts carrying out the detailed assessment. A set of suggested tools are identified in the model for use at this level that require more resources and expertise than that needed when applying the SYSRA Toolkit.
The synthesis of analyses of earlier phases should draw together a narrative on the themes across modules or components of the horizontal and vertical elements of the health system such that the complex interrelationships between the different elements have been described systematically.

The team will then use this analysis to inform the proposed response development which will consist of a range of negotiated options. It is essential that this analysis and options generation be carried out in collaboration with local policy-makers to ensure that the options generated are relevant, appropriate and practical. Part of this process of options generation may include proposals for further in-depth and longitudinal analysis of specific system or programme components.

**The purpose of the SYSRA toolkit**

The purpose of the toolkit is to help expand substantially the understanding of the complex and dynamic interactions within the health system, within the vertical programmes that support TB control, and between these.

The Toolkit should facilitate the identification of sites where the implementation of TB control programmes is envisaged, assist in determining whether investment is likely to result in success, and help identify specific areas (within horizontal and vertical health system elements) that may require focused support to change if programmes are to be sustainable. This knowledge base in turn will contribute to a better understanding of the enablers and barriers to change and effective implementation of DOTS programmes and, more broadly, buttress DOTS expansion.

Because of the systematic way in which data are collected and analysed, analyses should ideally be held in a database or a library where comparisons can be made and lessons drawn. Analyses garnered from the application of the Toolkit will help in the design of context sensitive interventions for effective implementation of sustainable WHO recommended tuberculosis control strategies.
Features of SYSRA

The existing tools used to assess the baseline situation, feasibility, monitoring and evaluation of vertical infectious disease programmes usually focus on the detailed assessments of programme *per se*, offering a profound epidemiological understanding, but with no, or only a cursory, assessment of the health system within which the vertical programme is embedded. A further shortcoming of existing tools and methodologies in health system and programme assessment is that they are time-consuming and resource intensive. An exception includes the Rapid Assessment and Response (RAR) toolkits, which have been used in the areas of substance abuse and HIV / AIDS. For instance, the Rapid Assessment and Response Guide on Substance Use and Sexual Risk Behaviour (SEX-RAR)\(^9\), produced jointly by the World Health Organisation and UNAIDS, uses rapid appraisal techniques and links the assessment process directly to response and interventions.

RAR toolkits have particular features that make them useful including:

- **Speed of application**: This is of the essence in a fast changing public health environment. Increases in incidence of tuberculosis and MDR-TB in the Russian Federation and increases in tuberculosis consequent upon the epidemic of HIV/AIDS in Sub-Saharan Africa are two examples of this.

- **Cost-effective methods of assessment**: These are preferable in resource-poor settings, providing more economically acquired data and avoiding labour intensive tools such as large scale Demographic Health Surveys.

- **Practical relevance**: The methodologies used within the toolkit are selected on the basis of their contextual sensitivity to the particular setting and the interventions that follow rather than their scientific rigour alone.

- **Use of multiple methodologies for data collection**: It is essential that the information obtained is triangulated and verified to ensure validity and that sampling techniques are explicitly identified. Such use of multiple methodologies and information sources to triangulate data enables a more comprehensive and holistic picture to emerge. The use of these multiple methods, especially ethnographic approaches, enables the team to investigate more politically or culturally sensitive information from a cross-section of societal groups. This is especially valuable where vulnerable groups such as prison inmates and the homeless are targeted populations, for example in tuberculosis in the Russian Federation.

- **Working collaboratively with local teams**: A feature of the RAR is that the analysis is carried out collaboratively with local professionals and policy-makers. This approach helps to ensure that the responses identified are relevant and sen-
sitive to local needs.

- **Use of routinely collected data sets:** Where possible the RAR toolkit aims to use routinely collected data sets and only supplements these with additional information if specific gaps are identified.

- **Inductive reasoning:** One of the principles of RAR is that the assessment team avoids making assumptions about the outcome of the assessment and allows the conclusions to emerge inductively.

Whilst such rapid assessment toolkits can provide accurate information relatively cost-effectively, there are drawbacks. The process is often externally driven and may not enhance ownership of programmes such as tuberculosis control and other infectious disease programmes. The use of key informants alone in a rapid assessment can provide a biased and unrepresentative picture, especially when vulnerable and ‘hard to reach’ groups are a particular focus of a programme as in the case of tuberculosis in the Russian Federation, where the homeless and ex-prisoners are important groups.

In rapid assessment, much depends on the quality of the planning of the rapid assessment process and the skills of the assessment team especially in the ability to conduct interviews.

The key shortcoming of the RAR toolkits is their vertical focus on a particular disease, condition or therapeutic area and the failure to capture key contextual and health systems issues at institutional and macro levels. A thorough understanding of the contextual issues is necessary when introducing intervention programmes to address particularly HIV/AIDS, tuberculosis and other infectious diseases epidemics.

These epidemics are a result of the interaction of a number of different factors creating a dynamic and complex environment within which the epidemic exists and develops. Narrow technical interventions therefore are unlikely to succeed. Multifaceted and multi-methods intervention strategies need to be pursued to address the epidemics influenced by complex socio-economic and political factors. However, multifaceted interventions require a thorough understanding of the broad context and the health system within which the interventions are placed. Currently, no unified or integrated instruments exist to enable decision makers to gather appropriate and timely information for such contextual analysis.

This integrated toolkit can be used to simultaneously assess the broad context, the health system, and programme specific areas. The Systemic Rapid Assessment Toolkit (SYSRA) combines the advantages of rapid assessment approaches and provides an opportunity for more in-depth longitudinal assessment of specific areas such as political commitment, societal attitudes, beliefs and values as well as organisational responses to change. The richness
of qualitative data required for a comprehensive analysis in such areas is difficult to obtain during a single rapid assessment. An in-depth longitudinal assessment provides a better understanding of these contextual issues, building on the results of the rapid analysis.

The toolkit has a predefined structure including modules and a key set of questions/datasets to undertake comparative or longitudinal assessments or benchmark the findings (comparatively or longitudinally). This feature of the toolkit makes it an ideal instrument not just for initial assessment but also for monitoring and evaluation. The modular structure and the flexibility of questions means that questions can be added to ensure that the instrument captures answers to not just ‘what?’ questions but also those of ‘why?’ and ‘how?’
PART 2 HOW TO USE THE SYSRA TOOLKIT

This section is to enable easy application of the SYSRA toolkit. The instructions are written in the form of a manual intended for use by international and local health professionals, in-country policy makers, health system and TB system managers and other personnel involved in planning, implementing and evaluating TB projects.

The manual is designed to:

- Provide a framework for carrying out an initial rapid assessment of the context
- Provide a framework within which further in-depth longitudinal analysis can be carried out in defined areas.
- Ensure that the toolkit can be applied with minimal additional resources and in a collaborative manner with local professionals to ensure sustainability and appropriate capacity building
- Elaborate on the tools and methodologies suggested in the toolkit and outline their strengths and limitations
- Identify the ways in which strategies for response and intervention can be designed based on the rapid assessment.

Target audience for the Toolkit:

- **Consulting teams** working on particular health problem or on projects in the international health area
- **International organisations** concerned with the development of strategies to address particular health areas
- **Projects** (project clients, programme managers, technical area leaders and advisors), both international and local aimed on an effective implementation of DOTS strategies within their political and organisational structures of health care delivery
- **Academic** health service / health systems research teams
Preparation for rapid assessment

Project initiation

Key steps in the project initiation are to:

(i) Establish project leadership
(ii) Form a core team
(iii) Coordinate work / training session within the team
(iv) Identify a local team(s) / coordinator
(v) If necessary, ensure training local teams in data collection and interview techniques is undertaken

Once the composition of the assessment team has been agreed, the team should meet to determine the following:

1. What information can be gathered prior to the initiation of the rapid assessment process and how will this be obtained?
2. What roles will each member of the team take during the screening stage of the rapid assessment process?
3. How often the team will need to meet during the data collection process in the field?
4. At what stages within the process will the team members meet?
5. Who will be on the initial list of key informants for screening stage interviews?
6. What the maximum number of interviewees will be given the time and resource constraints?

Team size and composition

If the project is to be conducted by a relatively inexperienced team then to compensate, a greater emphasis on each team-member’s attributes should be considered:

Team members should exhibit the following one or more of the following attributes to ensure effective functioning of the team.

1. Leadership – in the sense of maintaining the focus of the project and being goal-driven.
2. Creativity – the ability to create a strategy for formulation of the toolkit.
3. ‘Completer-finisher’ 20
The ideal team size is four. Any more and the team may become unwieldy and uncoordinated. Any less and the workload per individual will significantly increase. All members of the team should exhibit good communication skills.

If an experienced group of people can be assembled then an ideal team would comprise:

i. Health systems / policy / economic analyst
ii. Public health specialist with experience of qualitative research methods
iii. Clinical specialist
iv. Information system analyst with the knowledge of health services

Where possible, a local epidemiologist/public health specialist and health policy analyst should be included on the team as this will enable the quick and efficient gathering of data by those who understand the context of this data and can locate it quickly.

However, if only two team members are available then the tasks to be undertaken by the Health systems / policy / economic analyst can be combined together with Information systems. The specialist in public health can undertake the tasks for the clinical specialist.

One member of the team should be the team leader with past experience of similar work, experience of leading projects/coordinating programmes, and one who can keep the project aims in focus. The technical specialists should have experience of similar work and expert knowledge in relevant fields. They should be able to provide creative input into the assessment development. If international members of the assessment team do not speak the local language, then an experienced interpreter is necessary.

The advantage of having a translator in the team from the start is that they will fully understand the nature of the assessment, what the questions are aiming for, and how these will best be translated (rather than attempting translation for the first time at the point of interview).

If this team is looking to complete phase III of the toolkit then one of the experts should be a sociologist or public health specialist with experience in conducting qualitative studies.

**Familiarisation**

A well-planned preparatory stage, before the overseas assessment is undertaken, is crucial. The limited time availability once in the field mean that as much preliminary work as possible should be done before the field visit. The team should be prepared and have a clear idea of what needs to be achieved and what the application of the toolkit demands.
The preparation stage covers all the pre-field work, from the first step of familiarisation with
the toolkit to the selection of appropriate key informants for the screening stage interviews.

Data collection and other work prior to the visit

Team members should undertake an initial review of the country / health system and pro-
gramme context based on the published descriptive qualitative, quantitative, and analytical
data and the experience of team members. Initial analysis will help identify the gaps, biases
and time lags in the data collected. This will aid planning of the areas of assessment which
should receive particular focus and identification of key informants for interviews.

Prior to the visit tasks should be allocated to the team members, key informants and organi-
sations to be interviewed should be identified, a preliminary stakeholder analysis undertaken,
meetings / interviews should be fixed and the schedules and formats for the output reports
should be completed. Preparatory phase should also identify types of local resources to be
used, the timing and sequencing of activities, and allocation of technical areas to team mem-
bers with terms of reference prepared for each.

Application of the toolkit in the field

The assessment team works in pairs accompanied by a local counterpart or translator for
each interview in order to ensure a comprehensive perspective on the interview as well as
ensure that the interviews can be carried out in the local language where desirable.

