Advancing tuberculosis control within reforming health systems

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THE CONTEXT in which tuberculosis control is pursued has changed dramatically in many countries over the past decade. Increased global attention given to the tuberculosis epidemic, awareness of the effectiveness of the recommended basic control strategy known as DOTS (directly-observed treatment, short-course), and expanded financing for tuberculosis control, have led to the adoption of the strategy in 102 countries by the end of 1997. This, however, is still insufficient to battle the worldwide epidemic, with many of the 22 countries that account for 80% of the global tuberculosis burden making limited or no progress in expanding the approach.¹ Settings in which health sector reforms are underway are viewed as a challenge for DOTS expansion.² Changes in the dynamics of the tuberculosis epidemic itself (principally associated with the impact of human immunodeficiency virus [HIV] associated tuberculosis and drug-resistant disease) and economic crises further complicate control efforts. They also make assessment of the association between reforming systems and tuberculosis control more difficult.

This paper reviews the objectives and strategies for health reform in developing countries. It identifies opportunities and risks for advancing tuberculosis control in this dynamic environment, including challenges in managing the transition. This review benefits from previous discussions of the likely effects of reform on tuberculosis control,³–⁵ as well as related work on other priority public health interventions.⁶–⁸ However, this work is impeded by still limited published analyses of national experiences. In addition, some reform programs have been adopted too recently to be able to draw reliable conclusions. Therefore, this review raises numerous hypotheses requiring field study.

HEALTH SECTOR REFORM OBJECTIVES AND STRATEGIES

Objectives

Health sector reform is a non-specific term for a wide range of actions meant to improve health system performance. It is concerned with ‘defining priorities, refining policies, and reforming the institutions through which those policies are implemented’.⁹ Throughout the developing world, publicly-funded health systems have been criticized for not achieving adequate improvements in health outcomes, especially for the poor. The reasons given have included: lack of prioritization of cost-effective measures, poor access to quality services and resulting low utilization, non-sustainable financing and poor cost-control.⁹–¹¹ There is also widespread concern that, due to donor dominance, low-income nations have had little ownership of their systems, thereby limiting motivation and flexibility to respond to local needs and expressed demand.¹² Improving efficiency, equity and quality are over-arching objectives of reform.

Efficiency

Technical efficiency addresses the need to apply the most cost-effective tools in resolving a given problem. Analysis of the field effectiveness of health interven-
tions in developing nations, and their value for money, has increased substantially. Evidence-based medicine is now promoted.

Allocative efficiency demands prioritization across interventions using explicit criteria such as determination of market failures requiring public interventions (such as existence of public goods or externalities) and cost-effectiveness analysis. Allocative efficiency also demands priority-setting across sectors, with some reform agenda explicitly calling for increased investment in the health sector as a share of government spending.

**Equity**

Broadening equitable access to health services and improving health outcomes for the poor are included in many health reform agenda. Measures to improve equity may include improving the distribution of health services, spending on interventions against health threats that especially affect the poor, targeting of services, and community oversight.

**Quality**

Low utilization of public services in developing countries has often been attributed in part to client perceptions of poor quality of care. Given the limited capacity to survey clients about their needs, the provision of cost-effective interventions for high-burden problems aims to increase responsiveness and quality. Documenting outcomes is needed to measure quality and improve provider accountability. Formal community oversight is also seen as a means of increasing quality.

**Reform strategies**

Because there are numerous and varied health reform strategies, it may be unwise to use the blanket term ‘health reform’ in cross-national comparisons, and better to specify each approach and its impact. Population characteristics, political dynamics, institutional configuration, and the role of donors, providers and other stakeholders can influence the choice and/or ordering of strategies and their implementation. Experience with some of the most common strategies are noted here.

**Decentralization**

Decentralization or devolution of health service administration and other functions is perhaps the most dominant reform strategy underway in most countries, large and small. The premise is that if lower levels of government are given more control over design, financing and administration of health services and/or services in other sectors, bureaucracies will be reduced, services will be better adapted to the needs of the local population, and efficiency, quality and utilization will improve, thereby leading to better outcomes. Even in countries with more than 10–20 years of experience, there is still substantial debate over whether decentralization meets these objectives in practice. It is also difficult to aggregate diverse experiences. Certainly, the implications of decentralization to state or provincial level in India are different from those in Zambia and Guatemala. Both Brazil and the Philippines (Mantala M J. Health sector reform and TB: report from the Philippines. Presentation, IUATLD World Conference on Lung Health, Madrid, Spain: September 1999—unpublished) have gone through protracted processes of decentralization, first to state levels and then to local government levels, with numerous changes over time in how federal institutions function within the reformed system. The risks and benefits of decentralization for priority programs, and communicable disease control specifically, have been discussed for many years, and may depend on the nature of the diseases, their control strategies and the capacity of the institutional and administrative levels involved.

