

Critical evaluation of the Global DOTS Expansion Plan

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Abstract The development of the DOTS Expansion Plan has been a milestone in tuberculosis (TB) control at the global and national levels. Key challenges that remain are overcoming the weakness of a strategy built on case management, sustaining commitment, competing priorities, the threat of HIV, maintaining high quality of care and preventing drug resistance, building human resource capacity, improving diagnosis and fostering operations research. The ability to address these challenges will determine the success or failure of the Global Plan to Stop TB, 2006–2015.

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Une traduction en français de ce résumé figure à la fin de l'article. Al final del artículo se facilita una traducción al español. الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

Introduction

The recent Global Plan to Stop TB, 2006–2015¹ takes into account the challenges identified during the five years of the Global DOTS Expansion Plan (GDEP), which ran from 2001 to 2005. At a workshop in Cairo in November 2000, national TB programme (NTP) managers from the 22 high-burden countries, WHO, technical partners, development agencies and donors agreed to develop the GDEP in response to the Amsterdam Declaration and a resolution of the World Health Assembly (WHA) in May 2000.² The focus of the GDEP would be to establish national DOTS expansion plans and develop partnerships to control TB. Participants at the workshop identified nine key areas of work as critical to achieving the goals of the Amsterdam Declaration and the WHA resolution – development of five-year plans, increased political commitment, enhanced national and international partnerships, social mobilization, human resource development, improved TB drug procurement, quality assurance of smear examination and operational research to improve TB control.

Major progress has been made since that time, including:³

- a vibrant international Stop TB partnership;
- several programmes with national TB partnerships;
- national DOTS expansion plans in all high-burden countries;
- the Global TB Drug facility (GDF);
- sustained interest of international policy-makers;

- mobilization of substantial financial resources through established mechanisms (e.g. development agencies) and new mechanisms (e.g. the Global Fund for AIDS, TB and Malaria);
- commitment of national public authorities to adoption and adaptation of international policies;
- implementation of case management in routine health services; and
- increased support for development of new diagnostics, drugs and vaccines.

However, key challenges remain and may not have been sufficiently addressed in the GDEP. This paper discusses these challenges.

Weakness of the core strategy

Prevention based on case management has never eliminated or eradicated any disease — only vaccine-based strategies have achieved this.⁴ Situating prevention in case management (i.e. in routine health services) means that all the challenges of establishing and maintaining quality health services (e.g. access, equity and competing priorities) must be faced. The focus on “downstream” interventions prioritizes case management and even the application of the currently available vaccine (which prevents serious forms of disease in small children but has not been demonstrated to prevent primary infection).⁵ This approach fails to address factors related to poverty, with which TB is intimately associated.

Sustaining ownership and empowerment

In fighting TB, economic arguments have been used to engage key stakeholders. These arguments are based on the relative cost-effectiveness of the interventions and the economic gains to be made from following the strategy. For example, the World Bank promoted the view that governments could not afford not to implement DOTS.⁶ Although this approach has been successful in certain locations, bilateral and multilateral agencies have sometimes undermined the economic argument by shifting responsibility for budgets for TB control from national to international sources.^{7,8} Ownership of the domain has consequently been taken up by interested parties at an international level, rather than by those primarily affected. This situation tends to disempower local and national stakeholders.

Addressing competing interests and fashions

Health services worldwide have limits on their resources, particularly where resources are scarce. Also, resources are not always allocated according to evidence, especially in poor and marginalized communities.⁹ Rather, they are often subject to special interests and fashions in the area of international development policy, with the only stable factor in such policy being the desire to change it.

The example of WHO reflects this tendency. When formed, the organization

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included a specialized TB unit.¹⁰ Efforts in TB control coincided with steady declines in TB mortality and morbidity in industrialized countries.¹¹ However, similar progress was not observed in low-income countries, and the approach was heavily criticized.¹² A subsequent shift of emphasis from specialized to generalized primary care services followed the adoption of the slogan “Health for all by the year 2000”.¹³ As the year 2000 approached, however, this slogan disappeared, and targeted approaches (to TB, malaria, tobacco and other specific issues) emerged and gained high visibility. If fashions change, will it be possible to provide the decades of commitment required to achieve the GDEP’s goals?

