

Elimination of neglected tropical diseases in the South-East Asia Region of the World Health Organization

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Abstract The neglected tropical diseases (NTDs), which affect the very poor, pose a major public health problem in the South-East Asia Region of the World Health Organization (WHO). Although more than a dozen NTDs affect the region, over the past five years four of them in particular – leprosy, lymphatic filariasis, visceral leishmaniasis (kala-azar) and yaws – have been targeted for elimination. These four were selected for a number of reasons. First, they affect the WHO South-East Asia Region disproportionately. For example, every year around 67% of all new leprosy cases and 60% of all new cases of visceral leishmaniasis worldwide occur in countries of the region, where as many as 850 million inhabitants are at risk of contracting lymphatic filariasis. In addition, several epidemiological, technological and historical factors that are unique to the region make each of these four diseases amenable to elimination. Safe and effective tools and interventions to achieve these targets are available and concerted efforts to scale them up, singly or in an integrated manner, are likely to lead to success. The World Health Assembly and the WHO Regional Committee, through a series of resolutions, have already expressed regional and global commitments for the elimination of these diseases as public health problems. Such action is expected to have a quick and dramatic impact on poverty reduction and to contribute to the achievement of the Millennium Development Goals. This paper reviews the policy rationale for disease control in the WHO South-East Asia Region, the progress made so far, the lessons learnt along the way, and the remaining challenges and opportunities.

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 neglected tropical diseases (NTDs) are a group of infectious diseases which primarily affect the poorest sectors of society, especially the rural poor and the most disadvantaged urban populations.¹ Nearly one billion people in the world suffer from NTDs, which are referred to as “neglected” because they are characterized by little attention from policy-makers, lack of priority within health strategies, inadequate research, limited resource allocation and few interventions.²

While recently NTDs have been the focus of some attention globally, four of them continue to represent a major public health problem in the 11 countries comprising the South-East Asia Region (<http://www.who.int/about/regions/searo>) of the World Health Organization. The diseases in question are leprosy, lymphatic filariasis, visceral leishmaniasis (kala-azar) and yaws.

Regionally these diseases not only affect a large number of people and carry high mortality and morbidity; they also affect people's productive and social lives. Leprosy, lymphatic filariasis and yaws can cause disabilities and visible deformities that can lead those affected to be stigmatized, discriminated against and marginalized and thus kept from participating in normal family or community life or from earning their livelihoods in settings that are already poor in resources.^{3–5} Kala-azar is fatal if untreated. Women and children are at particularly high risk for these diseases, which have a negative impact on reproductive and general health and on nutritional status as

well.⁶ And yet opportunities to control them effectively exist because: (i) they are endemic only in limited areas, (ii) simple diagnostic tests and effective low cost treatments are available, (iii) primary health-care systems are under development in or near most of the endemic settings, and (iv) political commitment has been expressed. Consequently, progress towards eliminating these diseases as public health problems (i.e. reducing annual incidence to less than 1 per 10 000 population at the district or subdistrict level, depending on the country) is already under way.

Normative steps taken by the international community have contributed to such progress: the World Health Assembly passed resolutions for the global elimination of leprosy and lymphatic filariasis in 1991⁷ and 1997,⁸ respectively. In 2005, the health ministers of Bangladesh, India and Nepal signed a memorandum of understanding for joining efforts to eliminate kala-azar by the year 2015. In 2006, the WHO South-East Asia Regional Committee passed a resolution calling all Member States to intensify efforts towards achieving the goals of eliminating selected NTDs.⁹ As of today, much has been done but substantial challenges remain.

Disease burden and risk factors

Among the six WHO regions, the South-East Asia Region has the highest burden of leprosy, lymphatic filariasis and kala-azar. In addition, as many as 7000 new cases of yaws are estimated to occur annually, according to reports.¹⁰

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The prevalence of leprosy in the region has declined from 4.60 per 10 000 population in 1996 to 0.69 per 10 000 in early 2009. The detection of new cases has also declined from a peak of 4.78 per 10 000 population in 1998 to 0.96 per 10 000 in 2008; despite this, 67% of the leprosy cases detected globally in 2008 occurred in the WHO South-East Asia Region.¹¹

