

RESEARCH BRIEF

Key findings:

- The introduction of structured pre-ART care can significantly improve the retention, assessment and management of patients with HIV.
- Structured pre-ART services help to significantly reduce the time between patients being assessed as eligible for ART and starting on the treatment. This is important as starting ART late is associated with poor treatment outcomes^{1,2}.
- Pre-ART services can be implemented as part of routine health service delivery, using existing staff and supporting them to take on extra roles.

The problem

In sub-Saharan Africa, adults with HIV have a high mortality rate during the first year of receiving antiretroviral therapy (ART). This is associated with high rates of loss to follow-up care, when people are tested for HIV but fail to return to hospital for their blood results. This can mean unnecessary and dangerous delays in patients starting on antiretroviral medication when they need it.

Evidence shows that patients who start late on ART have poorer treatment outcomes^{1,2}.

What is pre-ART care?

Pre-ART care spans the period between a person testing positive for HIV and needing ART. For some people this is very short, while for others it could span years.

During pre-ART, a number of interventions, including counselling, clinical staging, regular reviews and screening for tuberculosis (TB), can improve the health of people living with HIV.

Crucially, pre-ART care offers a more timely progression to ART for those who need it^{3,4}.

Against this backdrop, Swaziland's Extended National Multisectoral HIV and AIDS Framework 2014-2018 recommends strengthening the pre-ART care package.

Context and setting

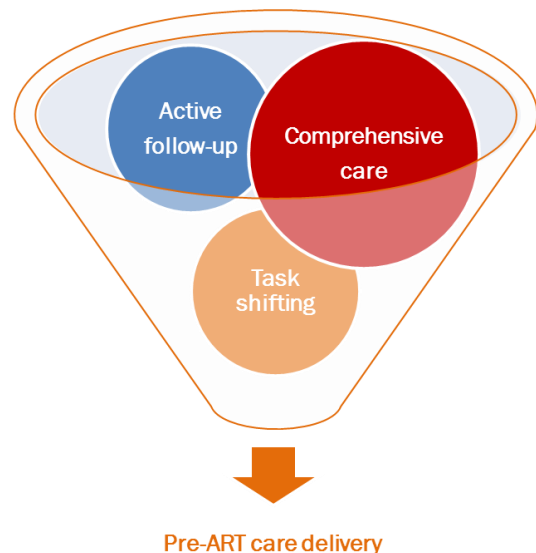
In Swaziland, 26% of adults aged 15-49 are HIV positive – the highest estimated prevalence of HIV infected adults in the world⁵.

80% of TB patients in Swaziland are also HIV positive⁶, making effective integration of TB and HIV screening and care vital for the country's health services.

This study forms part of a wider COMDIS-HSD project to increase TB and HIV case detection in general outpatient departments in Swaziland. The work is being carried out with Good Shepherd Hospital (GSH), the district referral hospital for the Lubombo region and a COMDIS-HSD partner.

Programme design

The pre-ART service draws on 3 key concepts: 1) comprehensive care; 2) active follow-up; and 3) task shifting within the health care team.





Motorcycle adherence officers at Good Shepherd Hospital. The adherence officers are part of existing care services, supporting the hospital's HIV, TB and epilepsy services in the community.

Comprehensive care:

The new service pathway has been developed by plotting what happens to the patient from HIV testing to starting on ART treatment, identifying service gaps along the way. Staff took part in monthly meetings to review performance and develop the pre-ART service. Three new patient records were introduced:

1. an inpatient pre-ART file – documenting a comprehensive and systematic care plan for each patient;
2. a patient handheld file – enabling patients to take greater responsibility for their care and improving continuity of care if patients go to other health facilities; and
3. a pre-ART registration book – allowing staff to follow up patients when they do not return for their appointments, and monitor how well the pre-ART system is performing.

Active follow-up:

Patients failing to turn up for their appointments were contacted by phone and their reasons for not attending identified.

Those who could not be reached by phone were followed up at home by motorcycle adherence officers.

Our research suggests that mobile phones may be a useful tool for patient follow-up and appointment reminders⁷. In particular, free 'missed call' messages (known as 'buzzing') could be used to remind patients of clinic appointments. High levels of mobile phone ownership in Swaziland, and positive feedback from staff and patients about buzzing, indicate that mobile phone technology may be feasible and acceptable in rural Swaziland.

