How to establish a successful revolving drug fund: the experience of Khartoum state in the Sudan

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Problem During the 1990s, the Sudan began several initiatives to establish new medicine-financing mechanisms as part of the health reform process. Initial seed stocks were provided to each hospital. Unfortunately these facility-based funds did not regenerate and the hospitals were left without funds for medicines. The Revolving Drug Fund (RDF) was established in 1989 to facilitate access to medicines in health facilities in Khartoum state.

Approach This study used quantitative and qualitative research techniques to collect data from health-care providers and users to evaluate the experience of operating an RDF in Khartoum state. Data from personal observations and from archival and statistical records were also analysed. Seven health facilities were sampled for this research.

Local setting The Ministry of Health has a policy to expand the RDF to the whole country and has already commenced roll-out to seven more states. This policy is based on the experience of the RDF within Khartoum state.

Relevant changes Khartoum state has a high (97%) level of availability of essential medicines and this is attributed to the RDF. The RDF medicines were mostly considered affordable by users and very few (6%) patients failed to obtain the prescribed medicines for financial reasons.

Lessons learned The RDF could be successfully replicated in other states of the Sudan and in low-income countries with similar contexts on condition that they meet success factors, such as gradual implementation, political commitment and availability of hard currency.

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

One of the methods for financing medicines is a Revolving Drug Fund (RDF) in which, after an initial capital investment, drug supplies are replenished with monies collected from the sales of drugs.[1] The RDF of the Ministry of Health in Khartoum state, the Sudan, was implemented with the financial support of Save the Children (in the United Kingdom) to improve chronic shortages of medicines in public health centres. The project's expected outcomes also include establishing an effective self-sustaining medicine supply system and promoting community participation in providing health care. After the first capital investment was made by Save the Children (United Kingdom) in 1989, the RDF used its revenues of pharmaceutical sales to procure more medicines.

There is limited evidence available concerning the effects of RDFs on utilization of public health-care facilities and it is mainly from short-term, small-scale, and often externally funded projects, from the northwest province of Cameroon,[2] Ghana,[3] Vientiane municipality in the Lao People's Democratic Republic,[4] Nigeria,[5] Viet Nam[6] and Zimbabwe.[7] These studies did not give a comprehensive evaluation of the projects that were assessed. This paper aims to highlight the findings of a recent evaluation study of the RDF in Khartoum state. It also presents several lessons that could be learned from this experience.

Methods

Interviews were conducted with 14 senior policy-makers at the Ministry of Health to explore their perceptions about the effects of the RDF on accessibility to medicines and factors that have determined the survival of the RDF. A total of 27 practitioners were also interviewed to gather information about the availability of quality medicines.

The qualitative information was cross-checked with quantitative data collected from 93 patients and 93 households from the catchment areas of selected health facilities. A feasible sample size was set in terms of the available time and resources. In addition, archival records were verified to enable the gathering of data about availability of medicines. Finally, systematic observations were conducted using checklists to check the availability of medicines during visits to health facilities. This information was collected from two sets of health facilities. The RDF facilities comprised one teaching hospital, one rural hospital and three health centres distributed in rural and urban areas. The non-RDF health facilities (control group) included the biggest referral hospital in the Sudan and one rural health centre.

Ethical considerations

Before starting the data collection, ethical clearance was obtained from the Ministry of Health research ethics committee. Permission was sought from interviewees for their participation.

Results

The interviews with the policy-makers and practitioners revealed that the RDF is responsible for maintaining a regular supply of medicines in its health facilities compared with non-RDF ones.

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The health facilities survey showed that, from a total of 48 respondents who visited RDF health facilities, almost 85% bought their drugs from the RDF pharmacy. Only 8% failed to fill their prescription using RDF because the medicines were not available. The average availability rate of key items, which were determined before the fieldwork, was greater (97%) in the RDF facilities than in non-RDF facilities (86%).

The RDF has strongly improved geographical equity of access to medicines. It has expanded from a project designed to supply only 60 health centres to an independent foundation responsible for the distribution of pharmaceutical products to almost all Ministry of Health facilities in Khartoum state. Our quantitative findings revealed that most of the sampled households were located > 5 km from the nearest RDF facility. As a result, the RDF has met the recommended goal of treating 5.9 million patients in the past 2 years. The RDF medicines were usually considered affordable by users. The average cost of a prescription (3.01 Sudanese pounds) at the RDF facilities amounted to only 2% of the lowest monthly government salary.

