Mobile clinics for antiretroviral therapy in rural Mozambique

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Introduction

The high burden of human immunodeficiency virus (HIV)-related services continues to challenge Mozambique’s health-care infrastructure, especially in the country’s rural regions. The roll-out of mobile clinics to broaden health-service coverage received considerable attention in the 1960s and 70s, but was not adopted on a permanent basis due to logistic challenges. Today, in Mozambique, mobile clinic strategies are again being rolled-out to increase coverage with antiretroviral therapy (ART). Here, we report on 18 months of experience using one mobile clinic in Zambézia Province, Mozambique.

Local setting

In 2009, Mozambique had an HIV prevalence of 11.5%, with 1.4 million people being HIV positive. Although there is consistent government support of ART programmes, national coverage remains low, with less than 15% of those eligible having received ART by December 2012. ART scale-up has posed challenges for Mozambique’s under-capacitated health-care infrastructure. If Mozambique is to achieve a national target of 80% ART coverage by 2015, then scale-up efforts must continue to be strengthened.

The magnitude of the HIV epidemic is especially evident in Zambézia Province, which is Mozambique’s second largest province and home to 4 million people. Zambézia has low literacy, poor maternal and child health indices, high rates of tuberculosis and malaria, high malnutrition, and comparatively low adult and paediatric ART coverage.

Friends in Global Health, which is affiliated with the Vanderbilt Institute for Global Health, has been providing technical assistance for HIV in Zambézia since 2007. In 2009, Friends in Global Health partnered with the Real Medicine Foundation to deploy a mobile clinic built on a four-wheel drive truck that was initially used for short-term HIV counselling and testing campaigns and for emergency response following natural disasters. The clinic is 6.3 m in length and able to operate in poor road conditions; it comprises two rooms inside the vehicle cage – one equipped for clinical consultations and the other as a pharmacy, with two side tents that provide space for HIV counselling and testing (Fig. 1).

In early 2012, Mozambique’s Ministry of Health, in conjunction with its partners from the President’s Emergency Plan for AIDS Relief (PEPFAR), initiated an acceleration plan for further scale-up of the country’s HIV programmes, to overcome the low ART coverage. Since April 2012, we have used funds from the Real Medicine Foundation and PEPFAR to expand ART via the mobile clinic in the district of Namacurra, Zambézia Province. This district has approximately 125 425 adults, 15 803 of whom are infected with HIV, based on an estimated 2009 HIV prevalence of 12.6%.

Approach

The Ministry of Health acceleration plan included expansion of ART services in Namacurra from two clinics in January 2013 to seven by the end of 2013. Before expansion, many clinics required more and better-trained staff and building rehabilitation, presenting a bottleneck to scale-up of services. To achieve service initiation within the 2013 timeframe, strategies were designed for using the mobile clinic to enable rapid expansion.

At first, the mobile clinic acts to reinforce the fixed clinic, providing temporary space for services while necessary changes at the facility are completed. Services offered by the mobile clinic
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Include HIV care and treatment; point-of-care measurements of CD4+ T lymphocyte count and haemoglobin; activities to address retention in care before and after ART initiation; tuberculosis diagnosis and care; management of malaria, diarrhoea and malnutrition; and targeted maternal and child health care. The mobile clinic staff serves as direct health-care providers and they also train and mentor staff of the fixed clinic through a learn-by-doing approach in which mobile clinic and fixed-site clinicians work side-by-side in the care and treatment of HIV-positive patients, including pregnant woman and exposed children. This mentored training also focuses on aspects of HIV service functionality, such as patient chart documentation and laboratory and pharmacy logistical needs. Additionally, they actively collaborate with community organizations to ensure that patients have access to HIV-prevention services, including educational materials, condoms, referral for male circumcision, psychosocial support, nutrition counselling, support for orphans and vulnerable children, and home-based care if needed.

The mobile clinic is staffed by a non-physician health officer, a maternal child health nurse, a pharmacy technician, a lay counsellor, and a driver, all hired by Friends in Global Health. It functions from Monday to Thursday, and alternates weekly between two fixed clinics, thus spending 8 days per month at each site.

