

Lessons from the field

Improving national data collection systems from voluntary counselling and testing centres in Kenya

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Problem Voluntary counselling and testing (VCT) data from the registered sites in Kenya have been fraught with challenges, leading to insufficient statistics in the national office for planning purposes. An exercise was carried out to determine the barriers to the flow of data in VCT sites in Kenya.

Approach A record-based survey was conducted at 332 VCT sites in Kenya. Data from on-site records were compared with those in the national office. The exercise was conducted in 2004 between 5 September and 15 October.

Local setting All registered VCT sites in Kenya.

Relevant changes After the exercise, various measures to enhance VCT data collection and reporting were implemented. They include the provision of a uniform data collection and reporting tool to all the districts in the country, the strengthening of a feedback mechanism to update provinces and districts on their reporting status and increased support to the data component of the national quality assurance for VCT.

Lessons learned Periodical field visits by the national officials to offer on-the-job training about data management to data collectors and to address data quality issues can dramatically improve the quality and completeness of VCT reports. The perceived relevance of the data and the data collection process to those working at the sites is the critical factor for data quality and timeliness of reporting.

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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 Government of Kenya, with other stakeholders, developed a national HIV/AIDS strategic plan¹ that identifies strategies to alleviate the spread of HIV/AIDS whose prevalence is estimated at 6.7%.² One of the key strategies since 2001 has been the establishment of voluntary counselling and testing (VCT) services, which have spread rapidly throughout the country.^{3,4} Early in 2001 a common national VCT data collection form was piloted by stakeholders and adopted for national usage.⁵

VCT sites are all registered with the national AIDS and sexually transmitted infection (STI) control programme (NASCOP) and supervised annually, during which time the quality of the on-site laboratory and counselling room records are assessed. Registered sites,

whether governmental or nongovernmental, are issued with a unique site code, based on both province and district.^{4,5} All sites make monthly returns to their district AIDS and STI coordinator (DASCO), and are issued with free test kits from the government in return for data. In theory the returns are passed up a chain for final collation at NASCOP. At the time of this exercise, there were 332 registered sites.

Many of the donor-supported sites follow a parallel reporting system where data are channelled through their internal mechanism to their main offices. Key among the donor sites are the Centers for Disease Control and the Liverpool VCT (an independent nongovernmental organization in Kenya), which represent fewer than 30% of the sites but around 90% of their data are available in NASCOP.

In Kenya, the national VCT programme uses four models that are integrated, stand-alone, community-based and mobile.^{3,5} The integrated sites are located within the grounds of a health facility, whereas stand-alone sites are usually not associated with medical institutions. VCTs in the community-based approach are integrated into other social services or are implemented as the core activity, whereas the mobile approach provides outreach to remote or hard-to-reach areas.

A comprehensive national database is crucial for government planning and budgeting purposes, including the sourcing of test kits, training of VCT counsellors and counsellor supervisors, and the planning of treatment programmes. VCTs have a potential to integrate family planning and other services as well

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Table 1. Annual VCT aggregate in NASCOP before and after the data collection exercise

Year	No. tested			No. positive			No. positive as % of no. tested
	Males	Females	Total	Males	Females	Total	
2001							
Before ^a	1393	1397	2790	143	322	465	17
After ^b	9694	8457	18 151	1475	1922	3397	19
Difference ^c	8301	7060	15 361	1332	1600	2932	–
2002							
Before	11 518	11 032	22 550	740	1573	2313	10
After	38 638	33 963	72 601	4719	7192	11 911	16
Difference	27 120	22 931	50 051	3979	5619	9598	–
2003							
Before	55 024	43 177	98 201	5245	9306	14 551	15
After	99 281	79 253	178 534	9840	17 095	26 935	15
Difference	44 257	36 076	80 333	4595	7789	12 384	–
2004							
Before	36 148	34 270	70 418	3606	6865	10 471	15
After	76 634	68 983	145 617	7577	13 981	21 558	15
Difference	40 486	34 713	75 199	3971	7116	11 087	–
Total							
Before	104 083	89 876	193 959	9734	18 066	27 800	14
After	224 247	190 656	414 903	23 611	40 190	63 801	15
Difference	120 164	100 780	220 944	13 877	22 124	36 001	–

NASCOP, national AIDS and STI control programme; VCT, voluntary counselling and testing.

^a Before, refers to VCT data available in NASCOP before the data collection exercise.

^b After, refers to VCT data retrieved during the exercise.

