Appointment systems are essential for improving chronic disease care in resource-poor settings: learning from experiences with HIV patients in Africa

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African health systems have historically focused on the prevention and treatment of highly prevalent and frequently fatal acute illnesses. With demographic transition and economic development in these countries, mortality rates from chronic diseases are now increasing rapidly. More than 60% of all deaths worldwide are caused by non-communicable diseases and, in 2008, 80% of these deaths occurred in low-income and middle-income countries. Management of chronic conditions such as diabetes, hypertension and asthma requires regular, long-term access to medication therapy and continuous monitoring of treatment adherence.

The evolution of treatment for patients with HIV infection offers insights for a refocused healthcare delivery model for sub-Saharan Africa. With the advent of antiretroviral medicines and strengthened clinical care systems, HIV infection has transitioned to a chronic condition requiring long-term adherence to medications to prevent treatment failure. To manage HIV infection and other chronic illnesses effectively, health systems in sub-Saharan Africa will need to implement new clinic and staff management strategies and strengthen links with communities. Experiences with interventions to improve patient adherence to antiretroviral therapy (ART) and retention in treatment programmes can inform efforts to improve care systems for other chronic conditions.

Using routine data from East African clinics, the International Network for the Rational Use of Drugs Initiative on Adherence to Antiretrovirals (INRUD-IAA) has shown that patients attending appointments on time correlates with medication adherence and clinical outcomes. Although many ART programmes achieved high rates of adherence, the rate of on-time attendance varied widely across ART clinics (15–100%).

To maximize the chances of treatment success and minimize the development of drug resistance, ART programmes need to promptly identify and follow-up with patients who miss appointments. Yet in these settings, clinic scheduling systems are haphazard: staff members record patients on arrival in a variety of registers or patient diaries and, typically, there is no way to determine who is expected and whether all expected patients have come each day. By the time patients are identified as lost to follow-up, they may have already missed several months of treatment.

An effective appointment system can serve many purposes that are critical to managing patients with chronic conditions, including: predicting and managing clinic workload; knowing and preparing...
for patients expected each day; rapidly identifying those who do not show up, so that patient tracking can be initiated; improving patient satisfaction due to reduced waiting time; and monitoring the monthly percentage of patients who attend the clinic on or within a specified number of days of their appointment as a tool for continuous quality improvement.

As part of INRUD-IAA, local teams in Tanzania, Rwanda and Kenya, led by staff from their respective national HIV/AIDS control programmes, pilot-tested appointment systems to monitor patient attendance, reach out to missing patients and monitor facility performance.5–7

Requiring all patients to arrive early in the morning and wait long periods until they are seen is inconvenient, unnecessary and inefficient. In Tanzania, both patients and staff liked a system of appointments where patients could choose their appointment day and block of time. The system helped distribute the workload during the day and reduce crowding. With knowledge from the clinic on who missed an expected appointment, community organizations located in the majority of districts in Tanzania were pleased to help trace missing patients and bring them back into care.5

In Rwanda, the appointment and patient tracking system was accompanied by performance-based financing, which provided additional clinic funds for reaching target rates of patient attendance.5 Linking payment to high appointment-keeping rates provided an incentive for clinic staff to monitor and act on attendance rates. However, pay-for-performance requires substantial additional resources and supervisors to validate reported data carefully to prevent abuse. Clinic staff in Kenya reviewed attendance indicators, calculated from their appointment system, and discussed performance and possibilities for improvement in monthly staff meetings.7 This enabled staff to track their performance levels, which motivated them to strengthen their practices to support patient adherence. Appointment keeping and adherence indicators are easily calculated from appointment books and can become part of routine clinic information systems that can be used for monitoring chronic care performance and designing continuous quality improvement efforts.

Attendance rates and patient tracking improved following all three interventions.5–7 ART clinics participating in the INRUD-IAA project found that a minimally invasive, low-cost patient appointment and tracking system facilitated the management of their workload and promoted sustainable and consistent clinic attendance by HIV-positive patients. Evidence of the utility, feasibility and low cost of these interventions led to their incorporation into national policy and subsequent scale-up in the respective countries.

Aside from our work,5–7 information on appointment systems in sub-Saharan Africa is lacking, including not being a part of the Cochrane Collaboration’s review on ‘Setting and organization of care for persons living with HIV/AIDS’.7 As healthcare systems in Africa evolve from providing predominantly acute care to a greater focus on chronic illness care, they will need to find ways to bring patients to clinics for routine follow-up and ensure continued adherence to therapy. Practical, low-cost appointment systems may be a first step.

Although evidence is scarce on adherence to treatment for other chronic conditions, 1 year retention rates of only 10% (Cameroon)5 and 2% (Tanzania)5–9 for patients on antihypertensive and antidiabetic medicines indicate a worrying picture. To translate into clinical benefits and not waste resources, chronic disease treatment must be long term. Barriers to and enablers of adherence to medications for chronic conditions other than HIV/AIDS will differ. For example, hypertension often has no symptoms and medication may be quite costly; whereas HIV may have many symptoms and ART is now free in most places. Further research and multipronged interventions are therefore needed to address the different issues. However, we believe that appointment-keeping systems are a prerequisite to effectively and efficiently managing chronic conditions. Based on our findings, we suggest that they be considered for widespread scale-up in ART settings and tested in the management of other chronic diseases.

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References