Relevant changes
As of 31 March 2012, Namacurra offered HIV services at only two of its 10 clinics (Namacurra Capital and Macuze), and reported 2146 patients actively enrolled in HIV care. In April 2012, two peripheral clinics – Mixixine and Malei – were chosen to receive initial mobile clinic support. When the clinics were considered to be self-sufficient, the mobile clinic moved from Mixixine to Furquia in February 2013 and from Malei to Mbaua in August 2013. Between April 2012 and September 2013, 4832 new HIV patients were enrolled in six clinics; 1223 of them were enrolled at the four clinics that received active support from the mobile clinic (Table 1).

Start-up process
At each site, HIV services were launched with a health fair, to encourage community acceptance. During the fair, community leaders were invited to speak about the arrival of HIV services and the importance of being tested, initiation of treatment and adherence. Community theatre groups performed skits about HIV and other health issues; voluntary counselling and testing was offered; and nutrition education was shared.

Laboratory testing
Laboratory testing capacity in Zambézia Province continues to be a limitation for efficient patient care. For Namacurra Capital and Macuze (i.e. ART sites not supported by the mobile clinic), samples for CD4 counts, haematology and biochemistry are transported daily to the district capital laboratory. However, with

Fig. 1. A mobile clinic, Mozambique, 2013

Table 1. Human immunodeficiency virus care and treatment, Namacurra District, Mozambique, April 2012 to September 2013

<table>
<thead>
<tr>
<th>Site</th>
<th>Period for mobile clinic support</th>
<th>No. of patients active in care or treatment before mobile clinic implementation</th>
<th>No. of newly enrolled patients in care or treatment ^</th>
<th>With mobile clinic present</th>
<th>After departure of mobile clinic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed health-facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Namacurra Capital</td>
<td>No mobile clinic</td>
<td>1421</td>
<td>NA</td>
<td>NA</td>
<td>2209</td>
<td></td>
</tr>
<tr>
<td>Macuze</td>
<td>No mobile clinic</td>
<td>725</td>
<td>NA</td>
<td>NA</td>
<td>1155</td>
<td></td>
</tr>
<tr>
<td>Mobile clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixixine</td>
<td>April 2012 to February 2013</td>
<td>0</td>
<td>360</td>
<td>235</td>
<td>595</td>
<td></td>
</tr>
<tr>
<td>Malei</td>
<td>April 2012 to August 2013</td>
<td>0</td>
<td>423</td>
<td>10</td>
<td>433</td>
<td></td>
</tr>
<tr>
<td>Furquia</td>
<td>February 2013 to present</td>
<td>0</td>
<td>360</td>
<td>NA</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>Mbaua</td>
<td>August 2013 to present</td>
<td>0</td>
<td>80</td>
<td>NA</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Total no.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2146</td>
</tr>
</tbody>
</table>

\^ | As of 1 April 2012.

\^ | April 2012 to September 2013.

\^ | Data were obtained between February and September 2013.

\^ | Data were obtained between August and September 2013.

NA: not applicable.
the initiation of the ART expansion plan, this system for transport of samples was unable to meet the increased demand. In response, the mobile clinic was equipped with a point-of-care CD4 machine, a haemoglobinometer and rapid tests for HIV, malaria and syphilis, so that tests could be run on-site.

Training on phlebotomy and interpretation of laboratory results was provided through a learn-by-doing approach towards the collection of samples and the running of CD4, haemoglobin and various other rapid tests. This mentored training was running throughout the time the mobile clinic remained at the fixed-site. Additionally, joint planning exercises were performed to incorporate the fixed-site clinic into the laboratory sample transport system, thus ensuring continuity of services after the mobile clinic moved on.

Logistic support for pharmacies

The mobile clinic arrived at the site each day stocked with the necessary antiretroviral medications, tuberculosis medications and medications for common opportunistic infections. All other medications used at the fixed clinic were supplied through the Ministry of Health’s routine channels for drug distribution. The mobile clinic pharmacist provided mentored training on the appropriate use of these medications, documentation and calculation of future stock needs. This ensured that, by the time the mobile clinic moved on to the next site, the fixed clinic had been incorporated into the provincial HIV drug supply network.

Counselling and support

The lay counsellor was responsible for performing voluntary counselling and testing, enrolling patients into the HIV services, and linking patients with community organizations to ensure delivery of additional services, as appropriate.