^c Difference, refers to the difference between before and after the exercise.

as to provide a point of entry into the health-care system for people who are found to be HIV positive. Owing to the rapid increase of VCT sites in Kenya, there has been a challenge with regard to data collection and management. NASCOP has not been able to receive proper and up-to-date data about the client flow at these sites, posing a challenge to the national VCT database. We therefore set out to determine the completeness of the on-site records, follow up missing data for the national VCT database and determine the barriers to the flow of data in VCT sites in Kenya.

Methodology

In this exercise, we used an evaluative operations research approach that was non-experimental. In our sample, all registered sites were surveyed quarterly for missing data. We adopted a record-based quantitative survey and a semi-structured interview of key informants to explore opinions about the causes of delays in data handling. All registered sites were surveyed for missing data. Interviews were conducted with key in-

formants, such as counsellors, DASCOS and provincial AIDS and STI coordinators (PASCOS) at sites where delays in data submission were identified.

Two teams of four members were selected and worked simultaneously in different provinces collecting data between 5 September 2004 and 15 October 2004. There was a short training session for data collectors before the start of the exercise; this included how to survey the opinions of key informants with regard to delayed submission of reports, completion of the quarterly reports and the new data collection tool. The role of the data collector entailed collecting missing data from the logbooks, pre-testing a new data collection tool and surveying opinions among key informants with regard to delayed submission of data reports. Collection of data was, firstly, through visiting the PASCOS and DASCOS offices for any relevant VCT reports from registered sites recognized by NASCOP. Failure to get up-to-date records in these offices led the teams to visit the affected sites. Data were collated from September 2001 (shortly after the scale-up of VCT began) until the second

quarter of 2004. For the sites with missing data in the central database (monthly and quarterly) or those with reports that did not disaggregate their data by gender, the teams manually extracted this information from the on-site logbooks and client forms. Data were analysed using simple descriptive statistics in Microsoft Excel.

Results

Of the existing 332 sites officially registered in the second quarter of 2004, 298 (89.76%) had some missing records and their statistics were updated through this exercise. All the sites had completed client forms and logbooks, which were used to retrieve the missing data. In the event of a shortage in the required VCT stationery, the sites improvised a data collection tool. Existing data at the beginning of the survey showed 193 959 client records in the national database for the period between the second quarter of 2001 and the second quarter of 2004. On-site records revealed a further 220 944 records. After the exercise there were more than twice as many HIV

positive individuals identified than were originally estimated. Details are given in Table 1.

Interviewees perceived that data were less likely to reach the national database on time from sites that were remote and rural; remote sites refer to those that were sparsely distributed and hard to reach. In the integrated sites, staff shortages arose because health workers had more urgent medical problems to attend to and could not devote enough time to VCT. As integrated sites experienced more staff shortages than the stand-alone sites, members of staff reported they had less time to submit data. Four different types of data collection forms were found to be in use in the VCT sites: monthly and quarterly report forms; a monthly summary sheet used in some sites for the purposes of quality assurance exercises; a donor's monthly summary tool and tools developed by DASCOS for their own summaries. The monthly summary sheet, which does not segregate the tested clients by sex, was widely used. No data tracking system was in place to identify where delays occurred.

Discussion

The presentation of data from the VCT sites in Kenya has been complicated by the use of differing data collection tools. The updating of the national VCT database in NASCOP is bound to be enhanced by the use of one agreed simple data collection tool. In order to design a standard data collection tool to yield high quality usable information careful planning is needed, as is an effective method of distribution.⁶

Service delivery is a two-way procedure that entails collection of information by the relevant authorities and provision of feedback. NASCOP should develop a feedback mechanism on the performance of the VCTs and this should increase the submission of reports. Enabling VCT sites to effectively communicate priorities, expectations, participate in shared decision-making and to evaluate the relative success of their operations is a positive attribute. Such participation should lead to a more comprehensive appreciation of the challenges and management solutions.⁷

The availability of timely collected data in the national office is important for the planning of activities. By linking VCT data to other national monitoring and evaluation systems such as anti-retroviral, prevention of mother-to-child transmission, etc., information will be provided that is split by gender, age, region, prevalence of HIV, etc. – otherwise called disaggregation – in one comprehensive tool.^{8,9} It is envisaged that an up-to-date national database will facilitate better planning and links to treatment programmes supported by NASCOP. Furthermore, the integration of various reporting mechanisms in a system is crucial for timely and up-to-date records required for planning; hence the need for a better integration of donor reporting with the national reporting of VCT data.