Sampling

The interview subjects (key informants) in the screening stage are selected through a pur-
purposeful sampling technique. This is most appropriate as respondents are selected due to the
value of their knowledge to the research process. This approach recognises that qualitative
research is often time consuming and more expensive than quantitative and thus more pur-
purposeful sampling is necessary\textsuperscript{21}. The selection can be done using a list which is drawn up and
which outlines the experience, level of expertise, position and role that potential interviewees
hold. This requires a contact in the host country to obtain such information on potential in-
terviewees (it needs to be recognised that this can potentially result in a biased selection
procedure and recognition of this should inform identification of further interviewees from
other sources). The inductive nature of the toolkit should enable identification of further inter-
view candidates whilst in the field.

Ideally most interviews should be arranged before the field visit, in order that the data acquisi-
tion can be done over a brief and efficient work-period. In reality the research team must be
prepared to allow flexibility in their schedule as timing of interviews can be subject to very late change.

A mix of respondents from different levels and specialties are required for a robust qualitative response. Respondents should have a wide but not necessarily deep sphere of knowledge to give a picture of how different domains fit together, whilst others with more specialist knowledge are required in order that certain areas can be probed further to procure more in depth information over a narrower spectrum.

Snowballing technique is used to supplement information gained from the initial group of interviewees by asking the interviewee if there are other person(s) whom s/he thinks should be interviewed. These names will be cross-referenced with the original list and further interviews set up if necessary.

**Key informant interviews**

In the first stage semi-structured in depth interviews are most appropriate, allowing necessary information to be gained while allowing scope for interviewer flexibility. Each respondent is interviewed within one or more modules of the toolkit, depending on their area of knowledge. Each module of the toolkit is used for interviewing a number of respondents until data saturation point is reached and no new knowledge is gained.

It is essential that prior to all interviews the **explicit consent** of the interviewee be obtained on the understanding that all information provided to the interviewer is **confidential and non-attributable**. If a translator is being used, this must be made clear to him/her also. Consent can be obtained verbally or in writing depending on what is the most culturally appropriate approach in a particular context. Interviews with key informants are carried out drawing upon the questions outlined in the toolkit. The interviews can be recorded in writing or on audiotape with the permission of the interviewee.

The questions outlined in the toolkit have been designed to efficiently elicit a substantial amount of information to establish baseline information on both the health system and the TB programme. The questions are designed not to lead the interviewee to answer in certain ways although the agenda of the interviewee and the pattern of interaction set up with the interviewer should always be accounted for when analyzing responses to questions. Some of the questions are designed to elicit qualitative information, others to elicit quantitative information. The socio-demographic and epidemiological information obtained at this stage can then be cross-checked against the quantitative information obtained before the rapid assessment process was initiated.
Where possible each interview should be conducted by two members of the research team and when recorded, the respondents' consent should be recorded. The interview setting can be in the respondents' office or a neutral environment. Following this, the interview should be transcribed.

After a number of these interviews, if there is sufficient time, a post-interview informal discussion should take place to allow the subject to comment on the process and the questions. This will further aid the development of the toolkit questions.

The nature of the data required from the second phase of the interviews means that a more open ended unstructured interview style is required so that “more complex issues can be probed, answers can be clarified and more in depth information can be obtained”\(^1\).

As with the screening stage interviews, the interviews should be recorded with respondents' consent and transcribed later.

More information on sampling and semi-structured interview methodologies is provided in Annex 1.

Rigour is maintained at every stage of data collection, analysis and interpretation to overcome methodological challenges. (Box 1) The assumptions and methods used in the data analysis are clearly described.
Box 1: Methodological challenges

- **Reliability and validity** – reliability indicates whether measurements are consistent and replicable over time and validity concerns whether what is actually being measured is what was intended to be measured. The general principle for rapid assessment and response testing, as regards data collection, is adequacy rather than scientific perfection. The reliability and validity are achieved through crosschecking and triangulation of data.

- **Bias** – is a systematic error in an estimation process. It can result from sampling procedures (how were the informants selected), interviewer bias (usually from a negative attitude towards respondents) and informant bias (where they give the information that they think you want to hear).

- **Reflexivity** – means sensitivity to the ways in which the researcher has shaped the collected data that include prior assumptions and experience and this can affect the inductive process.

- **Generalisability** – rapid assessment and response toolkits are mostly used to develop interventions at specific sites and use context-specific data to try and avoid generalisations being made for the whole country but certain estimates and respondent data may result in generalisations being made.

- **Fair dealing** – the respondents should incorporate a wide range of different perspectives to prevent only one viewpoint from being expressed.

Analysis: Stage 1 - The Framework approach

To analyse the transcribed data from the interviews the ‘framework approach’, as described by Pope and Mays. (Table 1)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarisation</td>
<td>Immersion in the raw data: Listening to tapes, reading transcripts, in order to list key ideas and recurrent themes</td>
</tr>
<tr>
<td>Identifying a thematic framework</td>
<td>Produce a detailed index of the data which labels the data into manageable chunks for subsequent retrieval and exploration</td>
</tr>
<tr>
<td>Indexing</td>
<td>Applying the thematic framework – systematic indexing of the text</td>
</tr>
<tr>
<td>Charting</td>
<td>Assigning data to the appropriate part of the thematic framework</td>
</tr>
<tr>
<td>Mapping and interpretation</td>
<td>Using the charts to define concepts, map the range and nature of phenomena and find associations between themes with a view to providing explanations for the findings</td>
</tr>
</tbody>
</table>
Due to the nature of the toolkit, which contains predefined questions, a thematic framework approach is the most appropriate method of meeting the objectives the evaluation. This framework approach is followed by one experienced member of the evaluation team who codes and extracts themes from all of the transcribed interviews.

**This first stage of qualitative analysis** aims to examine all of the transcripts from the interviews. It is difficult to do the analysis from the tapes alone as the detail may be missed. Once the details of the interview have been recorded you then proceed to do a

(i) Content analysis that allows one to identify and categorise the common themes. For the rapid assessment and response questionnaire the interview content is generally following a set theme pattern from the different modules and this allows for easier mapping of the concepts and themes.

(ii) Discourse analysis to probe the meaning and significance of any patterns of discourse.

It is important to map the data with an open mind, and you may need to acknowledge any biases that you as the researcher may have. Issues and ideas should emerge that are important and relevant to the respondents.

**Analysis: Stage 2 – Meta-ethnographic synthesis**

At this stage, it is important that both convergent and divergent data are explored and analysed using a meta-ethnographic process. The meta-ethnographic approach recognises the importance of *meaning in context*. This approach to analysis does not use the raw data from interviews but rather the data that has already been thematically analysed using the framework approach. Thus it comprises the second stage of data analysis. The central process of meta-ethnography is *reciprocal translation* whereby a common language of interpretation is developed. This has been termed *metaphoric reduction*. The process of synthesis involves the following steps:

1. Determining how the data is related: compiling a list of the metaphors or explanatory schema, phrases, ideas and key concepts (and their relations) used in each of the data sets (in this case responses to question from different interviews) and juxtaposing them;

2. Translating the data sets into one another: comparing the metaphors/ explanatory schema, looking at similarities and interactions between them in the different interviews;
3. Synthesising the translations: comparing the various translations produced, to identify types of translation, or metaphors/explanatory schema that transcend individual accounts, and in turn can be used to produce new interpretation or conceptual development;

4. Expressing the synthesis: communicating the synthesis in a form that is relevant and appropriate to the audience.\textsuperscript{27}

This ensures that the team will not ignore divergent data that will be essential in identifying some of the potential barriers to programme implementation and is key in the development of programme theories about what makes a programme work in one context and not in another. In application of the toolkit, different key informants have frequently answered the same questions in contradictory ways. It is essential that such contradictions be explored and likely explanations proposed.

**Triangulation**

*Qualitative work* can be used to supplement quantitative work as part of a validation process named triangulation of data\textsuperscript{28}. Two or more methods of data collection can be used (e.g. interviews and observation) and one compares the results for convergence or one may use a multi-method approach to examine the topic on several different levels by interviewing different interest groups. For the modular style interview questions in the toolkit that have been used here, the multi-method approach was used for validation in that respondents from different levels were interviewed, from a national, provincial and community level.

**Analysis as a team function**

*Group feedback sessions* should be held at the end of each day and an analysis of responses to the toolkit questions undertaken to identify gaps in the information gathered. This exercise forms the basis for identifying gaps in knowledge, conflicting positions and data, and assists in framing further questions and interviews the following day.

At the end of the screening phase the team should meet to analyse and compare the data collected against the toolkit framework and identify potential gaps in information and areas for further investigation in phase II of analysis with the roles of the various team members assigned for stage II of assessment process.

It should be recognised that, as with all aspects of policy-making and development, this assessment and feedback process will be contentious and ‘messy’. The resulting analysis and synthesis of information is likely to be arrived at by a process of negotiation and consensus building. This is a critical step for triangulation. It is not neat or readily simplified but this in-
creases the richness of the information provided and, it is hoped, grounds policy recommendations in reality.

**Suggested timetable and resources for application in the field**

**Phase I: Screening (collect information, hypothesis generation)**

<table>
<thead>
<tr>
<th>Type of assessment work</th>
<th>Resources type and volume</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module 1 – The health systems context</strong></td>
<td></td>
</tr>
<tr>
<td>H: Demographics</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>H: Economic changes</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>H: Political context</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>H: Legal and regulatory framework</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>H: Epidemiology</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>H: Socio-cultural context</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>H: Technological context</td>
<td>Clinical specialist/ health economist/policy/system analyst</td>
</tr>
<tr>
<td>V: Demographics</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Economic burden</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>V: Political commitment</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>V: Legal and regulatory framework</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>V: Epidemiology</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Socio-cultural context</td>
<td>Clinical/public health specialist</td>
</tr>
</tbody>
</table>

| **Module 2 Stewardship and Organisational Arrangements** | |
| H: Organisational structure and relationships | Health economist/policy/system analyst/public health specialist |
| H: Stewardship and governance arrangements | Public health specialist |
| V: Organisational structure and relationships | Health economist/policy/system analyst/public health specialist |
| V: Logistics and distribution of drugs and other supplies for TB programme | Public Health specialist |

