Service delivery costs for HIV treatment under differentiated models of care for stable patients in Malawi

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Background

Despite gains in improving access to and efficiency of providing antiretroviral therapy (ART), Malawi is expected to face an ART funding gap in coming years. Models of differentiated care may further improve efficiency by streamlining services for stable patients.

An analysis was conducted to understand the service delivery costs associated with three models of differentiated care in Malawi: multi-month scripting (MMS), fast-track refills (FTRs), and community ART groups (CAGs). These models of care are described below:

- MMS: Stable patients get 3 or more months of medication at each visit, thereby having 4 clinical appointments per year with a nurse or clinical officer
- FTRs: Stable patients get 3 or more months of medication at each visit, but instead of having 4 clinical appointments per year, they have 2 clinical appointments with a nurse or CO and 2 refill visits an lower-level cadre
- CAGs: Groups of stable patients meet in the community before each visit and select one member to visit the clinic to collect ARVs for all members; the number of members and frequency of appointments per year varies by district

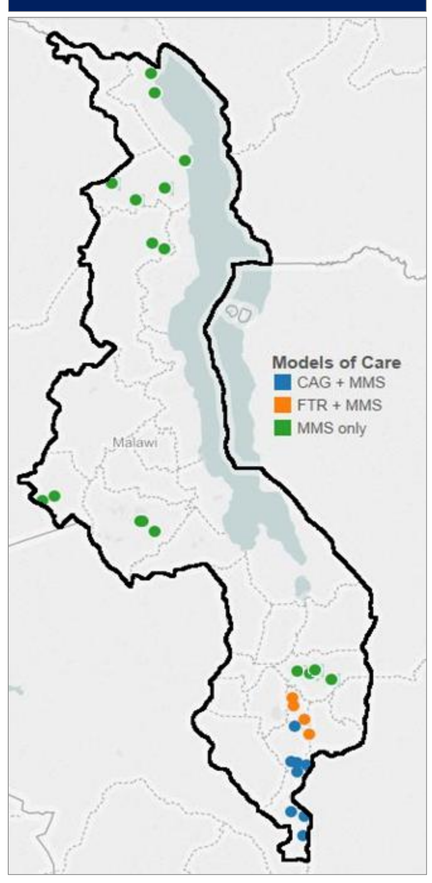
The models were compared against a hypothetical model of monthly clinic visits, which is used in many other national ART programs.

Methods

Data were collected in 30 purposefully selected sites that were implementing differentiated models of care (MOC) and represented a range of facility types and sizes. All sites implemented MMS, while four sites also offered FTRs and eight sites offered CAGs (Figure 1).

Data on servicing time, visit frequency and service delivery engagement (i.e., the cadre providing each service and the salary of that cadre) were measured through facility questionnaires and 1,473 observations of visit time and clinic flow. Based on this data, cost modeling was performed in Excel to identify average unit costs of each model and the expected resources required for scale up. The analysis also included ARVs and other commodity costs associated ART, based on previous research in Malawi,[1] in order to provide a comprehensive view of unit costs.