Stemming the tide of HIV

In some countries, particularly in southern sub-Saharan Africa, TB and HIV are closely linked; for example, in the highest-burden settings, 75% of TB patients are also living with HIV/AIDS.¹⁴ Due to the link between TB and HIV, sub-Saharan Africa is likely to supersede all other regions in the burden of TB over the coming decades.¹⁵

The trend of rising TB case rates can only be reduced if HIV infection rates are also reduced. The Stop TB Partnership (the organization that developed the GDEP) and its TB/HIV working group recognize this situation, but not all current approaches address the challenge. Failure to link efforts in TB control to those aimed at reducing HIV infection rates will undermine all other efforts to stop TB. Many countries have attempted to improve collaboration between TB and HIV services, but progress has been painfully slow and inadequate.¹⁶

Maintaining service quality, preventing drug resistance

The quality of care for TB patients is inextricably linked to the future of the TB epidemic.¹² By keeping patients alive but failing to cure them, poor treatment actually augments the spread of TB. Also, a high proportion of previously treated cases harbour drug-resistant bacilli and transmit infection in the community.^{17,18} Recently, there have been outbreaks of extensively drug-resistant (XDR) TB, even in locations that have supposedly adopted international recommendations for standard case management.¹⁹ Access to second-line medications and im-

proper use of these medications has not prevented, and may even have promoted, these outbreaks.

It is unclear how much the rather strict conditions of the DOTS strategy can be liberalized without adverse consequences. What is clear is that, in locations where the rather old-fashioned strict policies have been conscientiously followed (e.g. United Republic of Tanzania,²⁰ Benin²¹ and Nicaragua²²), the numbers of multidrug resistant (MDR) cases are low; whereas, in situations where only some elements of the strategy have been strictly adopted, MDR-²³ and XDR-TB¹⁹ have emerged. These findings suggest that strict policies are crucial in preventing emergence of drug resistance.

Such considerations have particular relevance where standard case management is provided in multiple sectors, particularly the private sector, where quality of services repeatedly has been shown to be deficient.^{24,25} Can the quality of such services be improved? And if so, can improved quality be sustained? In other conditions (e.g. asthma), standard case management (i.e. care based on guidelines) has been demonstrated to be the management of choice (i.e. the best standard of care), but although professional bodies and specialists subscribe to the theory, they rarely carry it out in practice.²⁶ Efforts to improve quality of care within the private sector have been initiated within WHO’s Stop TB Department; for example, through the publication of the International Standards for Tuberculosis Care.²⁷ Also, some studies suggest that quality of care can be improved through targeted interventions to encourage partnership.^{28,29} Ensuring the consistent delivery of high-quality of care at all levels of the health service and within all sectors will be a key challenge. If the GDEP plan (or the more recent Global Plan to Stop TB) has not sufficiently addressed this point, it will be a major challenge to the strategy.

Ensuring sufficient human resource capacity

The GDEP succeeded in mobilizing additional resources from a variety of sources, and many countries have been able to expand DOTS according to their 5-year plans, often creating interagency committees to improve coordination between the various stakeholders. Improving coordination, avoiding duplication of efforts and avoiding giving conflicting recom-

mendations will continue to be a challenge for all partners. Today, NTP managers spend much of their time writing funding proposals, preparing reports (in different formats for each donor) and organizing review visits for their multitude of partners. NTP managers and programme staff need to have enough time for activities critical to improving TB control.

The Cairo workshop identified the need to increase political commitment to secure adequate human resources and finances for all TB control components at national and sub-national levels.³⁰ Substantial funding has been obtained from many donors — in particular from the Global Fund.³¹ However, many countries still find it difficult to implement effective human resource development strategies and to secure sufficient funding for this purpose.³² Although training courses are offered at national and international levels, countries are struggling to retain qualified personnel. For example, qualified and well-trained staff often seek employment in the private sector or in international bodies, or migrate to industrialized countries.³³ Provision of additional funding can overwhelm some countries, particularly where absorption capacity is hampered by inadequate management systems.³⁴ Thus, reinforcement and maintenance of human resource capacity in technical and management domains probably represents the main challenge for TB control in the next decade.