<p>| <strong>Module 3 Financing, resource generation and allocation</strong> | |
| H: Financing arrangements | Health economist/policy/system analyst |
| H: Resource allocation | Health economist/policy/system analyst |
| H: Provider payment systems | Health economist/policy/system analyst |
| H: Human resources | Public Health/clinical specialist |
| H: Human resource management | Health economist/policy/system analyst/public health/clinical specialist |
| V: Financing arrangements | Health economist/policy/system analyst |
| V: Resource allocation | Health economist/policy/system analyst |</p>
<table>
<thead>
<tr>
<th>Type of assessment work</th>
<th>Resources type and volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>V: Provider payment systems</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>V: Human resources</td>
<td>Health economist/policy/system analyst/public health/clinical specialist</td>
</tr>
<tr>
<td><strong>Module 4 Health care provision</strong></td>
<td></td>
</tr>
<tr>
<td>H: Patterns of provision</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>H: Patterns of utilisation</td>
<td>Public Health specialist</td>
</tr>
<tr>
<td>H: Performance assessment</td>
<td>Health economist/policy/system analyst</td>
</tr>
<tr>
<td>V: Structure and capacities of TB programme</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Service process</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Diagnostic services</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Prevention</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Laboratory network</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Recording and reporting</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Service delivery: Treatment</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Service delivery: Rehabilitation</td>
<td>Clinical/public health specialist</td>
</tr>
<tr>
<td>V: Perceptions of TB service delivery</td>
<td>Health economist/policy/system analyst/public health/clinical specialist</td>
</tr>
<tr>
<td><strong>Module 5 Information systems</strong></td>
<td></td>
</tr>
<tr>
<td>H: Health information policy</td>
<td>Health economist/policy/system analyst/Health Information Systems Analyst</td>
</tr>
<tr>
<td>H: IS infrastructure and IT</td>
<td>Health economist/policy/system analyst/Health Information Systems Analyst</td>
</tr>
<tr>
<td>H: Use of information for decision making</td>
<td>Health economist/policy/system analyst/public health specialist</td>
</tr>
<tr>
<td>H: Routine data sets</td>
<td>Health Information Systems Analyst/ public health specialist</td>
</tr>
<tr>
<td>H: Quality assurance</td>
<td>Health Information Systems Analyst/ public health specialist</td>
</tr>
<tr>
<td>V: Programme IS infrastructure</td>
<td>Health Information Systems Analyst/ public health specialist</td>
</tr>
<tr>
<td>V: Data / Information flows</td>
<td>Health Information Systems Analyst/ public health specialist</td>
</tr>
<tr>
<td>V: Use of information for decision support within programme area</td>
<td>Public health specialist</td>
</tr>
<tr>
<td>V: Routine data sets and integration with the system HIS</td>
<td>Health Information Systems Analyst/ public health specialist</td>
</tr>
<tr>
<td>V: Quality assurance</td>
<td>Health Information Systems Analyst/ public health specialist</td>
</tr>
</tbody>
</table>

H- horizontal, health system; V-vertical, programme specific
Phase II: Detailed application (identify and address gaps, ongoing analyses)

At this stage the team should continue to work in pairs where interviewing is the methodology used. As was identified earlier, a member of the team should include a specialist with expertise in qualitative methods. Ideally this individual should also be skilled in rapid assessment techniques generally as well as ethnographic and participatory methods.

In total, the screening stage of assessment should be completed within a week, with phase II analyses taking a further week. Obviously there are drawbacks in carrying out an assessment in such a short time, notably the possibility that information will be missed or omitted because it is too time-consuming to obtain. However, this desire for detail must be traded off against the relative cost-effectiveness of the rapid approach.

The assessment team should meet at the end of this second phase and analyse the data obtained during the phase and identify key areas for in-depth analysis. The same framework approach to analysis as that used in phase I should be used in phase II. The areas identified for further analysis are likely to be those that have been identified as potential major constraints to the implementation of the programme and further analysis at phase III will lead to the process of strategy development in overcoming the constraints. Positive driving forces for implementation should also be identified so that these can be highlighted in the report and used as the basis for strengthening targeted areas.

Clearly the number of team members for this phase of assessment depends upon the experience and skills of those participating and the transparency of health systems. Ideally a core group of team members with a number of skills such as epidemiological, health system, and qualitative research should form a core team that participates in all three stages.

Phase III: Synthesis (detailed analyses, synthesise information, theory development), response development and options generation

Synthesis

The purpose of this stage is to synthesise analyses such that a coherent systematically framed narrative evolves that captures the structures, processes and forces that shape (and may shape a future) TB programme within a complex setting. Analysis at this stage should draw upon thematic issues that interlink across modular components of vertical and horizontal health system elements. It is this systematically framed narrative that others should be able to draw from, that should enable comparisons to be made with other programmes in different settings, and assist in the development of programme theory.
The timescale of phase III analysis will vary depending on the terms of reference of the specific analysis but might be expect to take, with experienced team members, about 2 weeks. The time frame for longitudinal analysis will be defined by the team carrying out the research as part of the research protocol.

**Response and Intervention Development**

The response development and options generation should be outlined in the report. The responses proposed by the team will be arrived at by a process of negotiation among the team between external consultants and local policy-makers and will vary dependant on the constraints and drivers identified and the context. Some examples of common constraints and possible responses are outlined in the table below. It is important that part of this process of negotiating options for responses involves identifying possible barriers and enablers to the identified responses. These can usually be readily identified based on the analysis that has been carried out using the SYSRA and in consultation with the local policy-makers.
<table>
<thead>
<tr>
<th>System and programme constraints identified on SYSRA</th>
<th>Illustrative responses</th>
<th>Potential enablers</th>
<th>Potential barriers</th>
</tr>
</thead>
</table>
| Lack of political commitment                         | Consensus building using the following strategies  
- Use economics and cost-effectiveness arguments to persuade politicians for whom the dominant deciding factor is frequently economic  
- If poverty alleviation is a politically motivating factor, the relative impact of TB on poorer socio-economic groups could be stressed  
- Use social marketing and health promotion to enhance the public perception of TB control and its importance | Political champions of the TB programme  
- Powerful lobby groups  
- Powerful donor groups who prioritise funding and technical assistance to TB programme | Negative public opinion related to TB patients  
- Stigma and discrimination at all levels of society |
| Inadequate financing                                  | Use economics and cost-effectiveness arguments to persuade politicians for whom the dominant deciding factor is frequently economic  
- Propose efficiency savings within the existing system that could be reinvested in the proposed cost-effective TB control system  
- Propose new methods of financing that improve efficiency, equity and reflects the relative burden of TB | Powerful donor groups who prioritise funding and technical assistance to TB programme | Inadequate information systems related to financing flows with weak capacity at all levels to use this information for rapid response decision-making |
<p>| Inadequate organisational capacity                   | Propose methods of improving commu- | Good informal networks well estab- | Lack of management capacity partic- |</p>
<table>
<thead>
<tr>
<th>System and programme constraints identified on SYSRA</th>
<th>Illustrative responses</th>
<th>Potential enablers</th>
<th>Potential barriers</th>
</tr>
</thead>
</table>
| System and management | Communication between organizations involved in various aspects of the health system  
• Ensure transparent organisational structures are in place with clear lines of communication and accountability and leaders are given appropriate management training  
• Health education programmes could be provided to TB patients as part of their treatment regime  
• Any health system reforms, especially decentralization, are reviewed in terms of their impact on vertical programmes and interim measures taken to ensure continuity | Published between different providers at local level  
• Models of decentralisation that have been successful in addressing the priority health needs of the local population | | |
| Inadequate human resources | • Ensure management capacity for human resource planning and that human resource planning is an integral part of any programme  
• Ensure that accurate and appropriate information is available on existing human resources and future needs  
• Propose a programme of training for health workers in the TB programme  
• Proposes a system of regular supervision for health workers in the TB programme | Professional groups that are supportive of changes that they recognise will enhance the working conditions of their members | Perception of human resources as ‘too difficult’ or politically sensitive an issue to deal with  
• Inadequate education systems that can ‘feed into’ health sector human resources |
<table>
<thead>
<tr>
<th>System and programme constraints identified on SYSRA</th>
<th>Illustrative responses</th>
<th>Potential enablers</th>
<th>Potential barriers</th>
</tr>
</thead>
</table>
| Unreliable drug supply                           | - Ensure access to regular high quality drug supplies through streamlining the supply chain  
  - Apply to the Global Drug Facility             | - A medical supplies agency that is ready to adopt change and manage its supply chain effectively for all supplies | - Lack of financial resources or security of these resources to prevent stockouts  
  - Poor physical infrastructure and transport leading to problems with distribution |
| High impact of HIV/AIDS                           | - Ensure that a system of monitoring the co-infection rate is in place  
  - Propose supplementary treatment measures for TB patients with HIV (e.g. ProTEST) if judged to be cost-effective or deemed appropriate under human rights | - NTCP and NACP programme managers who recognise the potential synergies between their respective programmes and opportunities for collaboration | - Culture of vertical programme management for TB particularly may result in staff who are resistant to taking on responsibilities they see as falling outside their scope of expertise |
| High impact of drug resistance                    | - Propose tighter implementation of DOTS, DOTS Plus | - Global focus on preventing drug resistance | - ‘Professionalisation’ of health services make DOT in the case of large scale DOTS programmes difficult to implement unless skill mix is accepted by health professions |
Further analysis

Among the responses that may be identified as part of the analysis at this stage is further investigation and research. Any further research at the stage is likely to be longitudinal in nature and should be carried out by local researcher where possible with support from external academic institutions that can provide specific technical expertise.

It is essential that any assessments are carried out on a collaborative basis with international experts and locally based policy makers. This collaborative approach, as well as being valuable in enabling a profound understanding of context and programmes, should also result in the development of local technical capacity upon which future and other health system strengthening processes can draw.

A set of suggested tools are summarised in Annex 2 along with comments on the strengths and limitations of each tool. The tools require more resources (both in terms of time and materials) and expertise than the SYSRA toolkit.

Presenting the Findings

The report outlining the findings of the assessment team at the screening phase and phase II will be written up and presented to the project/programme sponsor/commissioner and other relevant parties.

The report will comprise of

- Contents
- Acronyms and abbreviations
- Introduction
  - Background to the proposed TB programme in the region.
- Assessment findings
  - Systemic level
  - Programmatic level
  - Potential constraints identified
  - Potential programme drivers
- Action plan
- Conclusion
- Annexes
The report should be presented to the commissioners of the assessment within 2 weeks of the completion of the phase II analysis. The team of local policy-makers and external consultants should negotiate and agree the circulation list for this report. This report remains confidential until agreement for release has been obtained from the report commissioners. If possible, the report should be made available on the Internet as a public document to inform policy and practice internationally. A repository of reports that use this toolkit as a framework should be a resource that others can draw from. Ideally this should be administered by an international institution such as WHO, freely accessible electronically, and searchable. Such an archive would be a valuable resource for programme implementers, evaluators, bilateral and multilateral donors, in-country stakeholders, and academic researchers. The wider use of this toolkit by others in varied settings and the collation and analysis of findings should facilitate the development of programme theories. It should be possible to explore such theories by themes, modular components, and health service elements.

The executive summary can be used as a shorter summary report, which can be circulated to key informants again with the permission of the reports commissioners. The following structure for the executive summary is suggested.

- Introduction and background to the analysis
- Identified health system and TB programme strengths
- Identified health system and TB programme constraints
- Recommendations
  - Further investigation
  - Intermediate responses

If others are to learn from programme evaluations then reports must be systematically conducted and framed in a similar manner such that comparisons can be readily made. Sensitive issues may be raised that some stakeholders would prefer were not aired publicly. Yet these issues may be critical to programme success. This issue is difficult to resolve but trust, competency, transparency, and feedback are all critical components for success. Considerable attention needs to be paid to notions of attribution and confidentiality. A further issue is language – oral and written feedback is important, and reports that may (and ideally should) be in the public domain must be written sensitively. This takes time. In practice we have translated reports, spent
many hours going over reports with key stakeholders and agreeing forms of words in translated draft reports and back-translated.

**Use of the toolkit for monitoring and evaluation**

The toolkit can also be used for programme/project monitoring and evaluation.

Monitoring is the observation of programme performance to ascertain whether activities are accomplished as planned. It aims to identify problems quickly so that they can be solved without delay. Conventional monitoring tools, therefore, traditionally identify if there are problems but may not provide answers on how these problems should be best rectified. They also tend to focus on the inputs, processes, outputs and outcomes of the vertical programme only.

Rapid re-evaluation using the toolkit with a focus upon sub-components that impact upon the problem identified can provide an understanding of why a problem arose, a greater understanding of the scope of the problem, and to generate options to effectively remedy the problem.

