Costs of Differentiated Care

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BACKGROUND/INTRODUCTION

- Antiretroviral Treatment (ART) scale-up has yielded immense health benefits but has also contributed to increased workloads for clinicians and staff members at facilities providing HIV treatment.
- With the UNAIDS 90-90-90 targets, the need for alternative forms of ART delivery is more urgent than ever.
- Differentiated care presents a solution that can support the scale up of ART while alleviating the burden on health care systems.
- Strategy seeks to streamline and adapt HIV services according to the group-specific needs of people living with HIV
- Conducted a review of the costs of differentiated care in low-and-middle-income countries (LMICs) to identify the key cost drivers of differentiated care.

METHODS

- Performed a systematic literature review according to Cochrane and PRISMA guidelines.
- Studies were eligible for inclusion if they reported on a differentiated care strategy and the associated implementation costs.

Definition of Differentiated Care

- Any strategy that adopted a segmented approach to testing, linkage to care, or treatment of PLWH based on patient characteristics – ART adherence history, health state, or sociodemographic factors
- Segmented approach: modifies the intensity or form of health services deployed across diverse patient subpopulations.

Data Screening and Extraction

Abstracts and full-text articles of potentially relevant studies were independently reviewed and screened by N.T. and R.V.B based on predefined criteria. Data was extracted using a standardized data extraction form. Discrepancies regarding the eligibility of papers were resolved by discussion after review of the full-texts. Costs were adjusted to 2016 US dollars by converting to local currency units, multiplying by the ratio of each country's gross domestic product deflator (2016 deflator : base year deflator), and converting back to US dollars .

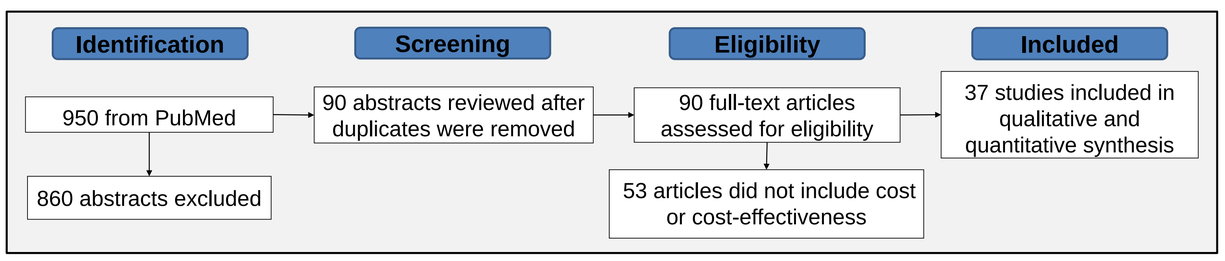


Figure 1. Search results

RESULTS

Facility-Based Individual Models

- ART visits are separated from clinic consultations
- Personnel costs in both Multi-Month Scripting (MMS) and Pharmacy-Only Refill Program (PRP) scenarios were lower than SOC
- Lower demands on clinician time
- As ART prices decrease, differences in personnel costs will have greater influence on cost-effectiveness
- MMS/PRP strategy could produce efficiency gains and cost savings

Study	Bango (South Africa, 2011)	Prust (Malawi, 2016)
Recurrent Cost (MMS/PRP:SOC)	0.91	0.66
Personnel Cost (MMS/PRP:SOC)	0.32	0.35

Table 1. Costs of MMS/PRP relative to SOC

Out-of-facility individual models

- Care is administered outside healthcare facilities
  - Home-Based Adherence and Care (HBC)
  - Mobile clinics
- Simulation studies wherein Home-Based Care (HBC)/Mobile cost more per person treated had additional costs due to transport-related expenses and extra personnel for HBC/mobile programs
- In randomized trials, HBC/Mobile recurring costs were lower than those of SOC when programs utilized a lower paid cadre of personnel such as lay counsellors
- Valuable for testing and promoting linkage to care in rural communities or areas far from HIV care facilities