This evaluation identified some areas of weaknesses that still need to be considered to ensure the RDF's sustainability. This study showed that 6% of prescriptions presented to selected RDF health facilities were not dispensed for financial reasons. The RDF also failed to extend access in geographical terms: 26% of health centres and 200 dispensaries in rural areas in Khartoum state still do not have the RDF. Administrators of RDF health facilities or neighbourhood health committees have no role in the financial management of the RDF at their facilities.

Table 1. **Summary of 10 lessons learned from the RDF experience in Khartoum state, the Sudan**

	Elements	Outcomes
1	Substantial investments	• helped the RDF to absorb devaluation loss • RDF maturing to be smoothly handed over
2	Gradual implementation	• allowed time for necessary preparation • testing of drug supply and cash collection systems • proper training of staff
3	Management style	• adopting transparency • flexible organization structure • business-oriented management • joint style between national Ministry of Health and expatriate Save the Children (United Kingdom) staff
4	Political commitment	• tax and import duty exemption • independent account • import licence exemption • monopoly
5	Currency swap agreement	• safeguards against devaluation • permits importation of low cost and quality medicines • high mark-up on cost covers the RDF operating expenses while keeping retail price lower
6	Price revision	• protecting the RDF against devaluation • keep pace with market price • maintain users ability to pay
7	Community acceptance	• increases RDF turnover • permits replenishment of exhausted stocks • avoids funds being tied-up • revenue available to cover RDF operating expenses
8	Focus on common diseases	• shortlist for treatment of common diseases • avoid the wastage of limited resources • increases coverage by purchasing big quantities
9	Reliable supply system	• regular availability of medicines • low cost medicines • maximizing of RDF sales • allows the RDF to make medicines regularly available
10	Supervision	• prohibiting medicine leakage • 100% cash collection rates • reduces losses due to expiration and deterioration of medicines

RDF, revolving drug fund.

Discussion

Several lessons have been learned from the experience in Khartoum state (Table 1). These lessons were distilled from interviews with policy-makers in considering the factors that often cause RDFs to fail to generate sufficient revenues to replenish their stocks and, in effect, to revolve.[1]

It took 4 years of preparation by Save the Children (United Kingdom) and the Ministry of Health before the RDF was introduced in late 1989. Given the time required to implement the RDF, it is clear that the experience and logistic input of Save the Children (United Kingdom) was of paramount importance. It is therefore essential that the cooperation of international non-governmental organizations should not be underestimated in the development of RDF programmes.

Substantial investment by Save the Children (United Kingdom) has enabled the RDF to achieve its goals. According to its obligations set out in the agreement with the government, Save the Children (United Kingdom) provided the capital seed stock of medicines that helped the RDF to absorb its first huge loss (46% of the invested capital) that occurred as a result of local currency liberalization in 1992.

Political commitment allowed the RDF to have a separate account so that its managers have a free hand in keeping generated revenues out of public treasury regulation. Therefore one of the important lessons to be learned from the RDF in Khartoum state is that revenues generated from medicine sales should be kept in the RDF and entirely excluded from the Ministry of Finance

budget. The RDF also enjoys the benefits of a strong political commitment in terms of tax exemption and import licence exemption.

This study reveals that applying a commercial style of business management, such as on employment contracts, was not only possible and accepted within a public sector setting, but resulted in control over operations and reduction of risk. These measures also resulted in preserving the entity of the RDF. In addition, the RDF needs to recruit staff with expertise in finance, accountancy and private sector experience. This enables the RDF to establish a profit and loss account on a commercial basis.

The Currency Swap Agreement signed between the Government of Sudan and Save the Children (United Kingdom) enabled the RDF to have access to hard currency at official rates. The lesson to be learned is that donors and development organizations wishing to set up effective RDFs may need to be innovative in responding to constraints that might arise. Access to foreign currency is one such constraint. However, by setting up this currency swap mechanism, to which both the government of Sudan and Save the Children (United Kingdom) were committed, the constraint was overcome.