Periodic repeat evaluation, for example bi-annually, should enable a more profound understanding of the scope of health reform programmes, their potential for sustainability, and challenges that may be being faced. Such a re-evaluation should enable a refinement of programme activities and broaden the knowledge base from which others might learn.
Part 3 THE MODULES OF THE TOOLKIT

Module 1: The Health System Context - Systems Level

Module 1 System Level

Demographic trends

Using published data, identify trends in key demographic indicators.
(Disaggregate by region, and gender)
- Birth rate
- Death rate
- Life expectancy
- Population growth rate

Economic trends

Using published data, identify key economic trends
- GDP growth,
- GDP per capita,
- Inflation,
- Employment and unemployment rates,
- Poverty levels
- Food security
- Levels of sanitation and access to safe drinking water
- Trends in key economic indicators etc.

Political context

How has the political system evolved in your country or region recently?

Briefly describe the health system reform initiatives that been implemented in the last 10-15 years?
  - What have been the key objectives of these reforms?
  - To what extent have health reforms been effective in meeting identified objectives?

What difficulties have been encountered in introducing reforms/development initiatives and sustaining change in the health system?
  - If not, what were the key barriers?
If yes what has helped facilitate change?

How are health policies developed in the health system?
How inclusive is the policy development process?
Who or which institutions or persons have power and influence on policy-making?
which groups or individuals are disenfranchised in the policy process and why?

To what extent is available evidence taken into account when developing policies?
Is there an institution that collates and interprets evidence to inform policy?
How adequate is the capacity for policy-making?

To what extent are developed policies implemented?

What are the current key health policy initiatives?

Are health policies linked to wider multi-sectoral approaches (such as PRSP and SWAp)?

Which international development agencies are involved in the health sector?
Which areas are they involved in?
What resources do they bring to the sector and what programmes do they support?

List agencies by primary focus, programme and integration into the health system¹.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Primary Focus</th>
<th>Programme</th>
<th>Integration</th>
<th>Resources</th>
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</table>

¹ Are the programmes run by the agencies directly, local NGO partners, the private sector or governmental organisations?
Legal and regulatory environment

Do health laws ensure access to health care?

Do health laws disenfranchise certain groups?

Do provisions in health, civil or criminal laws hinder access to healthcare or programme delivery?

Do provisions under health, civil or criminal law provide for adequate confidentiality?

How well are laws, in particular health laws, adhered to?

Is any new legislation being planned that impacts on the health sector?

Epidemiological trends

Using published data identify trends in key epidemiological indicators.

- Infant mortality
- Under-5 mortality
- Maternal mortality
- HIV prevalence
- TB prevalence
- Other communicable disease prevalence
- Non-communicable diseases (disaggregate cardio-vascular disease, cancer, mental health and accidents if possible)

How is epidemiological assessment carried out, by whom, and how often?

How accurate is the data collected?

In your view, what are the top 5 population health problems?

How is the disease burden distributed amongst the population?

- By age group
- By sociodemographic status
- By geography?
Socio-cultural context

Using published data, identify trends in key socio-cultural indicators, if possible profiled according to:

- Age group
- Sex
- Geography

Human development index

Levels of adult literacy

Levels of school enrolment?

Which ethnic groups exist in the country or region?
  - What religions are practiced in the country or region?
  - Do these groups differ in the way they perceive health needs and use health services?

How does the population perceive public and private health care services?
  - How do these perceptions influence the way health services are utilised?
  - Are services perceived to be responsive to the socio-cultural needs of the population?

What is the status of doctors, nurses and other health professionals in the society?

What is the society’s perception of disease/disability in individuals?

Do alternative health systems exist (e.g. traditional healers)
  - Are these practitioners regulated in any way?

Is the community involved in planning and implementation of local health services?
  - If so, how?

Is corruption common in the health system or public sector generally?
  - If so, what forms does it take?
  - How does the population perceive this practice?
Technological context

Are new technologies used in delivery of health services?

How?

Who finances these?

Who meets the operational cost?

How are decisions made about the application of new technologies?

Are staff trained to use new technologies?
Module 1: The context - TB control programme level

Demographics

In your view or based on your knowledge of statistics which socio-demographic groups are more likely to contract TB?

Are there any socio-demographic patterns that impact on TB control (e.g. migration, employment sectors, etc.)?

Economic Burden

What is the estimated national economic burden of TB?
   How has this been estimated?
   What is the burden relative to other diseases?

What is the estimated economic burden of TB on private companies?
   How was this estimated?
   What has been the response of private companies to this burden?

What is the estimated economic burden of TB on individual households?
   How was this estimated?
   What is the burden relative to other diseases?
   At household level, are TB services seen as a priority for expenditure (time or other resources)?

Political commitment

In your view, where is TB on the political agenda overall and the health agenda in particular?

How would you rate political commitment to the TB programme?

Does the country have a National TB Strategy and/or Policy?
   What was the process of Strategy and Policy planning/design?
   Which policy makers and stakeholders are involved in leading development and implementataion of TB-related policies?

Who are the key international development agencies involved in the TB control programme?
List agencies by primary focus, programme and integration into the health system².

<table>
<thead>
<tr>
<th>Agency</th>
<th>Primary Focus</th>
<th>Programme</th>
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</tbody>
</table>

Are there well-established and recognised advocacy/lobbying organisations for TB patients?

- How effectively have these organisations influence policies?

To date, what difficulties have been encountered in introducing and sustaining change in the TB programme?

Legal and regulatory framework

What laws and regulations cover TB control in the following areas?

- Screening
- Diagnosis
- Treatment
- Isolation
- Detention
- Vaccination

How are the laws on the above sections applied in practice?

Does the law focus on certain sections of society?

² Are the programmes run by the agencies directly, local NGO partners, the private sector or governmental organisations?
Epidemiology

Using published data, identify key epidemiological indicators related to TB over the last 10 years.

- Number of TB-related deaths per year
- Number of TB cases reported per year
  - Actively
  - Passively
- Prevalence rates
  - Age
  - Sex
  - Socio-demographics (including criminal justice and civilian sectors)
  - Geography
  - Co-infection with HIV
- Annual smear positive rate
  - New cases
  - Retreatment cases
- Annual culture positive rate

Is drug resistance measured and recorded in the TB service?

What are the patterns of primary and acquired drug resistance?

- Age;
- Sex;
- Socio-demographics (including criminal justice and civilian sectors);
- Geography;
- Co-infection with HIV.

What is the rate of isoniazid resistance in new cases per annum?

What is the rate for last year?

What is the rate of rifampicin resistance in new cases per annum?

What is the rate for last year?

What is the rate of multiple drug resistance in new cases per annum?

What is the rate for last year?

What is the rate of isoniazid resistance in treated cases per annum?

What is the rate for last year?

What is the rate of rifampicin resistance in treated cases per annum?

What is the rate for last year?
What is the rate of multiple drug resistance in treated cases per annum?

What is the rate for last year?

What methods are available routinely for DST determination for rifampicin and isoniazid?

How is cure defined (criteria)?

What are the cure rates for TB according to that definition (disaggregate for different TB programmes, age, sex, region, etc)?

Completion of treatment rates

- Age;
- Sex;
- Socio-demographics (including criminal justice and civilian sectors);
- Geography;
- Co-incidence with HIV (where data is available)

What are the main reasons for transfers out of programmes:

- Migration
- Drop-out
- Imprisonment
- Other
  - Age;
  - Sex;
  - Socio-demographics (including criminal justice and civilian sectors);
  - Geography;
  - Co-incidence with HIV.

Socio-cultural context

Relative to other health issues, does the general population perceive TB as a health priority?

---

3 e.g. cure and treatment completed
What is known of patient preferences in relation to diagnosis and treatment of TB?

Are health care and TB diagnosis / treatment perceived to be free to users?

What are the social /cultural attitudes to TB?

Is there a belief in real cure?
Do these attitudes differ for adults, children, different sexes, different socio-economic groups, and different ethnic groups?
Are there any widely held traditional beliefs about the causes and potential treatments for TB?

Do religious beliefs and practices impact on the uptake and delivery of the TB programme? If so, how?

Is TB stigmatised?
If so, how?
Has the extent of stigmatisation changed in recent years?

Are local communities and civil societies involved in programme planning and implementation for TB?
Module 2 Stewardship and Organisational Arrangements

Module 2 System level

Organisational structure and relationships

What organisations are involved in the planning, management and provision of health care (e.g. public, private, and voluntary)? Include parallel health structures such as those provided within the prison service, military, police forces, etc.

What is the structure of the health system?

Has the structure changed over the last 5-10 years?

How is this structure likely to change in the next 5 years?

How do the various organisations within the health system relate to each other (formally and informally)?

Map organisations on the “criteria power-operational power” matrix (see example below)\(^4\)

![Criteria Power-Operational Power Matrix](image)

---

Stewardship and governance arrangement

Is there a clearly articulated accountability framework within the health system?

How is this governance framework applied, monitored, and enforced?

What feedback mechanisms exist from users to providers, management and policy makers?

How are complaints about services dealt with?

During the 1980s the World Bank took up the concept of governance to describe the way power is exercised in the management of a country’s economic and social resources. At the heart of discussions about governance are terms such as responsibility, information, transparency, the rule of law. Governance does not refer to political power in the strict sense. It is not the art of administration at a given level of power, but the art of coordinating administration between different territorial levels.
Module 2 Programme level

Organisational structure and relationships

Which organisations are involved in the administration, control/monitoring and provision of TB prevention, diagnosis, treatment and rehabilitation (public; private; voluntary)?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Penitentiary</th>
<th>Voluntary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
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<tr>
<td>Primary prevention</td>
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<td>Secondary prevention</td>
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<td>Diagnosis</td>
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<td>Rehabilitation</td>
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</tbody>
</table>

What are the formal and informal linkages between these organisations?

Have any pilot projects which involve public-private-mix been initiated?

To what extent do these formal and informal linkages enable / challenge an integrated approach to TB control?

What is the evidence for this?

What are the enablers and barriers for integrated approach to TB control?

What are the formal and informal linkages between the organisations involved in TB and health system organisations in general?

What are the formal and informal linkages between the TB programme other programmes?

- HIV programme
- IMAI
- MCH
- Other programmes
Using the matrix below, map the position of the organisations involved in the TB programme (formal and informal)?

Logistics and distribution of drugs for TB control

How are the drug needs identified and the requirements met?

- How are drugs procured?
- Are they procured from local suppliers or overseas?
- What is the supply chain and how is it managed?
- What quality control / assurance systems are in place?

What first and second line drugs are used currently?

- Are these the drugs of choice? If not, why are they being used?
Module 3 Financing, Resource Generation and Allocation

Module 3 System Level

Financing arrangements

Using published data, map financing flows within the health system

Are any changes to the current financing arrangements planned?

Using published data identify financing sources and their contributions over the previous 5 years

Table 4. Mapping of financing trends

<table>
<thead>
<tr>
<th>Financing source</th>
<th>Baseline year (BY)</th>
<th>BY+1</th>
<th>BY+2</th>
<th>BY+3</th>
<th>BY+4</th>
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<tbody>
<tr>
<td>Government budget</td>
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<td>Health insurance</td>
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<td>Voluntary</td>
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<td>Donor funded</td>
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<td>Other</td>
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</tbody>
</table>
Using the table below, summarise the trends in health expenditure over the last 5 years.