Task shifting:

Traditionally at GSH, assessment for ART initiation had been doctor led. The new pre-ART service is nurse led, with nurses triaging patients entering the pre-ART system and carrying out most of the clinical assessment for ART initiation. This frees up time for doctors to start eligible patients on ART treatment; a role that currently only physicians can carry out.

HIV counsellors have taken on additional roles from the nurses, including TB screening and phlebotomy (taking blood samples). Shifting tasks from doctors to nurses and HIV counsellors reduces the number of steps a patient has to take in their care pathway and has helped the hospital make effective use of limited resources.

Before the introduction of pre-ART

Before the introduction of the pre-ART service at GSH, HIV care for pre-ART patients was fragmented and episodic. More than one third of HIV patients were failing to return for their blood test results.

Patients were only followed up consistently once they were started on ART. Patients with unknown HIV status were tested in the hospital's HIV testing and counselling centre. If found to be HIV positive, a blood sample was taken for CD4 testing (a cell count used to determine when an HIV positive patient needs to start ART treatment). The patient was then instructed to return to the separate ART department in 3 days in order to collect their results.

If they returned, they received counselling, TB screening, co-trimoxazole (used to treat certain bacterial infections) and further appointments as necessary.

An internal audit showed the following:

- More than one third of pre-ART hospital patients did not return to collect their CD4 counts and therefore received no follow-up.
- Patients started ART late.
- Although co-trimoxazole was prescribed for pre-ART patients, there was no system for receiving a regular supply of this.
- HIV counsellors said they performed TB screening, but it was not offered systematically, results were not recorded and there was no follow-up system in place.

Why do patients fail to return for their results?

Retaining HIV patients who are not yet eligible for ART is a challenge in poorer settings. Patients who have no symptoms and are not yet eligible for ART may not realise they need medical care at this stage. Some are put off by the disruption, expense and stigma of repeated clinic visits for what they see as little treatment at this stage⁸.

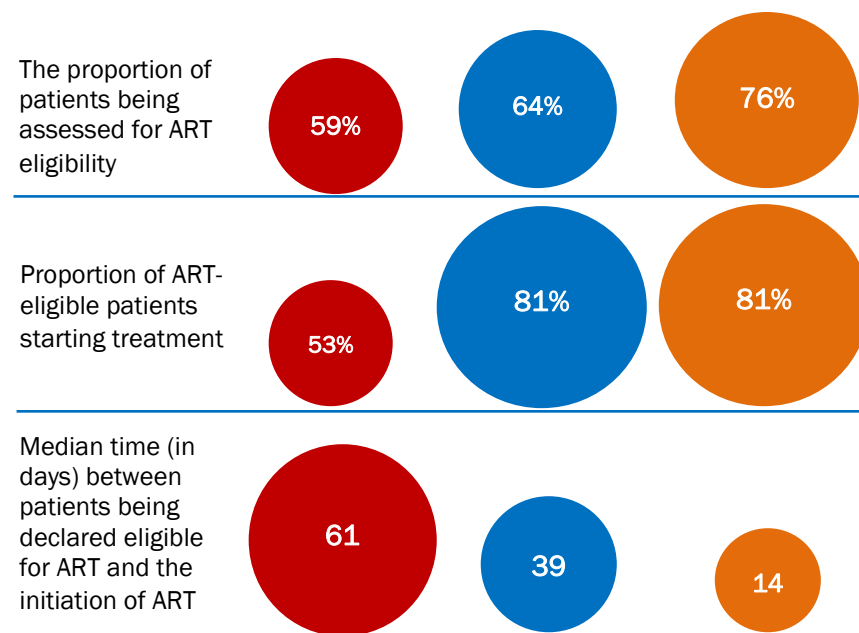
After the introduction of pre-ART

Following the introduction of a structured pre-ART service:

- The proportion of patients being assessed for ART eligibility increased significantly.
- The proportion of ART-eligible patients starting treatment increased significantly.
- The median time between patients being declared eligible for ART and the initiation of ART treatment decreased significantly.

Study sample groups: Patients with a known HIV diagnosis were registered for the pre-ART service. These patients formed the population for this study. The 3 groups reflect largely similar demographic populations. All patients in the study had at least 3 months' follow up by the pre-ART service.