Figure 1: Study Facilities by MOC

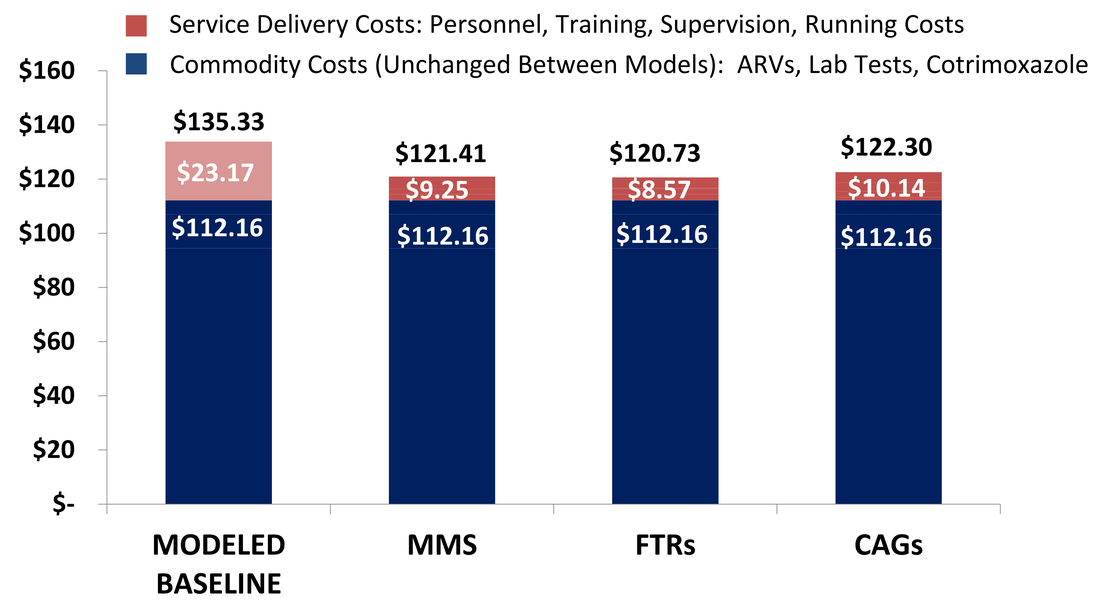


For comparison, the analysis also included a modelled baseline unit cost, which showed ART costs for a stable patient not enrolled in any of the MOC and making monthly facility visits. The ART unit cost for a stable patient not enrolled in differentiated care was estimated to be $135.33 per patient per year (PPPY).

Results

Annual per patient costs of MMS, FTRs and CAGs are similar and represent an estimated 10% reduction compared with a modeled baseline of monthly clinical visits.

Figure 2: Total ART Unit Costs by Model, Stable Patients per Year



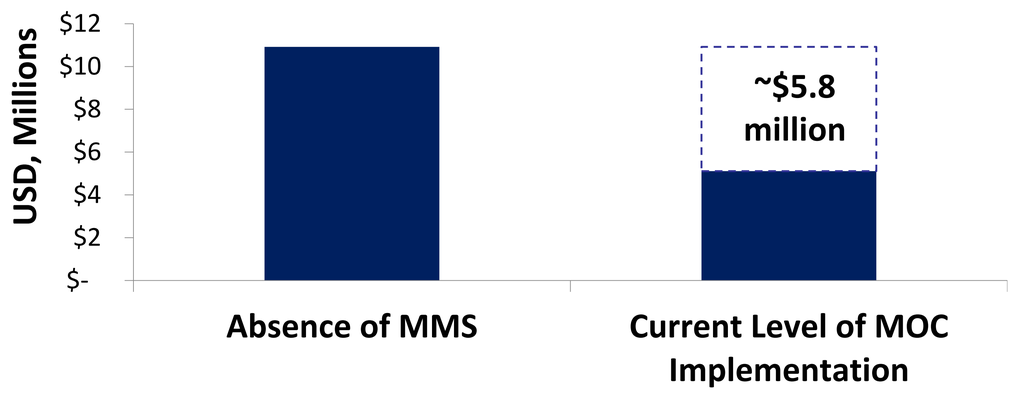
The costs of ARVs, laboratory tests and cotrimoxazole were held constant across models and accounted for over 92% of total unit costs across the differentiated models of care. These costs remain static because the type or frequency of commodities provision is not expected to change based on model.

Instead, differentiated models of care primarily drive changes in the personnel required to provide ART services (and associated training and supervision costs required to successfully implement each model). The MMS and CAGs model reduce personnel costs over baseline by reducing the number of facility visits for stable ART patients, and therefore the personnel time required to provide care. Service delivery costs in the FTR model were 7% lower than the MMS model because FTRs shift ART refill services to lower-level cadres called Health Surveillance Assistants (HSAs), which have lower compensation levels than a clinician). However, these cost reductions were somewhat counter-acted by the additional costs of training and supervision required for the FTR model as it is currently being executed.

Resource Needs for Scale Up of Differentiated Care Models

Monthly clinic visits for all stable patients in Malawi would cost $63.8 million per year. However, among these stable patients, we estimated that currently 93% are enrolled in MMS, 5% are enrolled in FTRs and 2% are enrolled in CAGs at a national level. This takes into account the facilities offering the models and percentage of enrolled patients in those sites. Based on these estimates of current implementation, $5.8 million per year has been saved by implementation of differentiated care models. Expanding participation in the MMS model or coverage of the FTR model would lead to $745,000 and $67,000 in additional savings, respectively. Expansion of CAGs is not projected to lead to savings given additional supervision costs required for implementation.

Figure 3: Total Resource Needs for ART Service Delivery, Stable Patients



Conclusion

Malawi has already generated efficiencies in ART service delivery by introducing MMS for stable patients. Limited additional savings could be realized by improving MMS coverage and, to a lesser extent, by rolling out the FTR model nationwide. Since the variation in service delivery costs are largely driven by human resource costs, savings would likely be greater in countries where salary levels are higher and represent a greater proportion of overall ART costs.

Sources: (1) Tagar E, Sundaram M, et al. Multi-country analysis of treatment costs for HIV/AIDS (MATCH): facility-level ART unit cost analysis in Ethiopia, *Malawi*, ***Rwanda, South Africa and Zambia. PLoS One. 2014;9(11):e108304.***

Acknowledgements

Ministry of Health, Lilongwe, Malawi; Médecins Sans Frontières – Belgium; Médecins Sans Frontières – France; Facility staff and clients at all sites visited throughout this study. Funding provided by Bill & Melinda Gates Foundation.

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