**Table 5. Trends in health expenditures**

<table>
<thead>
<tr>
<th>Type of expenditure</th>
<th>Units</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual health expenditure</td>
<td>Absolute figures in the country currency</td>
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<tr>
<td></td>
<td>USD exchange rate adjusted equivalent</td>
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<tr>
<td>Total per capita annual health expenditure</td>
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<tr>
<td>Annual total health expenditure as a % of GDP</td>
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<tr>
<td>Annual public health expenditure as % of total public expenditure</td>
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<tr>
<td>Public-private ratio of health financing</td>
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</table>

What are the pooling arrangements for the health funds?

Do budgets correspond to actual expenditure?

Is financial information is difficult to obtain, what are the reasons for this?

**Resource Allocation**

How are resources allocated within the health system?

- Primary care
- Secondary care
- Tertiary care
- Geographic regions
- Programmes

Is there a formula for resource allocation, what is it and who applies it?
Is there a relationship between identified health priorities and resource allocation?

Are there any available estimates for resource allocation of private healthcare resources? If so, what are they?

Is there integration or transferability of social and health care budget, and if so at what level?

Provider payment systems

How are providers paid?

Table 6. Provider payment methods and incentives by provider type

<table>
<thead>
<tr>
<th>Provider type and level</th>
<th>Main provider payment methods</th>
<th>Incentives for providers</th>
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</thead>
<tbody>
<tr>
<td>Primary care</td>
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<td>Secondary outpatient</td>
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<tr>
<td>Secondary inpatient</td>
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<tr>
<td>Tertiary specialist</td>
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</tbody>
</table>

Are there any performance related incentive payments to providers? If so, what are these?

Human resources

Are professional managers employed within the health system?
  If not, what professionals perform this function?

Is management capacity within the health system adequate?

What are the sources of human resource data and how consistent is the data?

Using published data, summarise the number of nurses and doctors (total and per capita) and their distribution.
Table 7. Nurses - Hospitals

<table>
<thead>
<tr>
<th></th>
<th>Urban (Total)</th>
<th>Urban (Per capita)</th>
<th>Rural (Total)</th>
<th>Rural (Per capita)</th>
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<tbody>
<tr>
<td>Public</td>
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<tr>
<td>Private</td>
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<td>Voluntary</td>
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Table 8. Nurses – Primary Care

<table>
<thead>
<tr>
<th></th>
<th>Urban (Total)</th>
<th>Urban (Per capita)</th>
<th>Rural (Total)</th>
<th>Rural (Per capita)</th>
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<tbody>
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<td>Voluntary</td>
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</table>

Table 9. Doctors – Hospitals

<table>
<thead>
<tr>
<th></th>
<th>Urban (Total)</th>
<th>Urban (Per capita)</th>
<th>Rural (Total)</th>
<th>Rural (Per capita)</th>
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<tbody>
<tr>
<td>Public</td>
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<td>Voluntary</td>
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</table>

Table 10. Doctors – Primary Care

<table>
<thead>
<tr>
<th></th>
<th>Urban (Total)</th>
<th>Urban (Per capita)</th>
<th>Rural (Total)</th>
<th>Rural (Per capita)</th>
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</thead>
<tbody>
<tr>
<td>Public</td>
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<tr>
<td>Private</td>
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</tbody>
</table>
What number of nurses and doctors enter and leave the system each year?

How many laboratory staff are employed in the health system? (if possible, disaggregate into medically trained and technician staff)

What other categories of clinically trained (formally or informally) staff are employed within the health system?

Is there perceived shortage or excess of professional staff within the system?
    Against what have these levels been benchmarked?
    In which areas are the perceived shortages or excesses are most pronounced?

Are there identifiable (perceived) reasons for these shortages or excesses?
Table 11. Table: shortage / excess of staff (+/- %)

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<tr>
<th></th>
<th>Urban</th>
<th>Rural</th>
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<tbody>
<tr>
<td></td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>Primary care</td>
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<td></td>
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<tr>
<td>Nurses</td>
<td></td>
<td>Nurses</td>
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<tr>
<td>Doctors</td>
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<td>Doctors</td>
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<td>Lab staff</td>
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<td>Secondary care</td>
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<td>Nurses</td>
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<td>Lab staff</td>
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<td>Tertiary care</td>
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<td>Nurses</td>
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<td>Nurses</td>
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<tr>
<td>Doctors</td>
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<td>Doctors</td>
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<tr>
<td>Lab staff</td>
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<td>Lab staff</td>
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</table>

What is the rate of staff absenteeism and turnover among different staff groups?
What are the causes of staff absentiism?

What formal and informal incentives are available to staff?

How are professional groups registered and standards monitored?

**Human resource management**

How are human resource requirements planned for?

Is Continuing Professional Development an identified human resource planning target and how are CPD needs met?

Do staff have clear work plan and performance management frameworks?
Module 3 Programme Level

Financing arrangements

Using published data, map financing flows within the TB programme

Are any changes to the current financing arrangements planned?

Using published data identify financing sources and their contributions over the previous 5 years

Table 12. Mapping of programme financing trends

<table>
<thead>
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<th>Financing source</th>
<th>Baseline year (BY)</th>
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<tr>
<td>Health insurance</td>
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<tr>
<td>Social insurance</td>
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<td>Donor funded</td>
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<td>Other</td>
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</table>

What is the total annual public expenditure on TB control?

What is the expenditure on TB control as a proportion of the public health budget?

Is there an identified budget line for the TB Control programme within the government health budget?

Do budgets for TB programme activities correspond to actual expenditure?

How are the funds for TB control programmes pooled? Is the pooling of TB funds an integral part of general health system or pooling arrangements are separate? If separate, what are the arrangements?
How does the budget allocation for TB compare with HIV and other disease priorities?

In your view what is the capacity of the existing TB programme to absorb and use new funding based on previous experiences?

How has increased TB programme funding (such as GFATM funding) impacted on health system funding over all?

What impact, if any, has cost-sharing or mandatory insurance had on TB programme utilisation?

Is there any problem accessing financing information related to the TB programme?

**Resource Allocation**

Is there a resource allocation formula for allocating funds to TB services?

How are resources allocated within the TB control programme and what have the trends been over the previous 5 years?

**Table 13.** Resource Allocation for TB programme activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Resource Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline Year (BY)</td>
</tr>
<tr>
<td></td>
<td>BY+1</td>
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<tr>
<td>Prevention</td>
<td></td>
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<tr>
<td>Treatment</td>
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<tr>
<td>Rehabilitation</td>
<td></td>
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<tr>
<td>Policy development and programme management</td>
<td></td>
</tr>
</tbody>
</table>

How is the health budget distributed among tertiary, secondary and primary care providers for Tuberculosis?
How is the health budget distributed geographically in terms of per capita allocation for TB?

What is the balance between expenditure on salaries, equipment, consumables, maintenance and capital expenditure?

Is there an integration of TB clinical and social services?

Is there integration or transferability of TB and HIV funds?

Provider payment systems

How are providers within the TB control programme paid?

Are there outcome (performance, as opposed to output) related incentives built in the service payment system? (e.g. cure rate rather than number of patients registered or treated)

Human resources

How well informed are health workers in all sectors about TB?

What TB clinical training is available to health professionals in country?

What is the skill-mix used by the TB programme (numbers of staff required per 100,000 of the population)?

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Rural</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>General doctors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General nurses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TB specialist doctors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TB nurses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social workers</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Table 14. Human resources in TB service
<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Rural</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community workers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tb laboratory staff</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which specialist doctors treat TB? (e.g. TB doctors, respiratory physicians, infectious disease physicians, primary care physicians, other)

Are the doctors accredited as specialist in TB mainly respiratory physicians?

What is the system of professional accreditation for TB clinicians involved in treating TB?

Are there doctors accredited as specialist in TB?
  What is the number of these?
  Is the number of doctors determined normatively?

Is the number of specialist doctors, nurses and community health workers adequate to meet the requirements of the TB programme? If not, where are the gaps?

Are there nurses accredited as specialist in TB? What is the number of these?
  Is the number of nurses determined normatively?

Are sufficient numbers of health professionals for TB trained and qualify each year?

What are the annual rates of turnover among different staff groups?

What are the formal (e.g. salary, overtime, or bonus) and informal incentives (e.g. housing) available to staff?
Module 4 Health care provision

Module 4 System level

Patterns of Provision

What is the number of hospital beds per capita for general health care and for tuberculosis? (If possible provide distribution in urban and rural areas)

What is the number of hospitals?

What is the number of primary health centres, the average size of population served and average distance a patient must travel to a primary health centre?

Do the hospitals and primary health centers have adequate infrastructure (road and transport links, communication, electricity, appropriate buildings)?

Is service quality assessed? If so, how?

In your view, are services provided equitably?

- Gender
- Age
- Socio-economic group
- Ethnic group
- Geography

What are the referral procedures between public and private (non- and for-profit) providers?

Patterns of utilisation

Using published routinely collected data; identify key trends in healthcare utilisation. (disaggregated by age, sex and region if possible)

- Hospitalisation rate
- Average length of stay for hospital admissions
- Capacity utilisation in hospitals
- Average number of visits made by a person to a primary health centre or an outpatient facility per year
What are the barriers to access publicly provided health services at each level?

- Referral hospitals (tertiary)
- District hospitals (secondary)
- Primary care

**Performance Assessment**

Are performance targets set at each level of the health system?

Are targets process or outcome based?

Who determines the targets?

How are they measured?

Are they being achieved?
Module 4 Programme level

TB control system: structures and capacities

In your view, is the capacity of the TB control system sufficient to meet population needs?

Number of generalist and specialist hospitals
Occupancy rates and ALOS
Hospitalisation rate for TB cases (disaggregated by age, sex and region if possible)

What is the number of outpatient TB centres?

Are there geographical or seasonal variations in need for TB service?

In your view, are there any perceived bottlenecks in the existing process (by whom, perspective)?

What are the national and local linkages between TB and HIV/AIDS programmes?
  o Epidemiological
  o Structural
  o Operational

Service delivery: process

Can you map the process within the TB control system for diagnosis, notification, treatment, rehabilitation, prevention? See example below

<table>
<thead>
<tr>
<th>Phases of programme</th>
<th>Where: system / institution</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary prevention – BCG vaccination</td>
<td>General Health Network</td>
<td>At the age of ***</td>
</tr>
<tr>
<td>Secondary prevention in contacts</td>
<td>TB Control System</td>
<td></td>
</tr>
</tbody>
</table>
### Phases of programme

<table>
<thead>
<tr>
<th>Phases of programme</th>
<th>Where: system / institution</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification</td>
<td>Active (75%)</td>
<td>X-ray, Lab, Mantoux (children under age 16)</td>
</tr>
<tr>
<td></td>
<td>Symptomatic (25%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General health network</td>
<td></td>
</tr>
<tr>
<td>Diagnosis</td>
<td>TB Control system</td>
<td>X-ray, AFB Microscopy, Culture</td>
</tr>
<tr>
<td>Treatment</td>
<td>TB control system</td>
<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>TB Control system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sanatoria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specialised sanatoria for failed cases</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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</tbody>
</table>

What is the process of the TB control system for screening, contact tracing, treatment, and rehabilitation?

What institutions are involved at each stage in the process?

How are TB preventative interventions organised within the TB service?

- Primary prevention
- Secondary prevention

**Diagnostic services**

How is TB case finding organised?

- What proportion of cases is detected by active (Def.) case-finding?
- What proportion of cases is detected through passive (Def.) case finding?