**Program integration**

The integration of central government programs, including communicable disease programs, is often linked to larger government reforms such as decentralization and sector programs (see below). The changes are based on notions that numerous ‘vertical’ or ‘categorical’ programs are top-heavy, unnecessarily competitive, inefficient, non-sustainable, non-responsive to particular community needs and may not ensure access and/or quality of care. This is not a new concern. A 1988 World Health Organization (WHO) publication stated “The era of specialized health programmes, each aimed at a specific disease, is over. But while countries acknowledge the need to integrate various disease control activities into their general health services, the integration process is fraught with difficulty.” The challenge is not at the service level, where segregated vertical structures have largely disappeared, but rather at intermediate and higher levels where the question remains how best to ensure capacity-building and quality of complex technical, managerial and surveillance functions. Further analysis is needed on whether the measures facilitate innovative coordinated efforts and improved outcomes, or simply lead to down-sizing of staff, interventions and thereby costs. Some proponents of this approach are now cognizant of the difficulties in effectively integrating priority programs.

**Application of user fees in public facilities**

Application of user fees in public facilities has increased over the last decade with the intention of expanding resources for service delivery, and increasing provider accountability to clients. Experiences have been mixed, and new efforts seek to set more appropriate pricing levels, subsidies and/or exemptions for the poor, and targeting of revenues generated.
Focused provision of essential services packages

Focused provision of essential services packages is promoted to improve all three reform objectives. Prioritization exercises have frequently led to a call for redistribution of resources away from tertiary services to primary care and prevention.9,11 ‘Packages’ of essential services, comprised of cost-effective interventions, have been devised and promoted.11,29 These packages have been pursued as an element of reform programs in numerous countries (e.g., Mexico, Zambia, Bangladesh, Kenya, Côte d’Ivoire). However, implementation has been slow for a number of reasons, including the following: 1) there is confusion over what services to exclude; 2) there is recognition that the absolute resources allocated to the health sector are currently too limited to support such coverage, even with extensive shifting of resources and improved efficiency;9,11,24 3) there are critics that suggest that many cost-effectiveness analyses on which these packages were devised need to be further validated;30 and 4) there are limited resources and capacity to develop coherent methods of delivering the components. Studies that have looked in depth at these delivery challenges were not identified. Some countries do emphasize essential services in defining priorities for public spending. Bangladesh is an example, where a new sector program established a target of increasing spending on an essential services package to over 65% of the Government health budget. Target achievement is one criteria for donor release of funds, with 50% of donor funds targeted to these services.31

‘Sector-wide approaches’ (SWAps) or ‘sector programs’

‘Sector-wide approaches’ (SWAps) or ‘sector programs’, may incorporate many of the elements noted above and below. Guidelines on setting objectives, designs and modalities have been elaborated.12 The essential objectives are to increase coherent national health planning, to improve national and local ownership of the process, and to build the foundation for more sustainable health systems.12,23,24 The call for such approaches have come predominantly from countries where donor contributions dominate in public sector spending and where ear-marking and project-specific financing has proliferated to the point where there may be little cooperation across projects or improvement in results. The greatest movement toward the SWAp framework is in sub-Saharan Africa. SWAps per se are less likely to be pursued in settings where there is a smaller donor presence, but the notions of sector-wide strategic planning and monitoring can still apply. Given the very recent adoption of SWAps in numerous countries, there are as yet few well-documented results. Nevertheless, the speed of the model’s adoption in some countries, without gradual testing, has already had serious deleterious effects on public health programming and service delivery, one of the most dramatic examples being Zambia.8,24,32 Initial results may be more successful in countries that have had prior experience in devolving functions and in sector-wide planning prior to consolidating donor financing, such as in Ghana, where the health share of government financing is also slowly increasing.15

An inter-institutional working group on SWAps has advocated better planning and better evaluation of reform negotiations.33 Furthermore, SWAp proponents now acknowledge that ring-fencing for priority program functions may be necessary.24 Some countries, such as Egypt, have developed a sector program but maintain project-financing within it for certain priority programs such as TB control.14

Civil service reform

Civil service reform is an overall mandate of many governments. The objectives are to improve efficiency, equity and quality through more flexible hiring and firing with contracting, better staff distribution, and in some cases, performance-based incentives.5,11,12 Experience from Peru shows that contracted staff helped to double consultations and reach rural populations.35 If reform, however, means simply downsizing manpower, freezing wages, or removing security, the results may be very different.4 More analysis is needed to link these policies with service outcomes.

