

Photo: Adriaan Backer

Per-Patient Costs do not increase under immediate Art For All: Evidence From Swaziland

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Background

With HIV prevalence of 32% and annual incidence of 2.4% among 18-49 year-old adults, HIV is a leading public health concern in Swaziland[1]. In 2014, Swaziland's Ministry of Health in collaboration with *Max*ART initiated an Early Access to ART for All study. Aim of the study was:

- to answer questions regarding acceptability and feasibility in a "real world setting" of offering Early Access to ART for All: antiretroviral therapy (ART) as soon as possible following diagnosis - WHO's recommendation in 2015;
- to compare the costs of delivering Early Access to ART for All in comparison to existing national Standard of Care.

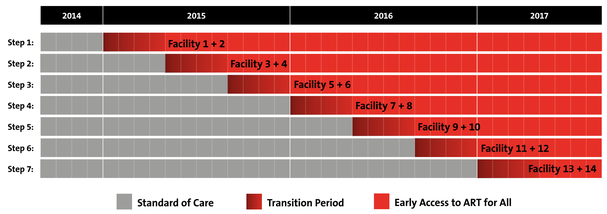
The study presented here is the first empirical costing study of Early Access to ART for All in a public health system, and with Swaziland and other regional governments' adoption of Early Access to ART for All as national policy in late 2016, it provides a well-timed analysis for policy makers to inform medium to long term funding requirements for successful long-term implementation of Early Access to ART for All.

Methodology

From September 2014 through July 2016, comprehensive data on facility level ART costs were collected from 7 facilities prior to and after transitioning to Early Access to ART for All in a stepped-wedge design (see table 1). The health facilities represented small to medium clinics and were evaluated using a "bottom-up costing" approach, utilizing retrospective facility budgets and patient records.

The Standard of Care was ≤ 350cells/ml until December 2015, when it changed to ≤500cells/ml. A cost allocation method was adapted for relevant shared costs with management of other patient types. The costs include medications, laboratory services, direct and indirect personnel, equipment and administrative services. The total costs were divided by the total number of ART patient years over the period the facility experienced Standard of Care and Early Access to ART for All to derive ART cost per patient per year (PPPY).

Table 1: Study design



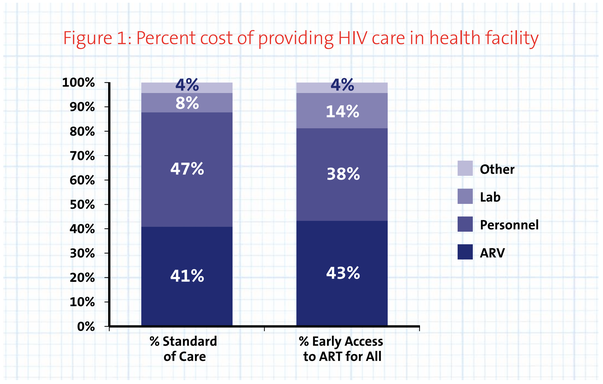
Results

Table 2: Total cost breakdown in Standard of Care and Early Access to ART for All

	Standard of Care[a] Cost per patient per year ($USD)	Early Access to ART Cost per patient per year ($USD)	p value[g]
	Mean[b] (95% CI)	Mean (95% CL)	
Total Cost	**$277.48 (184 - 371)**	**$253.65 (209 - 298)**	**p=0.66**
ARV[c]	$113.47 (111 - 116)	$109.72 (108 - 112)	p=0.04
Personnel[d]	$130.22 (43 - 217)	$96.39 (51 - 141)	p=0.51
Lab[e]	$21.87 (11 - 33)	$36.70 (29 - 44)	p=0.05
Other[f]	$11.92 (8 - 16)	$10.84 (8 - 14)	p=0.69

[a] Standard of Care was CD4≤350 cells/m till Dec 31st, 2015 when it changed to CD4≤500 celss/ml. 6 facilities transitioned before guideline change while last facility transitioned on Jan 1st, 2016
[b] Simple mean calculated across facilities in the sample
[c] ARV costs does not include cost of delivery to the facility
[d] Direct and indirect personnel costs are included
[e] Lab costs include consumables and reagents
[f] Other costs include building, equipment, training and Opportunistic infections
[g] Student t-test

Figure 1: Percent cost of providing HIV care in health facility



Conclusions

The study demonstrates that facility level costs of ART care are comparable under Standard of Care and Early Access to ART for All. During the study the personnel complement remained similar in both arms. The increase in laboratory costs in Early Access to ART for All was driven by the uptake of viral load monitoring.

The evidence here provides the first account of comparison between costs under Standard of Care and Early Access to ART for All in a large region in Swaziland. It is likely generalizable to other settings in the region. However an important limitation of the results of this stage is the lack of patient outcome data. The cost of scaling up ART through Early Access to ART for All would not have significant impact on health budgets on a per patient basis as the costs remain about the same as the Standard of Care.

[1] Bicego GT, Nkambule R, Peterson I, Reed J, Donnell D, Ginindza H, et al. Recent Patterns in Population-Based HIV Prevalence in Swaziland. PLoS ONE. 2013; 8(10)

The Swaziland Ministry of Health, Aidsfonds, and the Clinton Health Access Initiative (CHAI) initiated the *Max*ART programme in Swaziland. The programme partners include the Swaziland Network of People Living with HIV and AIDS (SWANNEPHA) and the Global Network of People Living with HIV (GNP+), the National Emergency Response Council on HIV/AIDS (NERCHA), national and international non-governmental organisations including the Southern Africa HIV & AIDS Information Dissemination Service (SAfAIDS), social scientists from the University of Amsterdam and researchers from the South African Centre for Epidemiological Modelling and Analysis (SACEMA). The *Max*ART Early Access to Art for All implementation study is supported by the Dutch Postcode Lottery in the Netherlands, the Embassy of the Kingdom of the Netherlands in Mozambique, British Colombia Centre of Excellence in Canada, Mylan, and Medecins Sans Frontieres.