Figure 1: Access to ART assessment and ART treatment for patients registered between February 2009 and February 2010



KEY TO FIGURES 1 AND 2:

Baseline = 200 patients registered for pre-ART between February and March 2009, the first patients enrolled by the new service

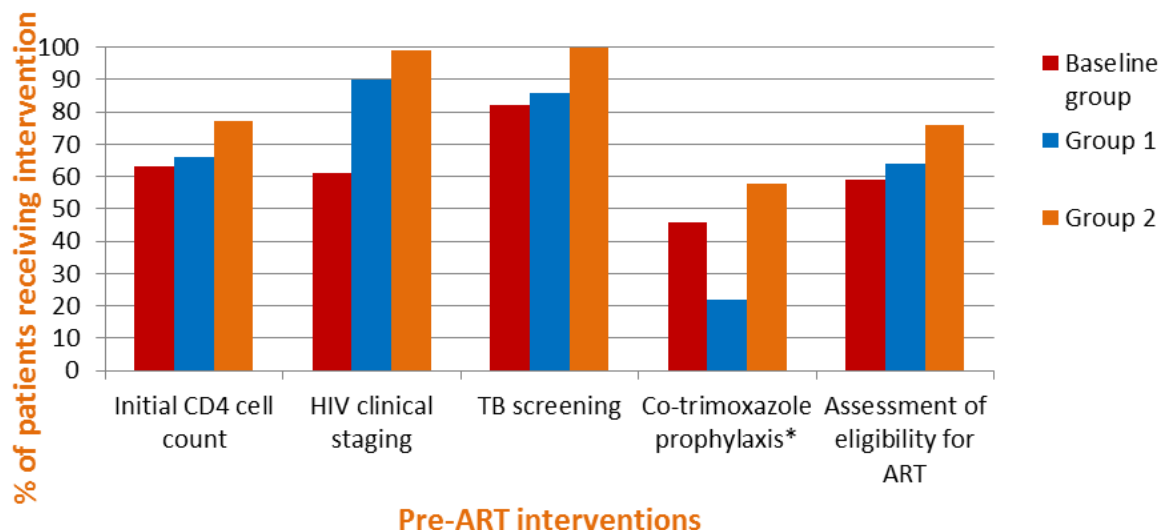
Group 1 = 771 patients registered between April and June 2009, to assess the impact of the initial service implementation

Group 2 = 200 patients registered in February 2010 to assess the impact of the service after 1 year

After pre-ART (continued)

Also after the introduction of the pre-ART service, the proportion of patients with HIV receiving appropriate interventions increased gradually over the study period*.

Figure 2: Comparison in numbers of patients accessing priority pre-ART interventions between February 2009 and February 2010



* The proportion of patients receiving co-trimoxazole prophylaxis fell between the baseline group and group 1 due to supply problems with the drug, but it did rise over the one-year period.

References:

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2: Amuron B, Namara G, Birungi J, et al. (2009) Mortality and loss to follow-up during the pre-treatment period in an antiretroviral therapy programme under normal health service conditions in Uganda. *BMC Public Health*. 9: 290. doi.org/10.1186/1471-2458-9-290

3: World Health Organization HIV/AIDS Department. (2009) [Priority intervention for HIV/AIDS prevention, treatment and care in the health sector](#). Geneva, WHO

4: World Health Organization HIV/AIDS Department. (2008) [Essential prevention and care interventions for adults and adolescents living with HIV in resource-limited settings](#). Geneva, WHO

5: Centres for Disease Control and Prevention. (2013) [CDC in Swaziland factsheet](#). Atlanta, CDC

6: World Health Organization. (2012) [Global Tuberculosis Report 2012](#). Geneva, WHO

7: Kliner M, Knight A, Mamvura C, Wright J, Walley J. (2013) Using no-cost mobile phone reminders to

improve attendance for HIV test results: a pilot study in rural Swaziland. *Infectious Diseases of Poverty*. 2 (1): 12. doi.org/10.1186/2049-9957-2-12

8: Rosen S, Fox M. (2011) Retention in HIV care between testing and treatment in sub-Saharan Africa: a systematic review. *PLoS Med*. 8(7). doi.org/10.1371/journal.pmed.1001056

Further reading:

This briefing is based on our research papers:

- Burtle D, Welfare W, Elden S, et al. (2012) Introduction and evaluation of a 'pre-ART care' service in Swaziland: an operational research study. *BMJ Open*. 2(2). doi.org/10.1136/bmjopen-2011-000195
- Kliner M, Knight A, Mamvura C, Wright J, Walley J. (2013) Using no-cost mobile phone reminders to improve attendance for HIV test results: a pilot study in rural Swaziland. *Infectious Diseases of Poverty*. 2 (1): 12. doi.org/10.1186/2049-9957-2-12

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