Corporatization or autonomization of public hospitals

Corporatization or autonomization of public hospitals are recent measures now in piloting phase that provide these major consumers of public finance with set budget limits and make them responsible for their own planning, budgeting, cost recovery (to varying degrees) and administrative structures.9,11,16 Community boards may be established to oversee the institutions. Limited results are available to date, especially with regard to public health functions.

Engaging the private sector

Many reform programs seek to increase financing and regulation of health service provision by private and non-profit sectors. Development of national health accounts and survey tools have demonstrated that out-of-pocket spending for health care often comprises over 50% of overall health spending, even in very low-income countries.10,11,16 Interventions piloted include contracting out for service delivery, following standards of care provided in the public sector. There is a growing body of literature on contracting out of non-clinical and a few clinical services. Results have been variable, with clinical services the more problematic due in part to restricted capacity of governments to provide oversight and training.36 Improved regulation of the private sector is less advanced, in part due to limited public enforcement capacity.
Expanding insurance coverage

Expanding insurance coverage is a rapidly growing focus of reform agenda. Proponents believe that coverage will mean that there will be more incentives for private delivery of quality services and thereby less need for government provision. Government can then focus on normative and regulatory functions as well as service provision for the still uninsured. However, in low-income countries, the taxation, regulatory and formal-sector employment bases are often too restricted to facilitate development of large-scale insurance schemes. Community schemes or those directed at certain vulnerable groups are being tested.9,16,17

SYNERGY BETWEEN REFORM OBJECTIVES AND TUBERCULOSIS CONTROL

The objectives of improving efficiency, equity and quality are synergistic with the principles of effective tuberculosis control, as articulated, for example, in the DOTS strategy. Therefore, there are opportunities for mutual reinforcement. Table 1 summarizes the links between the two. DOTS combines five public health policy elements: detection at least of infectious cases, using smear microscopy; standardized treatment including direct observation of drug intake by health workers or volunteers; a secure system of regular drug supply; a recording and reporting system for case management and program monitoring; and political commitment to make the above possible.1

To advance technical efficiency, DOTS comprises technical strategies for TB control that have been documented as cost-effective,11 and replaces antiquated, costly and sometimes dangerous practices. It also makes health providers accountable for their choice of interventions. To advance allocative efficiency, DOTS has been widely recommended as an element of essential services for public financing.11 There are strong economic grounds to argue that the public sector must play an essential role in tuberculosis control, given significant externalities.13 Surveillance, knowledge generation and cross-border control of transmission can all be considered global public goods37 worthy of public finance within reform programs. Furthermore, the DOTS approach offers a means to report transparently on efficient use of input and associated impact.

On equity grounds, reformers should be seeking to focus public resources on public health threats and those that differentially affect the poor. TB control meets these criteria.38 Equitable access and use of health services across gender lines is also on the reform and development agenda. TB annually kills over half a million women in the developing world and thereby represents a significant risk to the advancement of women and their family’s social welfare.39 Effective tuberculosis control offers solid indicators of quality of service delivery and outreach through regular case reporting and cohort analysis of treatment results. A cured case is a tangible measure of service responsiveness. The information system helps detect quality deficiencies, whether in the drug store, the laboratory, the clinic or the hospital.

In Table 2, hypotheses are provided on how major reform strategies may offer opportunities as well as risks for improved TB control. Further system monitoring, evaluation and analysis is needed to elucidate these relationships.

RISKS AND RESPONSE IN THE PROCESS OF IMPLEMENTATION

Available analyses of the varied reform strategies suggest that the following risks are posed for priority disease control programs, and TB specifically. Some examples of positive pre-emptive steps or timely reactions are noted.