Lymphatic filariasis is endemic in the entire region except Bhutan and the Democratic People's Republic of Korea,¹² but it is concentrated in just six countries, namely Bangladesh, India, Indonesia, Myanmar, Nepal and Sri Lanka. Of the 1.3 billion people in the world who are at risk of contracting this disease, 851 million, or 66%, reside in this region, which was also home to about 50% of all the people infected in the world in 2008.¹³

Kala-azar is another serious disease of major public health importance in the region. About 500 000 new cases and 60 000 deaths occur every year and, in the absence of appropriate and timely treatment, most patients die.⁹ Three countries of the region – Bangladesh, India, and Nepal – together account for over 60% of all cases in the world and in these three countries, as many as 200 million people in 109 districts are at risk of contracting the disease. In addition, Bhutan has recently reported a few cases (unpublished data). Both kala-azar and lymphatic filariasis are vector-borne diseases causally linked with poor housing conditions.

Until recently, yaws was endemic in three countries of the region: India, Indonesia and Timor-Leste. However, India succeeded in eliminating this disease in 2006.¹⁴ Cases of yaws are now being reported from only 14 of Indonesia's 33 provinces and 6 of Timor-Leste's 13 districts. In 2008, around 6000 cases were reported in Indonesia. About 1000 annual cases are estimated to occur in Timor-Leste.¹⁵ Yaws primarily affects poor people living in rural areas with crowded living conditions, poor water supply and lack of sanitation. There is a saying that "where the road ends, yaws begins". It affects mostly young children, who end up disabled, stigmatized and poor and unable to complete primary school.¹⁶ As a result, they have poor intellectual development and reduced work and income opportunities in their adult life.

Elimination: the policy rationale

Currently, several factors make eliminating leprosy, lymphatic filariasis, kala-azar and yaws from the WHO South-East Asia Region attainable goals. Some of these factors are epidemiological, technological and historical, but the most important one is a high level of commitment from governments and partners, as articulated in the World Health Assembly and WHO Regional Committee resolutions noted earlier. Safe and effective diagnostic tools and interventions are available for the control of each of these diseases and they should now be scaled up. They include, for leprosy, multidrug therapy to treat and cure patients and reduce the reservoir of infection¹⁷; for lymphatic filariasis, mass drug administration of diethylcarbamazine and albendazole to reduce microfilaraemia levels and transmission rates; for kala-azar, the use of a simple rapid dipstick diagnostic screening test known as rK39 followed by treatment with an effective drug and vector control by indoor residual spraying (only these interventions are required because, unique to this region, there is no animal reservoir and humans are the only source of infection of this disease)¹⁸; and for yaws, the use of a single intra-muscular injection of long-acting benzathine penicillin to cases and their contacts to cure the disease and interrupt transmission.¹⁶ All endemic countries require improved infrastructure and additional human resources to deliver these recommended intervention strategies.

WHO is working closely with the endemic countries along with other partners such as The World Bank, the Special Programme for Research and Training in Tropical Diseases (sponsored by the United Nations Children's Fund [UNICEF], the United Nations Development Programme, The World Bank and WHO), The Nippon Foundation and the *Deutsche Gesellschaft für Technische Zusammenarbeit* (GTZ). For two of these diseases, free drug supply is now available: the global supply of multidrug therapy for leprosy is provided by Novartis (Basel, Switzerland), while albendazole, one of the two drugs required for mass drug administration to eliminate lymphatic filariasis, is provided by GlaxoSmithKline (Brentford, England) through WHO.

Progress towards elimination

The WHO South-East Asia Region has contributed substantially to the reduction of the global burden of leprosy. Of the more than 15 million cases already cured globally with multidrug therapy, 12.8 million were from this region and over 11.8 million from India alone. The region has made enormous efforts to eliminate leprosy, and the goal has been attained by all countries of the region except Timor-Leste.^{11,19,20} India has reached the elimination target but still bears the highest number of new cases reported annually worldwide, a reflection of its large population.