Is there compulsory screening practice? If so, what groups are compulsorily screened? On what basis were these groups selected? How are people screened?

Which service providers are involved in diagnosis of clinical illness (e.g. doctor, nurse, school nurse, occupational nurse)?

- How is diagnosis of clinical illness made (e.g. CXR, microscopy, culture)?

Which service providers are involved in diagnosis of infection?

- How is diagnosis of infection made (e.g. skin testing)
Prevention

What primary and secondary prevention interventions are used?

Which organisations are involved in prevention intervention activities?

Table 15. Stakeholders and their rating of the quality of the different phases of provision of TB care

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Case finding</th>
<th>Screening</th>
<th>Primary prevention</th>
<th>Secondary prevention</th>
<th>Diagnosis</th>
<th>Treatment</th>
<th>Rehabilitation</th>
</tr>
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</table>

Laboratory networks

How many laboratories are involved in TB control?

AFB Microscopy
Culture
DST

What proportion of these laboratories are in general hospitals (rather than specialised TB Centres)?

AFB Microscopy
What is the spread / distribution of the laboratories?

What logistics are involved in moving test samples to the laboratories and results from the laboratories?

What systems for quality control/assurance are in place

For Smear Microscopy?
For Culture?
For DST?

What external quality assurance systems exist

For Smear Microscopy?
For Culture?
For DST?

Is there a nationally designated reference centre (s)? If more than one how many?

Does the national centre take part in international proficiency exercises at least annually for Microscopy, Culture and DST? If yes/

<table>
<thead>
<tr>
<th>System Name</th>
<th>Last Year’s Score</th>
<th>Yes or No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microscopy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DST</td>
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<td></td>
</tr>
</tbody>
</table>

What is the overall smear positive rate of pulmonary TB cases?

What is the overall culture positive rate of pulmonary TB cases?

What is the proportion of pulmonary TB cases confirmed by any laboratory procedure (microscopy, culture, molecular etc)?

For individual lab centres:

Do you have systems of internal quality assurance and control for microscopy, culture and DST?

What is the proportion of pulmonary TB cases confirmed by positive smear microscopy?
What is the proportion of pulmonary TB cases confirmed by culture?

What proportion of pulmonary smear positive sputum cases are culture positive?

What proportion of smear negative sputum cases are culture positive?

**Recording and Reporting**

What is the system of notification of new cases (active / passive)?

What is the system of recording diagnosis, treatment, and outcomes?

What is the system of reporting?

*(DOTS cohort outcomes: completed treatments, death, relapses, transfers-out, cure rates)*

**Service delivery: Treatment**

Which treatments are advocated for drug sensitive TB cases (e.g. individualised, DOTS, DOTS+)?

To what extent are these approaches adopted by the clinicians for drug sensitive TB cases?

  a. individualised  
  b. DOTS,  
  c. DOTS+

Which service providers are involved in treatment?

  *Institutions*  
  *Personnel*

What strategies are available for drug resistant cases of TB?

**Adherence to treatment**

What proportion of patients with drug sensitive pulmonary TB complete the TB treatment as planned? (i.e. 6 to 8 months regimen)
What methods are used to encourage adherence in patients?

<table>
<thead>
<tr>
<th></th>
<th>Nationally</th>
<th>Regionally</th>
<th>Locally</th>
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</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support e.g. food</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport support</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other</td>
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</tbody>
</table>

What proportion of drug sensitive TB patients become drug resistant on therapy per year?

**Service delivery: Rehabilitation**

How are patients rehabilitated for direct consequences of TB or treatment for Tb (e.g. lung deficit)?
- Where?
- What service providers are involved in rehabilitation?

How are patients rehabilitated for associated social conditions (e.g. alcohol, IDU, Other)?
- Where?
- What service providers are involved in rehabilitation?

**Perceptions of TB service delivery**

What is your perception of the quality and quantity of TB services provided?

In your view, how do professionals working within the TB programme perceive the quality and quantity of service they provide?

In your view, how do users perceive the quality and quantity of the service they receive?

How do the general population perceive the quality and quantity of the TB programme services?

Are there perceived or real barriers to accessing TB services and what are these?
Module 5 Information systems for decision support

Module 5 system level

Health Information System Policy

Is there a national or regional policy on Health Information Systems or is one planned?

What is the overall organisational structure of the national or regional HIS?

What are financial resources available to the HIS?

Information systems in use

Describe the current information systems used at each level of the health system.

Information System infrastructure

What information and communication technologies are available for the Ministry of Health HIS and what is their distribution?

What IT skills are available for health information systems?

How reliable is connectivity across the country?

Do staff have access to email/intranet/internet?

Information flows

What are the flows of information between the levels of the health system?

Use of information for decision-making

Why is information collected?

- Routine government statistics reporting
- Strategic planning
- Tactical decision making
What incentives and disincentives in place for collecting the data?

In your view, is the information collected by the HIS of sufficient quality?

Do various levels have the capacity to analyse and use the information provided?

How is the information gathered used to support decisions at various levels of the health system?

**Routine data sets**

What data sets are collected routinely?
- Why were these data sets chosen, when, and by whom?
- How reliable (accurate) is the data collected?

**Quality assurance**

What data quality assurance (QA) systems are in place, at different levels of health information system?
Module 5 Programme Level

Existing TB information system

What information system is currently in use?

Information System infrastructure

What main information and communication technologies are available within the TB control programme?

What IT skills are available for health information systems?

Is there integration of infrastructure across different TB service providers and sectors?

Data / Information flows

In the context of fragmented service delivery from multiple service providers, how effectively is information shared?

Why is the information collected?
  
  Routine government statistics reporting
  Strategic planning
  Tactical decision making
  Payment system
  Epidemic surveillance and rapid response

What are the incentives or disincentives for collecting the data, at different tiers of the information system?

Is there evidence of parallel information systems (public health; international agencies; research; etc.)
Use of information for decision-making

Is the information gathered used to inform decisions at various levels of the TB programme?

Are decision-makers adequately trained in analysing data?

Routine data sets and collection

What data sets are collected routinely in the TB system (see the framework below)?

On TB control system institutional structure
On human resources in TB control system
On patient flows (pathways)
On service provision
Cost of services and cost of care
Outcomes of treatment

Why were the data sets chosen and by whom / which organisation?

How are medical records and TB records kept?

Quality assurance

In your view, how accurate and valid is the data collected?

What data quality assurance system is in place?

Is this applied consistently?
Is it being revised and improved regularly?

How is data protected?
PART 4: ANNEXES

Annex 1. Methodological approaches

Intervies

Interviews are an effective means to collect data as they provide access to a range of information and personal experiences, they uncover meanings that can be missed in questionnaire type research methods and they may identify constraints that will impact on any interventions. Types of questions to be asked may be:

- Questions of fact to specify, confirm, or refute a fact;
- Questions of opinion which are open-ended to encourage dialogue;
- Questions of clarification to gain additional information, example, do you remember where you gained that information that HIV cannot be transmitted during unprotected oral sex;
- Questions of representativeness to gauge if responses are typical for that community;
- Hypothetical questions to explore sensitive or not experienced situations;
- Comparative questions help with significance;
- Probing questions encourage the interviewee to provide more information on a specific subject
- Prompts allow issues to be discussed that have not spontaneously arisen;

The required interview skills (WHO: Drug Abuse-RAR, 1999) include:

- Good communication and rapport. These include appearance and behaviour, the need to explain the purpose of the interview and to obtain verbal consent and to assure confidentiality;
- Non-judgemental attitude;
- Ability to observe non-verbal communication;
- Ability to ask pertinent questions when exploring emergent issues;
- Ability to guide the interviewee through the interview process;
- Ability to adapt to the situation;
Sampling for interviews

As the main benefit of these designed toolkits is for rapidity of response one needs to adopt a pragmatic and systematic approach to identify key informants at multiple levels and from multiple sectors. This is to gain information from a wide range of key people and not just from specific social and demographic groupings.

Sampling techniques useful for deciding who to interview include (WHO: IDU-RAR, 1998):

- **Purposive sampling**, in which individuals are selected to provide the best information to improve the interviewers understanding of the topic and to validate previous findings.
- **Quota sampling**, in which a certain type and number of informants are targeted for interviews. This allows for all key individuals and groups to be included in the interview process.
- **Network sampling**, in which key informants are used to introduce one to those difficult to reach persons or groups. This creates a snowballing effect with more and more interview contacts being made until no new data or insights are produced.

Key informants for the early screening phase of the rapid assessment include participants from local, regional and national levels. For stage two this is broadened to include targeted individuals and groups to gain and verify additional information. In later phases of the assessment all of the above may again be interviewed together with the inclusion of community groups.

The three main interview techniques identified for use in rapid assessment and response toolkits are unstructured, structured and group interviews. Other typologies differentiate between standardised and non-standardised interviews and these equate to structured and semi-structured interviews. These qualitative interviews may be conducted one-to-one via face-to-face or telephone interviews or by one-to-many in focus group interviews. It is recommended that for screening stage rapid analysis, one-to-one interviews be conducted.

**Structured Interviews**

These use questionnaires based on a standardised or predetermined questions. These questions are often determined after exploratory research and literature searches.

**Strengths:** It allows the researcher more control over the subject matter and format of the interview. In devising the interview questions the interviewer should have some
expectation of what area or issue they wish to have answered and they need to also include some prompting type questions to achieve this objective. This standardised approach allows for easier analysis and comparisons of data. When there are time restraints structured interview questions can be prioritised to collect the necessary information. For inexperienced interviewers a structured interview format may well be the best option.

**Limitations**: Structured interviews prevent the collection of additional and often relevant information. The questions may be interpreted by interviewees differently thus conveying varying interpretations of the subject matter and affecting comparisons. The interviewer needs to read out the questions in the same tone of voice and emphasise the same points to prevent interview bias.

**Semi-structured and non-standardised interviews**

The interviewer has a list of themes and questions to be covered but the topics covered and responses are not constrained and may vary from interview to interview. Recognition is made of the organisational context in relation to the research topic and the number and order of the predetermined questions will vary. To fully explore the research topic additional questions may need to be spontaneously asked and explored during the initial interview. The WHO refers to this style of interview as unstructured.

**Strengths**: Is useful for collecting background data in the screening stage of the rapid assessment. It allows for flexibility in questioning.

**Limitations**: The interview process may be lengthy and the interviewer needs to keep the interview focused to prevent the discussion of irrelevant issues. The triangulation of data may be difficult, as not every interviewee has been asked the same question in the same format.

**Unstructured and non-standardised interviews**

These are generally informal discussions to explore general areas and are often referred to as in-depth interviews. The interviewer or interviewee may direct the interview. This type of interview is lengthy and adds little value to rapid assessment interviews.

For the screening stage of rapid analysis a combination of structured and semi-structured interviews are used.
Methodological rigour

Prior to the interview: One needs to set up interviews well ahead of time to facilitate planning for the interviewer as well as the interviewee. The public sector interviewees may well try to amend the interview date and time shortly before the appointed meeting and this needs to be met with patience and understanding on the interviewers part but one needs to also impart the importance of what you are doing and the difficulties that you are facing by having to reschedule the interview. This process is dependent on the interview relationship and this can be established from the outset by clearly defining the objectives of the research topic, by correcting any misconceptions, assuring the interviewees that any information that they provide will be confidential and by making them feel part of the process to ultimately result in the implementation of a beneficial programme.