Assuring quality of diagnosis

Establishment and implementation of quality assurance for diagnostic examination (sputum-smear microscopy) was one of the GDEP’s main goals. This basic test, which should be technically feasible at any location, is fundamental to a TB diagnostic service. Great progress has been made in establishing global consensus on methods for quality assurance of sputum-smear microscopy,³⁵ and a group of experts has been set up to develop improved tools and strategies for diagnostic services.³⁶ In spite of these advances, the quality of sputum-smear examination remains deficient in many (if not most) sites, and recommended programmes for quality assurance have not been widely implemented.³⁷

Current diagnostic procedures remain cumbersome and time-consuming.

Confirming a diagnosis by definitively demonstrating the presence of *Mycobacterium tuberculosis* continues to take days or weeks, and even sputum-smear microscopy may necessitate visits to health facilities over several days. The need for, and benefits of, new technology that can provide on-the-spot, reliable diagnostic tools are obvious.

Maintaining a critical spirit

A climate of critical reflection is necessary for effective and efficient public

health.³⁸ This can be achieved through an imbedded programme of operations research (another “plank” of the GDEP and important in the first formulation of the NTP’s ideal structure).³⁹ Although studies from a limited number of locations have been published over the past decade,^{40–42} the establishment and maintenance of operations research is rarely a routine activity within NTPs.

Implementation of routine standardized monitoring of diagnosis and treatment outcomes using cohort analy-

sis has helped to improve NTPs’ quality of services,⁴³ and has provided valuable information for operational planning and management.

Clearly, the GDEP and the Global Plan to Stop TB have made great strides towards reducing the huge burden to health caused by TB, but much more remains to be done if we are to overcome the challenges discussed here. ■

Competing interests: None declared.

Résumé

Evaluation critique du plan mondial d’élargissement de la stratégie DOTS

Le développement du plan d’élargissement de la stratégie DOTS a constitué une étape importante dans la lutte contre la tuberculose (TB) à l’échelle tant nationale que mondiale. Les principales difficultés à surmonter restent : la faiblesse d’une stratégie reposant sur la prise en charge des cas, la durabilité des engagements, la concurrence entre les diverses priorités, la menace

liée au VIH, le maintien de la qualité des soins, la prévention de la pharmacorésistance, la constitution de capacités dans le domaine des ressources humaines, l’amélioration du diagnostic et l’encouragement de la recherche opérationnelle. La capacité à faire face à ces difficultés est déterminante pour le succès ou l’échec du Plan « Mondial Halte à la tuberculose » 2006-2015.

Resumen

Evaluación crítica del Plan Mundial de Expansión del DOTS

La formulación del Plan de DOTS ha sido un hito de la lucha antituberculosa a nivel mundial y nacional. Entre los grandes retos que aún habrá que superar cabe citar la debilidad de una estrategia basada en el manejo de los casos, el mantenimiento del compromiso, la competencia de otras prioridades, la amenaza del VIH, el mantenimiento de la alta calidad de la atención y la

prevención de la farmacorresistencia, la creación de capacidad de recursos humanos, la mejora del diagnóstico y el fomento de las investigaciones operativas. La capacidad de afrontar esos desafíos determinará el éxito o el fracaso del Plan Mundial para Detener la Tuberculosis 2006–2015.

ملخص

تقييم ناقد للخطة العالمية لتوسيع استراتيجية المعالجة القصيرة الأمد تحت الإشراف المباشر

الجودة الرفيعة في إيتاء الرعاية، وأتقاء ظهور المقاومة للأدوية، وبناء قدرات الموارد البشرية، وتحسين التشخيص، وتفعيل البحوث الميدانية. إن القدرة على مواجهة هذه التحديات هي التي ستحدّد نجاح أو فشل الخطة العالمية لدر الس 2006 – 2015.

تعدّ الخطة العالمية لتوسيع استراتيجية المعالجة القصيرة الأمد تحت الإشراف المباشر من الملامح البارزة لمكافحة السل على الصعيد الإقليمي والوطني. إلا أن هناك تحديات لاتزال ماثلة أمامها، وهي الضعف الغالب على الاستراتيجية في كلّ من معالجة الحالات، وضمان استمرار الالتزام، والأولويات المتنافسة، وتهديدات الإيدز والعدوى بفيروسه، والمحافظة على

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