- Restricted participation in planning and monitoring
  Program staff may be excluded from organized reform planning and monitoring efforts. They may be viewed as having ‘vested interests’ or being ill-informed in policy formulation, and thereby have little say in changes pursued.33 Discussions among national TB program managers, such as in Latin America, have suggested that many feel left out of the process and are reluctant to push.40

Table 1  Synergistic objectives

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<thead>
<tr>
<th>Health sector reform</th>
<th>TB control (DOTS)</th>
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<tr>
<td>Technical efficiency</td>
<td>Choose most cost-effective strategy to address specific health problems</td>
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<tr>
<td>Allocate efficiency</td>
<td>Improve transparent and rational priority-setting across interventions/regions</td>
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<td>Equity</td>
<td>Increase service access and utilization, especially by the poor</td>
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<td>Quality</td>
<td>Improve measurable health outcomes via service delivery</td>
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<td></td>
<td>Diagnostic and treatment services proven highly cost-effective in comparison to</td>
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<td></td>
<td>previous TB control approaches and other health interventions</td>
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<td></td>
<td>Routine data used to calculate cost-effectiveness; focuses resources on local</td>
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<td>service level where needs are documented</td>
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<td></td>
<td>TB differentially affects the poor; case detection and treatment provided free</td>
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<tr>
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<td>and use of services most convenient to patient</td>
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DOTS = directly-observed treatment, short-course.
• **Failure to identify and protect core functions or services**

Several other papers address the specific technical and managerial functions associated with DOTS and effective TB control that must be protected in reform settings 2,3,12 (Frieden T. Surviving health reform: tuberculosis control in pluralistic health systems. ASTER Lecture, IUATLD World Congress on Lung Health, Bangkok, Thailand, 1998). The most important functions are those of provision of drugs and other supplies, standard-setting and quality control, disease surveillance and program reporting. District or municipal authorities still represent the key management unit and must be supported in performing their functions.

• **Failure to ensure financial access to TB services**

Many economists and policy makers approve of exemptions from user fees for interventions that differ-
herently affect the poor or carry large externalities, such as TB control. In most countries, smear examinations and treatment are free. However, due to severely limited resources, some countries, such as Kenya, are considering how to set user fees for TB control without hindering case-finding or case-detection. However, more information may be needed to document the impact. A study of the launch of the DOTS-based TB project in China reported that detection of infectious cases increased following removal of user charges. Maintaining free care there, in a fee for service environment, is a substantial challenge.

Core public health functions, including TB control, may not be well-articulated or supported through insurance schemes without significant explicit design, as evidenced in the US. In addition, providers may be technically ill-prepared in these areas and will need training and overseeing. Contingency planning and problem-solving may be weak. Indicators in many sector plans or decentralization schedules may be incomplete as they focus on institutional change, administrative and financing components, and do not consider outcomes. However, there are examples where outcome indicators are used in overall performance review. TB notification rates and treatment results are among those monitored now under the sector program in Ghana and in Ethiopia. In Ghana, the annual Government and donor joint reviews include detailed evaluation of priority program activities and needs.

- **Insufficient focus on process and outcomes**
  Contingency planning and problem-solving may be weak. Indicators in many sector plans or decentralization schedules may be incomplete as they focus on institutional change, administrative and financing components, and do not consider outcomes. However, there are examples where outcome indicators are used in overall performance review. TB notification rates and treatment results are among those monitored now under the sector program in Ghana and in Ethiopia. In Ghana, the annual Government and donor joint reviews include detailed evaluation of priority program activities and needs.

- **Excessive speed of reform**
  There may be pressure to demonstrate rapid change, leading to the dismantling of public health infrastructure and capacity at national levels without corresponding financing for local capacity-building. This was evidenced dramatically for tuberculosis in the US in the 1970s and 1980s, and in Brazil more recently. The cost of rebuilding capacity can be great, including the costs of resolving the serious health consequences. Bangladesh appears to be experiencing similar challenges with the consolidation of projects under a sector program. For Zambia and Bangladesh, anti-tuberculosis drug stock-outs or serious supply insecurity relate to poor planning for the transition and delayed fund allocation. A different example is provided by Ghana, where the annual sector review explicitly notes the need for planning ahead for future shifts from donor to government drug financing.