Problems during the interview: The interests and the expectations of the researcher can affect an interview causing interviewer bias and the researcher needs to be made aware of this. Interviewees may exaggerate certain achievements, ignore those areas of underperformance or provide comments on areas outside of their areas of expertise. These factors result in informant bias. In many geographical regions there may well be a need for an interpreter and to prevent interpreter bias the interpreter must be adequately prepared to the topic including specialist jargon, the language and the need for sensitivity, precision and confidentiality. The role of the interpreter must be explained to the interviewee and the questions must be directed to the interviewee not the interpreter.

Problems whilst recording the data: It is difficult to record detailed interview notes as well as conduct an interview. For this reason taping the interview is recommended. However this needs to be agreed with the interviewee. Some interviewees feel uncomfortable knowing that they are been recorded and this may affect the quality of the data. If in any doubt rather use the recording for selective key information and use note taking for the other information. Rapid assessments are dependent on an effective record of collected data. For note taking, adequately record the details of the interview and use heading, subheadings and margins to divide the interview into sections. Salient points and not copious notes are needed as these can be added after the completion of the interview process. At all times during the recording or note taking process one needs to remain sensitive to the needs and concerns of the interviewee. If the interview is longer than anticipated ask permission to continue or reschedule another meeting to prevent the process from been rushed.
Problems immediately after the interview: One needs to provide sufficient time between interviews for reflection. This is to adequately record the notes from the interview, to identify any of your own weaknesses during the interview process, and to identify any new or potential areas for question exploration. All recorded material, tapes and notes, must be dated and filed for easy access and reference to better facilitate the latter stages of rapid assessment analysis.

Use of Routine Data

Routine data sets.

- Team performs assessment the needs in data for each module in the toolkit against the availability of the data routinely collected through the standards information channels.
- Identify sources of information, for multiple sources consider collecting information from all of them for triangulation
- Rank the sources according to:
  - Availability / Accessibility
  - Quality
  - Completeness
- Review the data to make sure that definitions are available
- Check the definitional integrity
- Check comparability of data definitions across systems
- Check comparability of definitions over time in the routine data sets
- Arrange the routing data in a way to ensure referential integrity
- Feedback on the data structure to make sure the datasets potential is fully utilised

Existing information allows the researcher to:

- use information that they would not otherwise have the resources to collect
- compile profiles of factors which can obstruct or facilitate activities and behaviours

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use local information to obtain a ‘snap-shot’ of what is currently happening in the area.

It can include such things as:

- routinely collected data from government bodies, treatment centres and university researchers
- documentary sources such as television news programmes and NGO annual reports, and local information from community organisations, religious groups and outreach workers

Skills in using existing information are important, as:

- in the early stages of a rapid assessment it involves the collection of background data on the local area, surrounding region, and national situation. This is useful in understanding the context in which the study is being conducted.
- in the early and middle stages it can identify gaps in current knowledge and practice which could be investigated further
- in the later stages it can monitor and cross-check findings from other methods

It can be tempting to only collect information that is readily available and not to make any specific efforts to search out information. However information should be:

- actively located - this will avoid important information being omitted from the study
- systematically managed - to allow materials to be easily located and distributed at a later date

The key strengths of using existing information are:

- it is usually cheap and easily obtainable
- it can often provide valuable descriptions of the distribution of behaviours or characteristics in a population
- it can be used to triangulate findings

Existing information rarely provides an unproblematic description of the situation:

- documentary sources vary widely in terms of their accuracy
- statistics must always be interpreted carefully by the researcher as they can be biased or inaccurate
- the information is often produced with a particular audience in mind
Annex 2. Extended analytical tools available to the team at Phase III

The tools identified below were analysed using a framework, which takes into account variables centring on the tool itself, and potential users. This framework was developed as part of a review of tools used in health system assessment and reform internationally and is summarised below. It is clear in carrying out this review that there is little consensus on what constitutes a tool or toolkit. Case studies, technical tools (both quantitative and qualitative) and descriptive conceptual frameworks have all been described as tools.

The tools identified in this kit are by no means an exhaustive list. Many other tools are available for use.

**Figure 1. Analysis Framework**

<table>
<thead>
<tr>
<th>User Variables</th>
<th>Tool Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning, knowledge and capacity</td>
<td>Reliability and validity</td>
</tr>
<tr>
<td>Shared understanding/language</td>
<td>Accuracy</td>
</tr>
<tr>
<td>Ownership: external vs in-country</td>
<td>Sensitivity to local needs</td>
</tr>
<tr>
<td>Motivation/Incentivisation</td>
<td>Resource use</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>Complexity/systems reduced to components</td>
</tr>
<tr>
<td>Explicit link to decision-making</td>
<td>Duplicatin of information</td>
</tr>
<tr>
<td>Individual vs organisational users</td>
<td>Quantitative vs qualitative tools</td>
</tr>
<tr>
<td></td>
<td>Values and beliefs that underpin tools</td>
</tr>
<tr>
<td></td>
<td>Fitness' to policy process</td>
</tr>
</tbody>
</table>

**Variables that are both user- and tool-related**

In this framework it is useful to note that *individual learning* happens within three domains, the cognitive, psychosocial and affective domains and *capacity* in all three have an impact on the individual’s receptivity or resistance to learning. The cognitive domain is knowledge based (fact, understanding application), the psychosocial is skills based (imitation, practice, habit) and the affective domain is belief based (awareness, distinction, integration). Individuals use all three domains but will have preferences, which influence their learning style.
Knowledge refers to both codified explicit knowledge (easily communicated and documented) and tacit knowledge (highly personal and based on beliefs and values). The more codified knowledge becomes the more abstract it becomes. Different levels of diffusion can be achieved depending on the codification used, that is, only certain professional groups may be able to access certain types of information. Information that needs to be understood by an audience must therefore be compatible with the language, values and motivation of the people being addressed. Any toolkit that is designed for use in health system assessment must keep this in mind. In terms of the tools already in use, all are codified but some are more abstract than others, for example, the DALY is a highly complex codified and abstract tool, whereas a household survey, though highly codified is less abstract. The language used in a household survey is shared across a wider range of groups than that of the DALY. Other reasons for poor diffusion of information are poor awareness of the information that exists among potential users, ignorance of the information’s particular usefulness or the information is perceived as highly resource intensive.

User-related Variables

In order to sustainably utilize situation assessment tools, it is imperative to enable local counterparts to apply skills and knowledge through experiential learning. It is essential to stimulate demand for capacity building from country level organisations in order that they can internalise and ‘own’ the process of health system assessment and its outcomes. All too often, donors prescribe the tools to be used for situational assessment, monitoring and evaluation (often developed by the donor organisation itself), leaving local counterparts excluded from the process.

Motivation is fundamental to an individual’s learning and is linked to the issues of the individual’s perception of the usefulness of some knowledge or skill. In the case of the use of tools to support decision making, this usefulness is likely to be the explicit link between the use of the tool and the decision making process.

Tool-related Variables

A number of methodological issues arise time and again with a range of tools used in health system assessment including reliability, validity, accuracy and the level of resources required.
to apply the tools. Reliability refers to the reproducibility and consistency of a tool and validity looks at whether the tool measures what it is supposed to. Qualitative tools such as surveys and questionnaires in particular are more open to criticism in terms of reliability and validity. Bias is one of the main threats to reliability and validity, in terms of the structure and implementation of the tools and the values and assumptions that underpin them. Data accuracy is frequently open to questions particularly in resource poor settings where routine data sets are frequently inaccurate and out of date. Many tools require considerable resources to facilitate their application, which makes it difficult for local organisations to apply them without external support. For example, the Demographic Health Survey carried out in many countries is heavily subsidised by UN agencies and other donors, as it requires considerable financial and human resources. There is also concern that tools can be repetitive in their content and duplicate information gathered by other tools or routinely within the local context.

Generic toolkits are sometimes seen as insufficiently sensitive to local contexts and needs although over-specificity is also criticised.

Systems' thinking is extremely important in the assessment of health systems performance. Reductionist approaches to assessment that reduce systems to components fail to recognise the linkages between system elements, the confluence between the system and context and the consequent adaptive behaviours of each.

Policymakers and those carrying out situational assessments can have very definite views about the relative usefulness and power of qualitative versus quantitative methodologies based on their own biases and this will impact on the tools chosen.

When people experience opinions or actions that do not fit with their pre-existing knowledge or values and beliefs, they experience cognitive dissonance, which they then seek to reduce by limiting their exposure to the dissonant stimulus, attending to only those aspects of the new stimulus that are congruent, interpreting the new stimulus as congruent or retaining only that information from the stimulus that is congruent. Therefore tools that are based on values and beliefs that are incongruent with an individual or organisations beliefs and values are unlikely to be used.

Equally, if tools are not perceived to 'fit' with the policy process as it has been developed at local level, they will not been deemed appropriate.
**Extended analytical tools available to the team at Phase 3**

**Qualitative tools**

<table>
<thead>
<tr>
<th>Tool and / or Methodology</th>
<th>Modules and Areas Assessed</th>
<th>Strengths and Limitations of the methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic</td>
<td>Programmatic</td>
<td></td>
</tr>
<tr>
<td>Mapping</td>
<td>Political economy</td>
<td><em>Political mapping</em>[^8] is a tool that maps political actors and networks</td>
</tr>
<tr>
<td></td>
<td>Health system structure and organisation</td>
<td>Enables prediction of the potential impact of actors on health sector reform</td>
</tr>
<tr>
<td></td>
<td>Health system relationships/ linkages</td>
<td>Political mapping does not attempt to examine the policy or reform content</td>
</tr>
<tr>
<td></td>
<td>Information systems infrastructure,</td>
<td><em>Organisational mapping</em> helps to simplify the complex system of relationships and identify the multiplicity of actors / institutions within the system</td>
</tr>
<tr>
<td></td>
<td>Information flows</td>
<td><em>Process mapping</em> helps to clarify administrative and clinical processes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mapping can over-simplify relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mapping can be carried out in groups to minimise potential information gaps and bias</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comparative Analysis of Policy Processes Framework⁹</th>
<th>Political-economy</th>
<th>Provides a more locally sensitive assessment of the political economy based on a framework approach that does not assume a pluralistic model.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder analysis¹⁰</td>
<td>Health system organisational relationships, including external to health system</td>
<td>Training for local counterparts in application of the framework is required.</td>
</tr>
<tr>
<td>TB programme organisational relationships, including external to health system and TB control programme</td>
<td>Detailed stakeholder analysis can be time-consuming.</td>
<td></td>
</tr>
<tr>
<td>Cultural sensitivity is essential as some stakeholders, especially those who are less empowered may have difficulty expressing their views openly and honestly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participatory Action Research¹¹</td>
<td>Enables researchers to obtain information on local community perspectives and preferences for health care.</td>
<td></td>
</tr>
<tr>
<td>Key informants need to be selected carefully and with an understanding of their position within the community so that informants are representative of as many potential views as possible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The methodology of PAR is inclusive as alterna-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Public Health Mapping[^12]</th>
<th>Strengthens data collection, analysis for management decision-making and dissemination</th>
<th>Geographic information and mapping system</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Used by a range of programmes internationally (Roll Back Malaria, UNAIDS, IMCD, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Currently used for a limited range of diseases and generally for epidemiological information only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relies on the use of GIS and information technology in contexts where IT is poorly distributed and the use of information that is available for decision-making is poor.</td>
</tr>
<tr>
<td>Case studies</td>
<td>Health system responses to change</td>
<td>TB programme responses to change</td>
</tr>
<tr>
<td></td>
<td>Use of information to support decision-making</td>
<td>Use of information for decision-making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can provide useful in-depth qualitative information on previous experiences, processes and responses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information may not always be widely available especially for programme ‘failures’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can be open to interpretation based on bias and assumptions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Logistics System Assessment Tool&lt;sup&gt;13&lt;/sup&gt;</th>
<th>Logistics information system</th>
<th>The tool has been field tested in Tanzania for HIV test kits and in Ivory Coast for STI drugs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics forecasting</td>
<td>Detailed series of questions related to current logistics systems.</td>
<td></td>
</tr>
<tr>
<td>Procurement</td>
<td>A range of software is available from JSI/Deliver to analyse the data.</td>
<td></td>
</tr>
<tr>
<td>Inventory control procedures</td>
<td>Some expertise in logistics is required.</td>
<td></td>
</tr>
<tr>
<td>Warehousing and storage</td>
<td>Does not identify different logistics systems that may be in place in one country (i.e. public/private/voluntary).</td>
<td></td>
</tr>
<tr>
<td>Transport and distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisational support for logistics system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Global Drug Facility analysis&lt;sup&gt;14&lt;/sup&gt;</th>
<th>Drug supply and management</th>
<th>Provides a comprehensive overview of the drug supply process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug quality assurance</td>
<td>As with any analysis, is dependent on the quality of information available</td>
<td></td>
</tr>
<tr>
<td></td>
<td>An externally driven process requiring a country to fulfill conditions before acceptance into the programme leading to potential bias in the information provided</td>
<td></td>
</tr>
</tbody>
</table>