To ensure the RDF's success, reliable sources of quality medicines must be identified. The drug procurement strategy was based on the annual purchase of a large quantity of drugs and on responding to situations of stock-out and emergencies. All RDF facilities receive their medicines regardless of their ability to make a payment at the time of ordering. This policy ensured that no health facility operated without medicines. In the RDF pharmacies, medicines are dispensed with cash payments only with no exemption allowed.

To make medicines affordable, their cost has to be subsidized through the sale of cheaper drugs on the RDF list. To cover the potential loss, and to generate more funds for the continued supply of the expensive drugs, the cost of the cheaper medicines was always kept as low as possible to maintain their high turnover. The centralized system has enabled the RDF to have a standardized medicine list for each level, bulk purchase for more than 130 health facilities and a uniform price system.

Monitoring, evaluation and reporting on project activities at the RDF facilities have been performed by supervision teams in accordance with a stated list of performance targets. The supervision teams also move medicines that are nearing their expiry date from over-stocked facilities to under-stocked ones. In addition, the supervision teams collect revenue and monitor the financial status of each RDF pharmacy.

The increased use of RDF health centres suggests that people are prepared to go to a local health centre rather than to referral hospitals provided that medicines are available there. The lesson to be learned is that introducing a RDF to enhance the utilization of cost-effective primary health care facilities requires concomitant improvement in the quality of health care provided at these facilities. In addition, community acceptance increases medicine sales and, consequently, the ability of the RDF to replenish used stocks and to meet its operating expenses.

Conclusion

The RDF in Khartoum state has fulfilled its original mandate and could be successfully replicated in other states of the Sudan and in countries with similar contexts. The success factors reported in this evaluation are necessary to secure survival of the RDF. ■

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Résumé

Comment mettre en place avec succès un fonds renouvelable pour l'achat des médicaments : expérience de l'Etat de Khartoum au Soudan

Problématique Au cours des années 90, le Soudan a lancé plusieurs initiatives pour établir de nouveaux mécanismes de financement des médicaments dans le cadre du processus de réforme du système de santé. Des stocks de départ ont été fournis à chaque hôpital. Malheureusement, ces fonds établis dans des établissements de santé ne se sont pas régénérés et les hôpitaux sont restés sans financement pour leurs médicaments. Le Fonds renouvelable pour l'achat de médicaments (RDF) a été mis en place en 1989 pour faciliter l'accès aux médicaments dans les établissements de soins de l'Etat de Khartoum.

Démarche La présente étude a utilisé des techniques quantitatives et qualitatives pour recueillir des données auprès des prestateurs de soins et des usagers, en vue d'évaluer l'expérience acquise avec l'exploitation du RDF dans l'Etat de Khartoum. Des données provenant d'observateurs individuels, d'archives et d'enregistrements statistiques ont aussi été analysées. La disponibilité des médicaments a été contrôlée dans sept établissements de soins.

Contexte local Le Ministère de la santé s'est fixé comme politique de développer le RDF dans l'ensemble du pays et a déjà commencé à étendre ce dispositif à sept Etats supplémentaires. Cette politique repose sur l'expérience acquise avec le RDF dans l'Etat de Khartoum.

Modifications pertinentes L'Etat de Khartoum présente un taux élevé (97 %) de disponibilité des médicaments essentiels et cette situation est attribuée au RDF. Les médicaments bénéficiant du RDF sont pour la plupart considérés comme abordables par les utilisateurs et très peu de malades (6 %) ne peuvent obtenir les médicaments qui leur sont prescrits pour des raisons financières.

Enseignements tirés Le RDF pourrait être transposé avec succès dans d'autres Etats du Soudan et dans des pays à faible revenu offrant un contexte similaire, sous réserve que certaines exigences nécessaires à son succès soient remplies, telles qu'une mise en œuvre graduelle, un engagement politique et la disponibilité d'une monnaie forte.