- **Lack of incremental financing to cover ‘transition’ expenses**
  Little documentation could be found of consideration for the additional budgetary needs to prepare and manage the transition from old to new approaches, including staff capacity-building and institutional restructuring. In Brazil, central level contracting with states for TB control activities has not been accompanied by added resources to monitor their implementation. Similarly, in the Philippines, resources have not been adequate to support the rapid devolution of supervisory and training functions. In Brazil, many municipalities now responsible for overseeing tuberculosis control are re-centralizing tuberculosis care in hospitals, as there is currently little capacity to train staff and monitor local clinics. This is believed to have contributed to a reduction in case detection. Examination of expected tuberculosis suspects (at 1% of adult population) fell from 49% in 1983 to 15% in 1997. Real increases in incidence may be masked by this reduction in services. In addition, with fewer services involved, the possibility of launching directly-observed treatment is diminished. The new Tuberculosis Control Plan aims to provide the incentives and framework for municipalities to again expand efforts.

In some countries, there may be a lack of recognition of the costs of launching and expanding a new technical strategy such as DOTS within a reforming or unstable health system. Further analysis would be useful to examine whether initiating sector-wide programming in Tanzania will be less problematic for tuberculosis control than in Zambia, where the DOTS strategy was not as well established at the start of decentralization, integration and basket financing. While sector programming is creating major challenges for continued expansion of DOTS in Bangladesh, what would the effects have been if this had begun earlier in the 1990s when DOTS was just being launched? Evaluation of these situations could shed some light on what functions need to be protected, especially where DOTS is in a start-up phase.

In Asia, analyses have suggested that private sector provision of care for TB patients is critically important, as quality public services are unlikely to attract back most clients, and therefore efforts to pilot test a private-public mix in delivering the DOTS strategy have been launched. However, the capacity of the public sector to oversee the scaling up of models is constrained and suggests difficult trade-offs between bolstering quality inside and outside the public sector.

- **Numerous disincentives to pursue public health efforts within more market-oriented systems**
  Increased focus on cost recovery can inhibit provider attention to free-care patients in hospitals or ambulatory settings around the world. Some experiences in TB control offer examples of how incentives can be applied to stimulate good case detection and treatment prac-
CONCLUSION

It has been suggested that the ‘radicalism’ of reform agenda of the earlier 1990s may be reverting to more moderated forces as more information becomes available on the perils and promise of reform. For example, in Latin America—a region with among the longest histories of reform efforts—proponents have begun to reframe their concepts of best practice. In this context, there is little time to waste in building arguments and an evidence base for why priority public health interventions, including effective TB control, must continue to be supported and monitored as part of reform strategies that seek to improve efficiency, equity and quality in health systems.

References


Dans les pays en développement, divers programmes de réforme de la santé affectent le schéma, le financement et la délivrance des services de soins de santé ainsi que les pratiques de santé publique. Cet article résume les caractéristiques des stratégies majeures de réforme cherchant à améliorer l’efficience, l’équité et la qualité. On identifie les chances et les risques qu’elles impliquent pour la lutte antituberculeuse comme les attitudes à adopter pour prendre en main la transition vers la réforme. On fournit quelques recommandations pour faire progresser la lutte antituberculeuse dans cet environnement dynamique. Celles-ci incluent la participation dans le processus d’élaboration ; la démonstration d’une synergie entre les objectifs de la réforme et la lutte antituberculeuse ; l’articulation des fonctions-clé à protéger ; la formation de compétences dans les domaines technique, de gestion et de direction ; les informations sur les résultats et les pratiques optimales ; et la collaboration avec ceux qui visent d’autres priorités de santé publique et l’analyse de la réforme.

En los países en desarrollo, diferentes programas de reforma de la salud están afectando el perfil, la financiación y la ejecución de los servicios de atención de la salud así como las prácticas de la salud pública. Este trabajo resume las características de las estrategias de las reformas mayores tendientes a mejorar la eficiencia, equidad y calidad. Se identifican las oportunidades y los riesgos para el control de la tuberculosis, así como las respuestas en el manejo de la transición de la reforma. Se aportan recomendaciones para mejorar el control de la TB en este ambiente dinámico. Estas incluyen participación en el proceso de planificación ; demostración de la sinergia entre los objetivos de la reforma y el control de la TB ; articulación para la protección de las funciones esenciales ; formación para crear competencias en el dominio técnico, de liderazgo y de manejo ; documentación sobre los efectos y las mejores prácticas ; y colaboración con aquellos que persiguen otras prioridades sanitarias y análisis de la reforma.