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### Institutional Capacity Assessment

<table>
<thead>
<tr>
<th>Administrative and support functions</th>
<th>Technical/programme functions</th>
<th>Generalised framework aimed at institutional assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure and culture</td>
<td></td>
<td>Outlines specific tools that can be used such as PROSE(^{16}), OCAT(^{17}) and IDF(^{18})</td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td>Used primarily with NGO's not with government institutions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Questionnaire approach means that <em>perceived</em> rather than <em>real</em> capacities may be assessed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not specific to HIV programmes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May miss essential elements specific to HIV programmes</td>
</tr>
</tbody>
</table>

#### Descriptive analysis of financing arrangements

<table>
<thead>
<tr>
<th>Financing arrangements in health system (type of health financing – sources – pooling- allocation)</th>
<th>Financing arrangements (type of programme’s financing – sources – pooling- allocation)</th>
<th>A descriptive framework that can help to define potential policy options and assess their viability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Provides information on the management of the financing system additional to the quantitative information obtained from accounts and budgets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potentially sensitive to local needs and differences</td>
</tr>
</tbody>
</table>

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\(^{15}\) Tips on Measuring Institutional Capacity, USAID, 2000

\(^{16}\) Participatory, Results-Oriented, Self-Evaluation, Education Development Centre

\(^{17}\) Organisational Capacity Assessment Tool, PACT, USAID

\(^{18}\) Institutional Development Framework, Management Systems International

<table>
<thead>
<tr>
<th>Fund flow analysis</th>
<th>Financing arrangements in the country of region</th>
<th>Financing arrangements in the programme</th>
<th>Fund flow analysis helps to simplify the often complex system of financial relationships between institutions within the system. Provides an extension to descriptive analysis of financing arrangements. Provides a framework to analysis of financial incentives in the system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical note audit</td>
<td>Patient pathway</td>
<td>Use useful tool in tracking real time and real life patient experiences. Content and format of medical notes may differ from country to country. Much depends on the quality of note keeping, this itself can be informative. Sampling of patient notes is essential to understand pathways for different patient groups. In systems with advances health information systems, clinical note audit can be supported by electronic data mining.</td>
<td></td>
</tr>
<tr>
<td>Staff surveys&lt;sup&gt;20&lt;/sup&gt;</td>
<td>Human resources</td>
<td>Human resources</td>
<td>The response rate will vary according to the incentives provided. Questions must be designed carefully not to bias the results.</td>
</tr>
</tbody>
</table>

| | Human Resources in the Health Sector | Human Resources in the Health Sector |

Human Resource Rapid Assessment Tool

<table>
<thead>
<tr>
<th>Human resource impacts on:</th>
<th>Human resource impacts on:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy frameworks (SWAps; MTEF; PRSP)</td>
<td>Specific disease programmes such as HIV; Malaria and TB</td>
</tr>
<tr>
<td>Policies</td>
<td></td>
</tr>
<tr>
<td>Reform programmes</td>
<td></td>
</tr>
<tr>
<td>HMIS</td>
<td></td>
</tr>
<tr>
<td>Issues covered:</td>
<td></td>
</tr>
<tr>
<td>Policy, regulation and planning</td>
<td></td>
</tr>
<tr>
<td>Management and performance improvement</td>
<td></td>
</tr>
<tr>
<td>Labour market</td>
<td></td>
</tr>
<tr>
<td>Education, training and research</td>
<td></td>
</tr>
<tr>
<td>HRH and priority health programmes</td>
<td></td>
</tr>
</tbody>
</table>

Not all respondents may feel able to respond openly and honestly.

Uses a conceptual framework that places HR in a broad political, social, economic and technological context.

Data analysis is intended to last ‘only’ 4 weeks.

Qualitative and quantitative methodologies are used.

Critical questions within each area are identified.

The quantitative information sought assumes that this information is easily available or available at all.

The toolkit does not identify who the key informants to be interviewed should be and their position within the health system.

Additional more in depth tools are identified for supplementary analysis including the *WHO HRH requirements for 3 by 5 strategy template*.

---

### Monitoring and evaluation

<table>
<thead>
<tr>
<th>Health Service facility surveys</th>
<th>Patterns of provision</th>
<th>Patterns of provision</th>
<th>Provides a comprehensive and up-to-date list of providers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patterns of utilisation</td>
<td>Patterns of utilisation</td>
<td>Sampling techniques used must be clearly defined</td>
</tr>
</tbody>
</table>

2. Incentives to provider to return accurate data should be examined (e.g. funding issues)

<table>
<thead>
<tr>
<th>NGO Capacity Analysis$^{22}$</th>
<th>Identify the capacity building needs of NGO’s delivering TB services</th>
<th>Provides and framework and outlines a process for building capacity of NGO’s that includes an assessment of current capacity.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Organisational capacity</td>
<td>Uses group discussions, individual structured interviews and documentation reviews. Assessment is both by external assessors and self-assessment.</td>
</tr>
<tr>
<td></td>
<td>TB technical capacity</td>
<td>Has been tested in Ecuador, Cambodia and India and may need adaptations for use in other countries/regions.</td>
</tr>
</tbody>
</table>

## Quantitative tools

<table>
<thead>
<tr>
<th>Tool and/or Methodology</th>
<th>Modules and Areas Assessed</th>
<th>Strengths and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systemic</td>
<td>Programmatic</td>
</tr>
<tr>
<td>Statistics and routine data sets</td>
<td>Socio-demographic trends</td>
<td>Available in almost every country and relatively easy and quick to obtain$^3$</td>
</tr>
<tr>
<td></td>
<td>Patterns of provision</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patterns of utilisation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Needs assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Socio-demographic trends</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patterns of provision</td>
<td>Variable quality and perception of quality among users</td>
</tr>
<tr>
<td></td>
<td>Patterns of utilisation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Epidemiological trends</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cure rates</td>
<td>Data collected in-country or definitions used may not correlate with those required by a specific programme</td>
</tr>
<tr>
<td></td>
<td>Drug resistance rates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completion rates</td>
<td>Data set can be duplicated by a number of agencies and such duplication can be used a source of triangulation and further analysis$^4$</td>
</tr>
<tr>
<td></td>
<td>Data classification system</td>
<td></td>
</tr>
<tr>
<td>National Health Accounts$^{23}$</td>
<td>Financing allocations by major programmes</td>
<td>Longitudinal data sets can be distorted by changing data collection policies, definitions and technical changes in the information systems</td>
</tr>
<tr>
<td></td>
<td>Financial allocation by interventions within the programme</td>
<td>Can provide an accurate and sometimes surprising picture of the balance of revenue and expenditure across different areas of the system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only included expenditure whose primary purpose is health although other related expenditure can be listed separately (e.g. sanitation; social services; etc)$^5$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Categories and definition used for funding sources and</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool and/or Methodology</th>
<th>Modules and Areas Assessed</th>
<th>Strengths and Limitations</th>
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<tr>
<td></td>
<td>Systemic</td>
<td>Programmatic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sector Finance reform Model&lt;sup&gt;24&lt;/sup&gt;</td>
<td>Financing allocations</td>
<td>uses <em>are not generally agreed</em> leading to differences between countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information in relation to private expenditure can be difficult to obtain especially: service provision within organisation and out-of-pocket undocumented expenditure</td>
</tr>
<tr>
<td>Economic Evaluation</td>
<td>Resource allocation and priorities</td>
<td>Examines the distribution of expenditure and resources across the population and concerned with both supply and demand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Projects expenditure and use by providers, functions, user groups and regions based on policy options, behavioural assumptions and assumptions about rates of change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Computer model can generate historic and project future NHA’s for specific countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Categories and definition used for funding sources and uses are not generally agreed leading to differences between countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information in relation to private expenditure can be difficult to obtain especially out-of-pocket expenditure</td>
</tr>
<tr>
<td>Economic Evaluation</td>
<td>Resource allocation and priorities</td>
<td>Comparative cost effectiveness analysis of different interventions can be carried out with some training of in-country policy makers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool and/or Methodology</th>
<th>Modules and Areas Assessed</th>
<th>Strengths and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programmatic</td>
<td></td>
</tr>
<tr>
<td>Contingent valuation has been identified as a more comparative and appropriate evaluation tool in health care programmes(^25)</td>
<td>Enables rational resource allocation decisions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Systemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programmatic</td>
<td></td>
</tr>
<tr>
<td>Enable rational resource allocation decisions</td>
<td>Economic evaluation is rarely the only reason for allocation decisions</td>
<td></td>
</tr>
<tr>
<td>Programme budgeting and marginal analysis</td>
<td>Financing allocations and cost of attaining changes</td>
<td>Relatively simple and realistic economic analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides information on the relative cost effectiveness of additional funding thus having more direct relevance to decision making(^26)</td>
</tr>
<tr>
<td>National and local TB budget analysis</td>
<td>Financing allocation by types of expenditure usually recorded in accounting system</td>
<td>Provides information on the funds allocated to specific programmes and the various elements within these programmes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Needs to be related to broader datasets such as National Health Accounts and other programme budgets in order to for relative comparisons to be made</td>
</tr>
<tr>
<td>Years of life lost(^27)</td>
<td>Morbidity rate of TB</td>
<td>Relatively easier to calculate and less contested than measures such as the DALY</td>
</tr>
</tbody>
</table>


\(^{27}\) [http://www.cdc.gov/nchs/datawh/nchsdefs/yearofpotentiallifelost.htm](http://www.cdc.gov/nchs/datawh/nchsdefs/yearofpotentiallifelost.htm)
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27 Mays N, Pope C, & Popay J. Details of Approaches to Synthesis: A Methodological Appendix to the Paper: Systematically Reviewing Qualitative and Quantitative Evidence to Inform Management and Policy Making in the Health Field. CHSRF and SDO websites, 2005