Eliminating lymphatic filariasis by 2020 is a goal for all countries of the WHO South-East Asia Region. According to WHO recommendations, the elimination strategy relies on the mass administration of diethylcarbamazine and albendazole to all individuals living in endemic areas, irrespective of their individual infection status, at regular annual intervals. A Regional Programme Review Group is in place to provide advice and support. Endemic areas have been fully mapped in all endemic countries of the region except Indonesia. In 2008, 425 million people in such countries, equivalent to 86% of those treated worldwide, were reached by mass drug administration exercises. Bangladesh and India contributed much to this achievement. Maldives, Sri Lanka and Thailand have already achieved elimination. An added benefit of elimination-related activities has been the control of soil-transmitted helminthic infections, such as those caused by roundworm, hookworm and whipworm, among the target population and particularly school-age children, who constitute the most vulnerable group and whose nutritional status and physical and cognitive development have improved as a result.^{15,21}

The kala-azar elimination programme is presently under way as a pilot exercise in 11 districts of India and, depending on the results obtained, will be expanded to all 52 endemic districts by the end of 2010. India, which is implementing both oral administration of miltefosine and indoor residual spraying, has established intersectoral coordination with the National Rural Health Mission and with the housing development sector. Bangladesh has not yet been able to procure quality

miltefosine or the rK39 test and has not decided on a policy on the use of insecticides. Nepal is using alphacypermethrin as an insecticide and intends to scale up its use to all endemic districts by the end of 2010. Vector control, along with information, education and communication activities, need to be bolstered in all three countries.

A yaws control programme was started in the region in 1952 with assistance from WHO and UNICEF. After remarkable initial success, complacency set in. Yaws control efforts were gradually abandoned in most countries, with the result that the disease re-emerged in the late 1970s. In 1996, yaws declined dramatically on account of newly intensified efforts in India, which declared its elimination in 2006. Indonesia has initiated a yaws elimination programme in four hyperendemic provinces and has completed the first round of active case searching and treatment, while in Timor-Leste yaws control is part of an integrated campaign that also targets other skin diseases, such as leprosy. Global cessation of transmission of yaws is expected by 2012.²²

Challenges and opportunities

The WHO South-East Asia Region has made good progress towards eliminating the targeted diseases from individual countries and decreasing their burden at a regional and global scale. However, important challenges still need to be addressed. Sustaining political commitment and providing adequate resources are of utmost importance, along with ensuring uninterrupted drug supplies and wider health service coverage, especially for currently underserved population groups. Strong and sustained political commitment and policies based on evidence are both crucial for the success of any disease elimination programme.

Inter-country cooperation in terms of exchanging information, learning from each others' experience, and working together in border areas can be extremely useful but does not always take place. Lack of resources is the single most important roadblock that keeps countries from achieving the elimination of targeted diseases. Resource mobilization, public-private partnerships and community mobilization are therefore important and must be prioritized. It will be necessary to

provide the mass media with accurate information about both the importance of eliminating these diseases and the effectiveness and safety of the control strategies and tools being used. Regular briefing of the media can increase community involvement in elimination programmes, reduce stigma and discrimination, and highlight the need for resources with which to eliminate these diseases that have been neglected until now. Community mobilization is also important, as is advocacy among general practitioners, traditional healers and community leaders.

Effective surveillance and monitoring are urgently needed, together with an evaluation system for tracking progress on a regular basis, especially for kala-azar and yaws, based on a set of indicators. The data so generated can then be used for advocacy and for developing appropriate policies and strategies. Pharmacovigilance and data on adverse reactions from the use of the newer drugs for treating kala-azar are also priorities. In addition, operational research is needed to generate evidence in support of the post-elimination strategy, including the integration of NTD control within primary health services and an analysis of the reasons for the low priority afforded to community mobilization and outreach activities.²³

Strengthening the integration of national disease control programmes within general health systems remains important. Intensified initiatives in many geographical areas can serve as entry points for strengthening primary health services and catalyse health-care development. Where health systems are weak, as is often the case in remote and border areas, these diseases remain undiagnosed and untreated.

Preventing stigma and discrimination is a remaining challenge, along with the social displacement of people affected by NTDs. Training for health staff may be required to increase their awareness of how stigma and discrimination in communities can lead families to discourage their relatives with disfiguring diseases from attending health services, particularly if they are disabled and require assisted travel.²⁴

Renewed efforts to eliminate NTDs should occur in ways that help strengthen health systems. For this reason, improved health services and access to drugs must be accompanied by

increased community awareness. Sustained advocacy, information, education and communication will be needed in many places.