In the Kenyan context, provision of VCT services and the number of sites reporting their data quarterly to NASCOP have increased tremendously since the inception of the exercise. To sustain the timely reporting of VCT data, all

stakeholders are required to implement collaboratively a systematic integration of guidance, capacity building and assistance.¹⁰ The outcome of this could be used to identify both good and bad (acceptable and unacceptable) trends in the performance of VCT centres.¹¹

Conclusion

HIV/AIDS remains the greatest challenge to development in sub-Saharan Africa and VCT is a key intervention measure within the comprehensive care programme. While significant progress has been made in developing the monitoring and evaluation systems in health care in resource-poor countries, the challenge of collecting data required for planning persists.

With the VCT data from Kenya, this paper shows that relevance of the data and the data collection process to the facility are critical to ensure data quality and timeliness of reporting. Furthermore, we demonstrate the importance of a holistic approach that integrates all the stakeholders into the development and planning of the national monitoring and evaluation systems. ■

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Résumé

Amélioration des systèmes de collecte des données à partir des centres de conseil et de dépistage volontaire du VIH au Kenya

Problématique Le recueil de données à partir des sites de conseil et de dépistage agréés du Kenya s'effectue très difficilement, d'où une insuffisance des statistiques réunies au niveau national à des fins de la planification. Un exercice a été pratiqué pour identifier les obstacles s'opposant à la circulation des données au niveau des sites de conseil et de dépistage volontaire kenyans.

Démarche appliquée Une enquête a été menée à partir des dossiers tenus par 332 sites de conseil et de dépistage volontaire kenyans. Les données tirées des dossiers ont été comparées avec celles dont dispose le Bureau national des statistiques. L'exercice a été réalisé en 2004, du 5 septembre au 15 octobre.

Contexte local Tous les sites de conseil et de dépistage volontaire agréés du Kenya.

Modifications intéressantes apportées A l'issue de l'exercice,

diverses mesures visant à améliorer la collecte et la transmission des données par ces sites ont été mises en place. Parmi ces mesures, figuraient l'introduction d'un outil de collecte et de transmission homogènes des données dans tous les districts du pays, le renforcement du mécanisme d'information en retour, destiné à renseigner les provinces et les districts sur leur situation en matière de notification, et l'apport d'un soutien accru à la composante Qualité des données du système national d'assurance de la qualité s'appliquant au conseil et au dépistage volontaire du VIH.

Enseignements tirés Il est possible d'améliorer considérablement la qualité et la complétude des notifications transmises par les centres de conseil et de dépistage en déléguant périodiquement des spécialistes nationaux dans ces centres afin de former sur place les personnes chargées de recueillir les informations à la gestion

des données et de résoudre les problèmes de qualité affectant ces données. La perception par les personnes travaillant dans ces centres de l'intérêt des données qu'ils recueillent et du processus

de collecte est déterminante pour la qualité de ces données et leur notification en temps utile.

Resumen

Mejora de los sistemas nacionales de recogida de datos a partir de los centros de asesoramiento y pruebas voluntarias en Kenya

Problema Los datos sobre el asesoramiento y pruebas voluntarias (APV) obtenidos en los centros registrados en Kenya presentan muchas deficiencias, lo que impide que la oficina nacional disponga de estadísticas suficientes a efectos de planificación. Se emprendió un trabajo para determinar los factores que obstaculizaban el flujo de los datos en los centros de APV en Kenya.

Métodos Se llevó a cabo un estudio de los registros de 332 centros de APV de Kenya. Los datos de los registros in situ se compararon con los de la oficina nacional. El trabajo se realizó en 2004, entre el 5 septiembre y el 15 de octubre.

Contexto local Todos los centros de APV registrados en Kenya.

Cambios destacables Terminado el trabajo se implantaron diversas medidas para mejorar la recopilación y notificación de los datos de APV. Entre ellas cabe citar el suministro de un instrumento

de recogida y notificación de datos uniforme a todos los distritos del país, el refuerzo de un mecanismo de retroinformación para poner al día a las provincias y los distritos acerca de su situación en cuanto a la notificación, y un mayor apoyo al componente de datos del sistema nacional de garantía de la calidad para el APV.

Experiencia adquirida Las visitas periódicas al terreno a cargo de funcionarios nacionales para ofrecer a los encargados de recoger los datos formación en el empleo sobre la gestión de los datos y para abordar aspectos de la calidad de los mismos permiten mejorar extraordinariamente la calidad y la completud de los informes sobre el APV. La importancia asignada a los datos y al proceso de recopilación de datos por quienes trabajan en los centros es el factor más decisivo para asegurar la calidad de los datos y la puntualidad de las notificaciones.

