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Assessment of the patient flow at the infectious diseases institute out-patient clinic, Kampala, Uganda

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Abstract

In order to cope with the increasing patient load, a study was performed to identify bottlenecks in patient flow at the Infectious Diseases out-patient clinic in Kampala, Uganda on 10 January 2005. On a standardised questionnaire we recorded for all patients: the time they presented at reception, waiting times for different services and in- and out times for nursing, counselling and doctor visits. 250 patients visited the clinic the study day: 36 (20 per cent) were asymptomatic; 133 (75 per cent) symptomatic but not critically ill and 8 (4.5 per cent) severely ill; 63 (37.5 per cent) were on antiretroviral treatment. The median time spend at the clinic was 157 minutes (range 22–426). The median time from reception to the triage/vital-signs measuring unit was 34 minutes (range 3–92), from triage nurse to doctor 51 minutes (range 1–205), from doctor to pharmacy 24 minutes (range 5–292). The median waiting time at the pharmacy was 30 minutes (range 10–175). Based on these results, organisational changes were proposed. A similar methodology could be used to evaluate and compare health service delivery systems for persons with HIV infection in Africa in order to identify the most efficient models of care.

Introduction

With the increased availability of antiretroviral drugs in countries with limited resources, increasing numbers of patients are attending out-patient clinics in the hope to receive treatment for their HIV infection (World Health Organisation, 2003). More patients are requesting HIV tests and routine HIV testing is now being offered to hospitalised patients (Wanyenze et al., 2005). Facilities and the necessary human resources to deal with large numbers of HIV infected patients requiring care, are currently lacking in most areas (Kober & Van Damme, 2004).

The demand for antiretroviral therapy is particularly high in large urban settings with high HIV seroprevalence. This is the situation for example in Kampala, Uganda. The Infectious Diseases Institute (IDI) is a newly established institution belonging to the Makerere University. It is providing out-patient HIV care including antiretroviral therapy. Within Mulago, the national referring hospital, the IDI out-patient clinic is at the moment the only clinic treating patients with antiretroviral therapy. As Mulago Hospital is a national referral centre, the

IDI clinic is also open to all patients referred to the clinic or coming on their own initiative. The IDI is a one-stop shop: patients are being referred, seen by nurses and a doctor, have blood tests done, are counselled, diagnosed, prescribed treatment and given free drug therapy. Antiretrovirals are provided by the Multi-country AIDS Programme (MAP) and the Presidential Emergency Plan for AIDS Relief (PEPFAR) programme. In January 2005, 7000 patients were already registered in the clinic. From these patients, over 1100 were on antiretroviral therapy. As most of the patients seen at the IDI are in stage III or IV of the WHO staging system, a large majority of the IDI clients is in need of antiretroviral therapy. Daily, about 20 new patients requiring such therapy are seen in the clinic.

In order to cope with this patient overload, several proposals were made. Limiting the transfer-in through better defining the type of patients needing referral to the IDI, decentralisation of the HIV care, transferring patients to other centres after having been worked up at the IDI and finally, improving the efficacy of the IDI out-patient clinic. In this paper we

describe a one-day study of the patient flow at the IDI in order to identify bottlenecks.

Methods

The study was performed on Monday 10 January 2005. On a standardised questionnaire we recorded for all patients: the time they presented at reception, the waiting times for different services and in- and out times for nursing, counselling and doctor visits. Patients with forms that contained missing variables were also included. Percentages were calculated on the total number of patients seen at the study day.