Resumen

Cómo establecer un fondo rotatorio para medicamentos: la experiencia del Estado de Khartoum, Sudán

Problema Durante los años noventa el Sudán emprendió varias iniciativas para establecer nuevos mecanismos de financiación de los medicamentos como parte de su proceso de reforma sanitaria. Se proporcionó una reserva inicial a cada hospital, pero lamentablemente esos fondos basados en los servicios no se repusieron y los hospitales se quedaron sin medios para adquirir fármacos. En 1989 se creó el Fondo Rotatorio para Medicamentos (FRM) al objeto de facilitar el acceso a los fármacos en los servicios de salud del Estado de Khartoum.

Enfoque Se emplearon técnicas cuantitativas y cualitativas para reunir datos de los proveedores de atención y los usuarios a fin de evaluar la experiencia de manejo de un FRM en el Estado de Khartoum. Se analizaron también datos procedentes de observaciones personales y de archivos y registros estadísticos. La investigación se llevó a cabo con una muestra de siete centros de salud.

Contexto local El Ministerio de Salud ha adoptado la política de expandir el FRM a todo el país y ha iniciado ya el despliegue del sistema a otros siete Estados. Dicha política está basada en la experiencia del FRM en el Estado de Khartoum.

Cambios destacables El Estado de Khartoum ofrece una alta disponibilidad (97%) de medicamentos esenciales, lo que se atribuye al FRM. Los medicamentos conseguidos mediante ese sistema fueron considerados en su mayoría asequibles por los usuarios, y fueron muy pocos (6%) los pacientes que no lograron obtener los medicamentos prescritos por razones financieras.

Enseñanzas extraídas El FRM se podría reproducir eficazmente en otros Estados del Sudán y en países de bajos ingresos en circunstancias similares a condición de que se den algunos factores favorables como son una implementación progresiva, el compromiso político y la disponibilidad de una moneda fuerte.

ملخص

كيف يمكن إنشاء صندوق دائر ناجح للأدوية: تجربة ولاية الخرطوم، بالسودان

المشكلة: بدأ السودان، خلال حقبة التسعينات، وفي إطار عملية الإصلاح الصحي، تنفيذ عدة مبادرات لإنشاء آليات جديدة لتمويل الأدوية. وقد زُوِّد كل مستشفى برصيد مبدئي من الأدوية، إلا أن الاعتمادات المالية الخاصة بهذه المرافق لم يتم، للأسف، تجديدها، وتُركت المستشفيات دون أموال لتدبير الأدوية. لذلك، فقد أنشئ الصندوق الدائر للأدوية في عام 1989 من أجل تيسير الحصول على الأدوية في المرافق الصحية بولاية الخرطوم.

الأسلوب: استخدمت في هذه الدراسة أساليب بحثية كمية ونوعية لجمع البيانات من مقدمي ومستخدمي خدمات الرعاية الصحية وذلك لتقييم التجربة الخاصة بعمل الصندوق الدائر للأدوية في ولاية الخرطوم. وحللت كذلك البيانات المستقاة من الملاحظات الشخصية ومن سجلات المحفوظات والسجلات الإحصائية، واختير سبعة مرافق صحية كعينة لهذا البحث.

المرفق المحلي: لدى وزارة الصحة سياسة لمد نطاق الصندوق الدائر للأدوية ليشمل القطر بكامله، وبدأ تعميمه بالفعل في سبع ولايات. وترتكز هذه السياسة على تجربة الصندوق الدائر للأدوية في ولاية الخرطوم.

التغيرات ذات العلاقة: تتمتع ولاية الخرطوم بمعدل مرتفع (97%) لتوفر الأدوية الأساسية، ويُعزى ذلك إلى وجود الصندوق الدائر للأدوية. وتعد الأدوية المتوفرة من خلال الصندوق، في غالب الأحوال، من الأدوية الميسورة الكلفة لمستخدمي الصندوق. وكان عدد قليل جداً من المرضى (6%) هم الذين لم يتمكنوا من الحصول على الأدوية الموصوفة لهم، لأسباب مالية.

الدروس المستفادة: يمكن بنجاح إنشاء صناديق دائرة للأدوية في ولايات أخرى بالسودان وفي البلدان المنخفضة الدخل ذات الظروف المشابهة، شريطة توفر عوامل النجاح لها، مثل التنفيذ التدريجي، ووجود الالتزام السياسي، وتوفر العملة الصعبة.

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