Lessons learnt

The provision of space and personnel through the mobile clinic allowed the district of Namacurra to instantly start expanding the programme to high-priority peripheral clinics. Overall, we feel that this strategy was successful in achieving the goal of rapid HIV service expansion in Namacurra; however, there were notable challenges. The key lesson learnt about programme start-up was the importance of having an open collaborative partnership with district health authorities and with local leaders from the communities surrounding the clinics. Also fundamental from the beginning was engagement with health authorities to map out the resources needed for successfully transitioning activities from the mobile clinic staff to the district clinic staff.

The ART acceleration plan established for the province was quite ambitious and constrained more rapid expansion of chronic disease care for those infected with HIV. In the context of these challenges, deployment of a mobile clinic created a short-term solution, enabling services to be provided while the fixed clinics were refurbished and staff trained.

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Competing interests: None declared.

Conclusion

By using the mobile clinic strategy for ART expansion, Namacurra was able to expand provision of HIV care services from two to six (of a desired seven) clinics by September 2013. Following this pilot phase, in June 2013, Friends in Global Health started to deploy two additional mobile clinics in a further two districts of Zambezia Province, using the same strategy that had been employed in Namacurra. Scale-up is currently underway in provinces across the country. Long-term PEPFAR funding is not guaranteed; nevertheless, this strategy will assist the Ministry of Health’s expansion plan for HIV services in the short-term, and should require support for only a few years.

Our experience reflects the realities of severe resource constraints in one of the world’s poorest nations. Manpower shortages and infrastructure limitations constrain more rapid expansion of chronic disease care for those infected with HIV. In the context of these challenges, deployment of a mobile clinic created a short-term solution, enabling services to be provided while the fixed clinics were refurbished and staff trained.

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Lessons from the field

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Dispensaires mobiles pour le traitement antirétroviral dans le Mozambique rural

Problème
Malgré les 7 années d’investissement du Plan d’urgence du Président des États-Unis d’Amérique pour la lutte contre le SIDA (PEPFAR), l’expansion des services de lutte contre le virus de l’immunodéficience humaine (VIH) est toujours un défi pour les infrastructures de soins de santé du Mozambique, en particulier dans les régions rurales du pays.

Approche
En 2012, dans le cadre d’un plan d’accélération pour les soins et le traitement contre le VIH, le district de Namacurra a utilisé une stratégie de dispensaires mobiles pour fournir une main-d’œuvre temporaire et de l’espace physique afin d’étendre les services de lutte contre le VIH à 4 dispensaires périphériques ruraux. Cet article décrit la stratégie déployée, l’assimilation de ces services et les principaux enseignements tirés du cours des 18 premiers mois de mise en œuvre.

Environnement local
En 2012, la population adulte de Namacurra était estimée à 125 425 personnes, et on estimait que 15 803 personnes étaient infectées par le VIH. Malgré un soutien constant des programmes de traitement antirétroviral (TAR) de la part du gouvernement, la couverture nationale reste faible, avec moins de 15% des personnes éligibles ayant reçu un TAR en décembre 2012.

Changements significatifs
Entre avril 2012 et septembre 2013, le district de Namacurra a inscrit 48 322 nouveaux patients au programme de soins et de traitement contre le VIH. En utilisant la stratégie de dispensaires mobiles pour étendre le TAR, le district a pu développer la fourniture de TAR de 2 à 6 dispensaires (pour un nombre souhaité de 7) en septembre 2013.

Leçons tirées
Les stratégies de dispensaires mobiles pourraient rapidement étendre les soins et les traitements contre le VIH dans les endroits sous-financés par des moyens qui renforcent les capacités locales et qui sont durables pour les systèmes de santé locaux. Les dispensaires servent au mieux de transition vers l’amélioration des capacités dans les services de site fixe.

Résumé

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Резюме

Передвижные клиники для проведения антиретровирусной терапии в сельской местности Мозамбика

Проблема
Несмотря на инвестиции, которые в течение семи лет выделялись в рамках Чрезвычайного плана Президента США по борьбе со СПИДом (PEPFAR), распространение услуг по борьбе с вирусом иммунодефицита человека (ВИЧ) продолжает оставаться проблемой для инфраструктуры здравоохранения Мозамбика, особенно в сельских регионах страны.

Путь
В 2012 году в рамках Национального плана по активизации ухода и лечения ВИЧ-инфекции в районе Намакура была использована стратегия передвижных клиник, которые предоставляли временный персонал и физическое пространство для расширения ассортимента услуг в четырех сельских периферийных клиниках. В этой статье описывается
References