Results

A total of 250 patients visited the clinic during the study day, for some of them the available information was incomplete. Two hundred and twenty one (92.5 per cent) were registered (old) clients, 18 (7.5 per cent) new clients; 189 (77 per cent) were scheduled and 57 (23 per cent) unscheduled visits; 36 (20 per cent) were asymptomatic, 133 (75 per cent) symptomatic but not critically ill and 8 (4.5 per cent) severely ill, 63 (37.5 per cent) were on ART. The median time spend at the clinic was 157 minutes (range 22–426 minutes). Time in the clinic was longer for new patients (220 minutes, range 65–419 minutes), patients on unscheduled visits (174 minutes, range 22–419 minutes) and patients starting on ART (237 minutes, range 44–379 minutes) but shorter in asymptomatic patients (145 minutes, range 31–329 minutes) and patients on an ART follow up visit (130 minutes, range 22–390 minutes). The median time from reception to the triage/vital-signs measuring unit was 34 minutes (range 3–92 minutes), from triage nurse to doctor 51 minutes (range 1–205 minutes), from triage nurse to individual counselling 64 minutes (range 14–148 minutes), from doctor to pharmacy 24 minutes (range 5–292 minutes). The median times were not significantly different between morning and afternoon visits, nor among patients with or without phlebotomy. The median duration for a doctor visit was 10 minutes (range 1–51 minutes) (18 minutes (range 10–30 minutes) for severely ill patients), for a nurse visit (only 14 patients were seen by a nurse instead of a doctor) 10 minutes (range 5–15 minute), for individual counselling (29 patients) 23 minutes (range 10–55 minutes) and for group counselling about ARVs (20 patients) 25 minutes (range 19–50 minutes). Twenty-three patients had two doctor visits during their stay in the clinic. The median waiting time at the pharmacy was 30 minutes (range 10–175 minutes).

Discussion

This one-day study was able to generate useful information to reorganise patient care at the IDI. The study was done on a Monday. Mondays are generally busy clinic days and this was also the case at the IDI. It would have been helpful to have information on additional days, but this one day exercise was already a big effort and moreover we were eager to introduce organisational changes in the clinic without delay.

Different bottlenecks were identified, mainly at the reception, the triage unit and the pharmacy. The total time in the clinic was unacceptably long. Based on the study results, organisational changes were proposed. We hired additional nurses and trained them to do nurse visits. These visits include follow-up visits of patients who are asymptomatic and ART follow-up visits. Such patients are immediately referred by the triage nurse and vital signs are recorded during the nurse visit. Today, three nurses are capable of each seeing about 30 patients daily. These nurse visits solved the problem of the bottleneck observed at the level of the triage and the doctor visits. To decrease the workload for the counsellors, we reduced the number and length of the individual ARV treatment counselling sessions and organised a system of combined group and individual counselling. A patient starting on ART, first has to attend a general ART counselling session, delivered by one facilitator to a group of 20–24 patients covering the topics of general AIDS knowledge, disease progression, importance of adherence, good nutrition, safe sex behaviour and effects of ART on pregnancy. He/she is then given an appointment for a second group counselling session where the specific ARV regimen proposed to the patient is explained: how and when to take the drugs, how to recognise side-effects and how to react on them. The third session remains an individual one-to-one counselling session that assesses: 1) the patient's psycho-social well-being; 2) their comfort level in disclosing their HIV status to family members; 3) understanding of the treatment regimen; 4) readiness to start; and 5) commitment to adhere to therapy. During the individual session, risk-reduction techniques, encouragement of partner notification and testing are also discussed. This new counselling system is very well accepted by clients and counsellors and allowed us to speed up the ARV roll out. November 2006, at the IDI an average of 308 persons with HIV infection were seen on clinic days and 3844 clients were on free ARV drugs.

Plans were made to improve the appointment system. Extra dispensers for the pharmacy were employed. The plan is to repeat this patient-flow study after six months to evaluate the effect of these

organisational changes. A similar methodology could be used to evaluate and compare health service delivery systems for persons with HIV infection in Africa in order to identify the most efficient models of care.

Up to now, very little research has been done on operational and clinical problems encountered in HIV treatment centres in countries with limited resources (Wester et al., 2005; Bekker et al., 2003). In order to cope with the increasing demand for ARVs and the limited numbers of available doctors in Africa, nurses, dispensers, clinical pharmacists and counsellors should be organised into effective clinical teams in order to provide HIV care services. This will require major training initiatives as well as reorganisation of health services.

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