

## Background

In Mali, the prevalence of HIV was estimated to be 1.1%, alarmingly 81% of women and 90% of men did not know their HIV status.

The main prevention actor in Mali is ARCAD Santé Plus, a member of Coalition Plus. In 2020 ARCAD Santé Plus improved its mission by targetting HIV/AIDS, Hepatitis, addictions, and non transmissible diseases.

**Key population** were identified : Men having Sex with Men (MSM), Sex Workers (SW), Intravenous Drug Users(IDU)

ARCAD Santé + runs 3 types of care structure :

- USAC : Integrated care units, in hospital setting
- CESAC : Community care, open for diagnosis, prevention
- CSS : Sexual health clinics, units in the city, with adapted opening hours (night), targetting especially key populations

The aim of the study was to assess the cost effectiveness of the different structures involved in the HIV/AIDS prevention in Mali.

## Methods

A **decision tree model** was design (figure). **Efficacy** was defined as the HIV positive treated patient with an indetectable viral load at 12 month proportion.

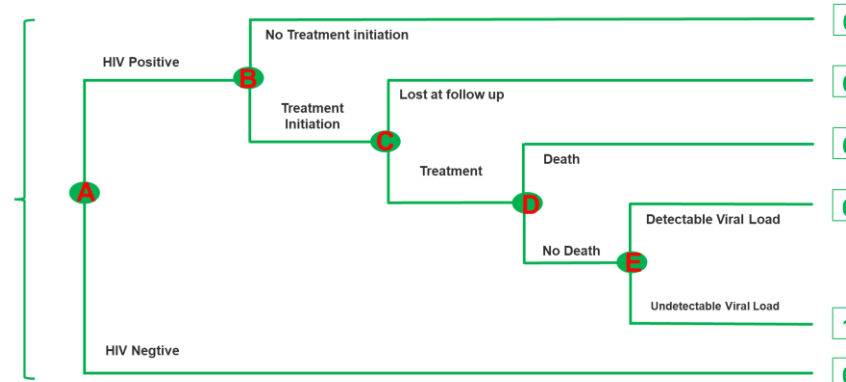
**Costs** were assessed under a complet costs perspective for ARCAD Santé Plus. Included cost were splitted with fixed costs (utilities, rent, cleaning) and variable costs (drugs, workforce, tests, condoms, communication campaign, food, gas), as well as indirect costs (Executives costs, amortization). Temporal horizon was 12 months.

Comparators : all the ARCAD HIV/AIDS treatment structure were reviewed : CESAC, USAC, CSS.

In a complementary analysis, we examined the structures in Bamako, the capital city of Mali were most of the identified key population live.

Detail of costs:

- Prescription with STD : 2 500 CFA
- HIV test : 600 CFA
- Pre-Exposure Prophylaxys : 2267 CFA
- ARV (TDF/3TC/EFV) : 4 125 CFA
- Condom : 10,8 CFA



Decision-Tree model

**Efficacy** : was computed from the active HIV/AIDS patients active file :

- Seropositivity rate : (quantity of Hiv-AIDS)/(Quantity of screening)
- Antiretroviral therapy initiation rate : Number of initiation/Number of HIV-AIDS patients
- Follow-up rate : 1-((Patient without treatment + loss at follow up + deceased patients + transferred patients)/(numver of patients with antiretroviral therapy))
- Death rate : (Deceased patients) / (patients-loss at follow-up – transfered patients)
- Indetectability rate : Indetectable Viral Load / Prescribed Viral Loads

## Results

	Cost(CFA)	Δ Cost	Effectiveness	Δ Effectiveness	ICER
<b>CSS</b>	63 137		0,2435		
<b>USAC BKO</b>	64 409		0,2152		Dominated
<b>USACS (Others)</b>	81 356		0,0755		Dominated
<b>CESAC BKO</b>	91 896	28 759	0,2556	0,0122	2 363 970 CFA
<b>CESAC MOPTI</b>	120 250		0,0446		Dominated

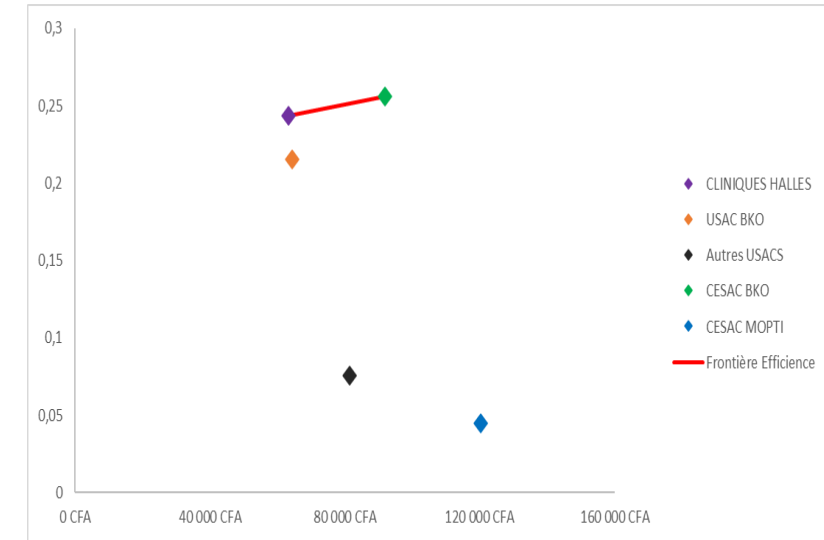
**Cost Effectiveness** results are synthetized in the Table.

The least expensive strategy is the **CSS** with 63 137 CFA per patient, with an efficacy of 0,24 while USAC BKO is more expensive and less effective, this strategy is dominated.

**CESAC Bamako** is more expensive (91 896 CFA, Δ 28 759 CFA), and more effective (Δ 0,01) therefore the computed ICER is 2 363 970 CFA.

All other strategies are dominated.

Figure 2 encompass the cost-effectiveness plane, the efficiency frontier is clearly drawn, with only two strategies to generalized to be CSS and CESAC (in Bamako).



A complementary analysis was carried out, comparing different treatment in Bamako : USAC from ARCAD santé Plus, and public structures. The same decision tree was used.

Effectiveness from public structure was lower (0,03 vs 0,22) and more expensive (59 713 CFA vs 48 839 CFA) therefore Public structures are dominated. Arcad Santé Plus community care is the more cost-effective strategy in the struggle against HIV/AIDS in Mali.

## Conclusion

Current ARCAD strategy is the most effective strategy. Community care service for HIV/AIDS treatment is the most cost-effective strategy