Analysis of the economic consequences of the evolution of the community-based HIV care model in Mali

E. Cabout, S. Eymere, R. Launois
Réseau d'Evaluation en Economie de la Santé – REES France, 28 rue d'Assas 75006 Paris

Background

In Mali, **the prevalence of HIV** was estimated to be 1.1%, alarmingally 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 5 year-budgetary impact model was developed to compare the current community care model (scenario 0) with the future community care model (scenario 1). ARCAD point of view was adopted, Full costs were accounted for with a distinction between fixed and variable costs.

The current standard of care from ARCAD was compared to the future community care model : wit a broader scope such as daily opening, Tuberculosis screening and treatment)

The population was the Malian population, with the incidence and prevalence of both TB and AIDS/HIV. **Epidemiological data** were extracted from SPECTRUM 5 software to calculate the projected prevalent and incident population. SPECTRUM is a software with easy-to-use political models, and an analytical tool helpful in decision making. Spectrum encompass three tools : Demography (Dem Proj) with population projection : with hypothesis based upon fecundity rate, mortality rate and migration rate up to 50 years in the future.
AIDS Impact model : economical consequences of HIV/AIDS pandemic, especially for people living with HIV/AIDS, the new infections (incidence rate) death rate
TB Impact model : a toolkit such as AIDS impact model, but for TB instead of AIDS.

The modalities of community-based care are set to evolve, with the placing under national supervision of in-hospitals, the strengthening of the key population prevention structure, and the extension of the offer to tuberculosis

The current strategy resolves around 19 prevention and treatment centers. Among them, some structure are focused only in prevention and treatment of the key populations. Up to 50% of the HIV/AIDS positive patients are treated with an antiretroviral drug.

Our scenario for the future : fewer ARCARD Santé Plus center will remain open (19 -> 7) therefore only 30% of HIV positive Malian will be integrated to an ARCAD Center. However, some centers such as the CSS (on of the most cost-effective structure) will be open for longer hours.

	2021	2022	2023	2024	2025	Total
Baseline	2 605 425 861 CFA	2 631 690 615 CFA	2 661 867 047 CFA	2 692 382 419 CFA	2 722 987 971 CFA	13 314 353 912 CFA
Scenario	2 183 762 360 CFA	2 207 603 354 CFA	2 234 462 536 CFA	2 261 667 459 CFA	2 289 033 949 CFA	11 176 529 657 CFA
Consequences	**-421 663 501 CFA**	**-424 087 261 CFA**	**-427 404 511 CFA**	**-430 714 960 CFA**	**-433 954 022 CFA**	**-2 137 824 255 CFA**

Results

	2020	2021	2022	2023	2024	2025
Malian population	**20 311 760**	**20 915 836**	**21 535 234**	**22 170 374**	**22 821 544**	**23 821 544**
Prevalence rate	0,43%					
Prevalent population	**87 216**	**87 744**	**88 303**	**88 957**	**89 634**	**90 324**
Incidence rates	0,013%	0,012%	0,012%	0,012%	0,012%	0,011%
Incident population	**2 738**	**2 559**	**2 614**	**2 663**	**2 703**	**2 735**
HIV population	89 954	90 303	90 917	91 620	92 337	93 059
1-year mortality	2,46%	2,21%	2,16%	2,17%	2,18%	2,19%
Survivors	87 744	88 303	88 957	89 634	90 324	91 016
Deaths	2 210	2 000	1 960	1 985	2 014	2 043
Couverture en ARV	74,79%	75,10%	75,28%	75,52%	75,75%	75,97%
Population cible	**67 277**	**67 817**	**68 442**	**69 191**	**69 945**	**70 697**

- Over 5 years, the current care model will cost ARCAD 13,314,353,912 CFA.
- The new care model will cost 11,176,529,255 CFA over 5 years.
- The new care model therefore generates a profit for ARCAD Santé Plus of 2,137,824,255 CFA. From the first year, 2021, this benefit amounts to 421,663,501 CFA.

Conclusion

Budget impact analysis is now one of the components of medico-economic evaluation.

The importance attached to the economic factor is not, as is still too often believed, the result of a desire to control expenditure; it is above all the result of a concern to save the greatest number of lives.

The new model of care is more efficient.