ملخص

تحسين النظم الوطنية لتجميع المعطيات من مراكز التوعية والاختبارات الطوعية في كينيا

والإبلاغ عنها، وهذه الإجراءات تشمل تقديم نموذج لجمع المعطيات، وأداة للإبلاغ لجميع المناطق في القطر، وتقوية آلية ارتجاع المعلومات لتحديث المعلومات في الولايات والمناطق، وتحسين وضعها من حيث الإبلاغ، وزيادة دعم مكون المعطيات في النظام الوطني لضمان جودة مراكز التوعية والاختبارات الطوعية.

الدروس المستفادة: يمكن للزيارات الدورية التدريبية التي يقوم بها الموظفون الوطنيون لمواقع العمل بغرض تقديم التدريب أثناء العمل للقائمين على جمع المعطيات حول إدارة المعطيات والتصدي لقضايا جودة المعطيات أن تحسن إلى حد كبير من جودة واستكمال التقارير التي تصدر عن مركز التوعية والاختبارات الطوعية. ويعد إدراك العلاقة بين المعطيات وعملية جميع المعطيات لدى العاملين في هذه المواقع من العوامل الأساسية لضمان جودة الإبلاغ والقيام به في الوقت المناسب.

المشكلة: تمتلئ معطيات التوعية والاختبارات الطوعية الموجودة في مراكز التوعية والاختبارات الطوعية المسجلة في كينيا بالتحديات التي تؤدي إلى إحصائيات غير كافية لأغراض المكتب الوطني للتخطيط. وتم إجراء تدريب لتحديد العوائق أمام تدفق المعطيات في مراكز التوعية والاختبارات الطوعية في كينيا.

الأسلوب: أجرينا مسحاً يستند على السجلات في 332 موقعاً من مراكز التوعية والاختبارات الطوعية في كينيا. وقارنا المعطيات من السجلات الموجودة في الموقع مع المعطيات في المكتب الوطني، وذلك في الفترة بين 5 أيلول/سبتمبر و15 تشرين الأول/أكتوبر من عام 2004.

الموقع المحلي: جميع المواقع المسجلة كمراكز للتوعية والاختبارات الطوعية في كينيا.

التغيرات المرتبطة بالموضوع: بعد الانتهاء من الدراسة، أجرينا مختلف الإجراءات التي تعزز تجميع المعطيات من مراكز التوعية والاختبارات الطوعية

References

1. Government of Kenya. *The Kenya National HIV/AIDS Strategic Plan 2000-2005*. Nairobi: National AIDS Control Council, Office of the President; 2001.
2. Government of Kenya. *Kenya demographic and health survey*. Nairobi: Government of Kenya; 2003. Available from: www.cbs.go.ke2003
3. Government of Kenya. *AIDS in Kenya*, 7th ed. Nairobi: National AIDS and STI Control Programme, Ministry of Health; 2005.
4. Taegtmeier M, Kilonzo N, Mung'ala L, Morgan G, Theobald S. Using gender analysis to build voluntary counseling and testing responses in Kenya. *Trans R Soc Trop Med Hyg* 2006;100:305-11.
5. Government of Kenya. *National guidelines for voluntary counseling and testing*. Nairobi: National AIDS and STD Programme; 2001.
6. Marshall G. The purpose, design and administration of a questionnaire for data collection. *Radiography* 2005;11:131-6. Available at: www.sciencedirect.com
7. Haywood K, Marshall S, Fitzpatrick R. Patient participation in the consultation process: A structured review of the intervention strategies. *Patient Educ Couns* 2006. In press.
8. Government of Kenya. *Adolescent reproductive health and development policy — plan of action 2005-2015*. Nairobi: National Coordinating Agency for Population and Development; 2005.
9. Peck R, Fitzgerald DW, Liautaud B, Deschamps MM, Verdier RI, Beaulieu ME et al. The feasibility, demand and effect of integrating primary care services with HIV Voluntary Counseling and Testing: Evaluation of a 15 year experience in Haiti, 1985-2000. *J Acquir Immune Defic Syndr* 2003;33:470-5.
10. Chen H. Development of a national evaluation system to evaluate CDC funded health department HIV prevention programs. *Am J Eval* 2001; 22:55-70.
11. Colson M, Bolsin S. The use of statistical process control methods in monitoring clinical performance. *Int J Qual Health Care* 2003;15:445.