In the long term it will be important to ensure the development of community-based programmes for the rehabilitation of disabled persons and their reintegration into their communities. Existing partnerships will need to be strengthened and new ones created. Gender issues will require greater attention, particularly where women fear to attend health services because a specific diagnosis can cause them to be rejected by their families and communities. Alliances will need to be established with community development organizations that address broader gender issues in affected communities.²⁵

On a more positive note, intensified efforts to eliminate the four diseases discussed in this paper will bring us closer to achieving the Millennium Development Goals and strengthen human rights. These diseases have serious consequences, particularly because those affected experience hunger and poverty and reduced access to education and employment. WHO has noted that "these diseases are central to human rights as they deal with issues related to poverty, discrimination and stigma as well as the right to health".² Moreover, the experience of the region, especially with yaws elimination, is now leading to a global initiative for interrupting transmission of yaws worldwide.

Conclusion

In the WHO South-East Asia Region, conditions are now in place to make it possible to eliminate leprosy, lymphatic filariasis, kala-azar and yaws. Yet ironically, success in the past has led to complacency and to the resurgence of disease. Thus, the most important challenge will be to continue good surveillance to determine whether these diseases remain in previously endemic areas, and to continue advocacy to ensure that political commitment remains strong and that these diseases continue to be granted the importance they deserve within the context of national health strategies. Ongoing monitoring, research and partnerships will be required. More resources need to be mobilized to build countries' capacity to provide appropriate therapy on a

sufficient scale. In global terms, the resources required are not so substantial, but in the poorest areas of some of the poorest countries of the region, finding adequate resources is an enormous challenge.

Eliminating leprosy, lymphatic filariasis, kala-azar and yaws will

greatly improve the lives of the poorest people and stimulate productivity and economic growth in remote, impoverished areas of the region. Ultimately, attempts at disease elimination will be most successful if accompanied by improved housing conditions, sanitation, nutrition and education, all of

which affect vector control and access to preventive measures. If all these goals can be achieved together, the most damaging effects of poverty will be overcome. ■

Competing interests: None declared.

Résumé

Élimination des maladies tropicales négligées dans la Région de l'Asie du Sud-est de l'Organisation mondiale de la Santé

Les maladies tropicales négligées (MTN) qui touchent les plus pauvres, posent un problème de santé publique majeur dans la région de l'Asie du Sud-est de l'Organisation mondiale de la Santé (OMS). Si plus d'une dizaine de ces MTN affectent la Région, quatre d'entre elles en particulier - la lèpre, la filariose lymphatique, la leishmaniose viscérale (kala-azar) et le pian - ont été visés par des efforts d'élimination au cours des cinq dernières années. Ces quatre maladies ont été sélectionnées pour un certain nombre de raisons. Premièrement, elles affectent l'Asie du Sud-est de manière disproportionnée. Chaque année, par exemple, environ 67 % des nouveaux cas de lèpre et 60 % des nouveaux cas de leishmaniose viscérale se déclarant dans le monde apparaissent dans un des pays de cette région, où pas moins de 850 millions d'habitants sont exposés à un risque de filariose lymphatique. En outre, plusieurs facteurs épidémiologiques, technologiques et historiques propres à la région rendent chacune de ces

quatre maladies susceptibles d'élimination. Des interventions et des outils sûrs et efficaces sont disponibles pour atteindre ces objectifs et il est probable que des efforts concertés pour les étendre à plus grande échelle, de manière indépendante ou intégrée, seraient couronnés de succès. L'Assemblée mondiale de la Santé et le Comité régional de l'OMS, à travers une série de résolutions, ont déjà formulé des engagements régionaux et mondiaux en faveur de l'élimination de ces maladies en tant que problèmes de santé publique. On s'attend à ce que cette action ait un impact rapide et considérable en termes de réduction de la pauvreté et qu'elle contribue à la réalisation des Objectifs du Millénaire pour le développement. Le présent article examine les arguments politiques en faveur de la lutte contre ces maladies dans la Région OMS de l'Asie du Sud-est, les progrès enregistrés à ce jour, les enseignements tirés tout au long de cette expérience et les difficultés et opportunités restantes.

Resumen

Eliminación de las enfermedades tropicales desatendidas en la Región de Asia Sudoriental de la Organización Mundial de la Salud

Las enfermedades tropicales desatendidas afectan a las poblaciones más pobres y representan un grave problema de salud pública en la Región de Asia Sudoriental de la Organización Mundial de la Salud (OMS). Aunque la región se ve afectada por más de una docena de ellas, en los últimos cinco años, cuatro de esas enfermedades en particular -la lepra, la filarías linfática, la leishmaniasis visceral (kala-azar) y el pian- han sido seleccionadas para su eliminación. Se han elegido esas cuatro enfermedades por varias razones. En primer lugar, afectan a la Región de Asia Sudoriental de manera desproporcionada. Por ejemplo, cada año, alrededor del 67% de los casos nuevos de lepra y el 60% de los casos nuevos de leishmaniasis visceral surgidos en todo el mundo se registran en países de la región, donde 850 millones de habitantes están expuestos a la filarías linfática. Además, diversos factores epidemiológicos, tecnológicos e históricos peculiares de esa región hacen que cada una de esas

cuatro enfermedades se presten a la eliminación. Se dispone de instrumentos e intervenciones seguros y eficaces para alcanzar esas metas, y los esfuerzos concertados concebidos para expandirlos, individualmente o de forma integrada, tienen muchas probabilidades de éxito. La Asamblea Mundial de la Salud y el Comité Regional de la OMS, a través de una serie de resoluciones, ya han expresado su compromiso regional y mundial de eliminar esas enfermedades como problemas de salud pública. Cabe esperar que esas medidas tengan un impacto rápido y radical en la reducción de la pobreza y contribuyan a la consecución de los Objetivos de Desarrollo del Milenio. En este artículo se analizan las razones normativas de las actividades de control de las enfermedades en la Región de Asia Sudoriental de la OMS, los progresos realizados hasta la fecha, las lecciones aprendidas a lo largo del camino, y los problemas y oportunidades pendientes.

ملخص

التخلص من الأمراض المدارية المهملة في إقليم جنوب شرق آسيا لمنظمة الصحة العالمية

الوبائية والتقنية والتاريخية المرتبطة على نحو فريد بهذا الإقليم تجعل التخلص من هذه الأمراض الأربعة يسيراً. كما تتوافر الأدوات والمدخلات الآمنة والفعالة لتحقيق هذه الأهداف، ومن شأن الجهود المكثفة التي ترمي إلى النهوض بهذه الأدوات والمدخلات، سواء فردياً أو على نحو متكامل، أن تحقق النجاح في هذا المسعى. ومن المتوقع لهذه الإجراءات العملية أن تؤثر تأثيراً سريعاً وملموساً في خفض معدلات الفقر وأن تساهم في بلوغ المرامي الإنمائية للألفية. وتستعرض هذه الورقة السياسات الرشيدة لمكافحة الأمراض في إقليم جنوب شرق آسيا التابع لمنظمة الصحة العالمية، وما تم إحرازه من تقدم حتى الآن، والدروس المستفادة وما تبقى من تحديات وفرص على الطريق.

تمثل الأمراض المدارية المهملة التي تؤثر على أشد الناس فقراً، مشكلة أساسية من مشكلات الصحة العمومية في إقليم جنوب شرق آسيا لمنظمة الصحة العالمية. وبالرغم من وجود أكثر من 12 مرضاً من هذه الأمراض تؤثر على الإقليم، فقد استهدف أربعة أمراض فقط للعمل على التخلص منها واستئصالها وهي الجذام، وداء الفيلاريات اللمفي، وداء الليشمانيات الحشوي (كالا زار)، والداء العليقي (يون). ويعود اختيار هذه الأمراض الأربعة لعدة أسباب. فهي أولاً تؤثر بنسب مختلفة على إقليم جنوب شرق آسيا، فعلى سبيل المثال، في كل عام تقع في بلدان هذا الإقليم حوالي 67% و 60% على التوالي من الحالات الجديدة في العالم لكل من الجذام، وداء الليشمانيات الحشوي، ويظل حوالي 850 مليوناً من السكان معرضين لخطر الإصابة بداء الفيلاريات اللمفي. وعلاوة على هذا، فإن الكثير من العوامل

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