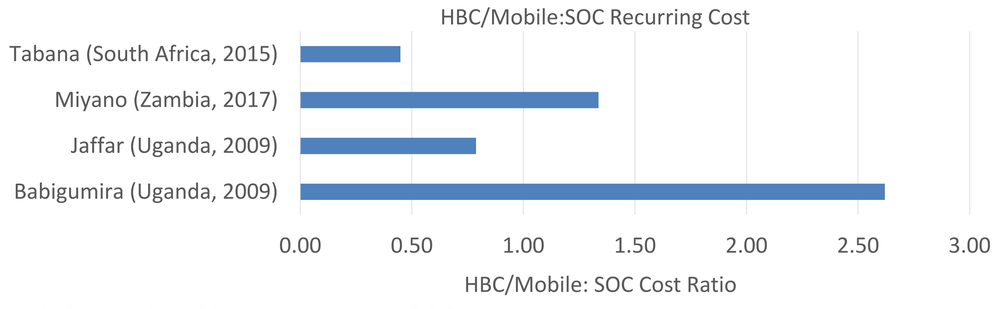


Figure 2. Costs of HBC/Mobile relative to SOC

RESULTS, continued

Group Models

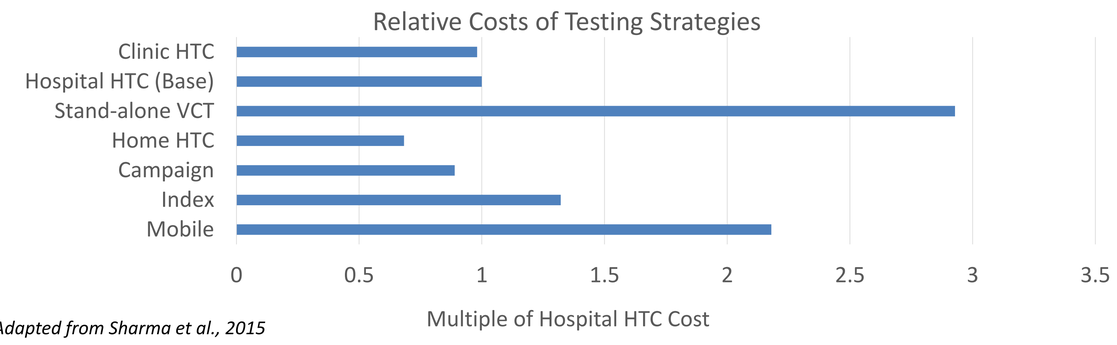
- Clients receive ART refills in a group
- Managed by clients or professional and lay health care staff
- Recurring costs (excluding ART) were lower in group strategies
  - Largely due to lower personnel costs and decreased load on clinic staff
- A potential driver of cost-savings and efficiency
- Impact could grow as more people initiate and eventually become stable on ART

Study	Bango (South Africa, 2011)	Prust (Malawi, 2016)
Recurring Cost (Group:SOC)	0.65	0.68
Personnel Cost (Group:SOC)	0.51	0.48

Table 2: Costs of Group strategies relative to SOC

Targeted Testing

- Wide spectrum of testing options can be deployed to facilitate differentiated care
- Optimal testing strategy depends on context (e.g. prevalence, rural vs. urban)
- Viral load testing can inform differentiated care
- Review by Sharma et al, 2015 found stand-alone HTC had highest cost per person
- Potential savings and greater efficiency could come from task-shifting and integration of services



Adapted from Sharma et al., 2015

Figure 3: Costs of various testing strategies relative to hospital HTC

DISCUSSION

The cost drivers of differentiated care were determined by both programmatic and environmental features.

Programmatic Features

- ART costs comprised the majority of program costs. With the continuing reduction in ART costs, overall program costs should decrease over time.
- Personnel costs also represented a significant proportion of program costs. These costs were strongly impacted by the program's staff composition and pay structure.
- Programs making effective use of task-shifting achieved an economically favorable staff composition while producing outcomes equivalent to standard of care.
- Start-up costs in the form of training costs and infrastructure investment were significant cost items.
- Differences in program costs will have a stronger impact on cost-effectiveness as ART prices decline.

Environmental Features

- The prevalence of HIV in the region served by the program has a strong impact on the unit cost per HIV-positive individual treated. Programs situated in high HIV prevalence regions could achieve lower unit costs per person treated.
- Patient willingness to engage in the program affects cost-effectiveness. This is largely driven by the economic costs to the patient and any perceived stigma that may be experienced while seeking HIV treatment.
- Successful strategies to keep patients in engaged in care will seek to minimize patient costs due to transport expenses and time away from work.
- Innovative strategies to reduce the economic cost and stigma experienced by patients seeking HIV care will encourage PLWHIV to seek care early and adhere to treatment.

NEXT STEPS/WAY FORWARD

- Tailor interventions and treatment intensity to the unique health characteristics of the population to be served.
- Consider how best to leverage existing infrastructure and manpower so as to contain costs while scaling up programs.
- Minimize economic costs to patients:
  - Transportation costs for patients living far from treatment centers
  - Excessive time spent waiting at congested clinics
  - Significant opportunity cost in the form of lost wages
- Minimize the stigma experienced by PLWHIV seeking care
- Standardize reporting cost items to better evaluate how each part of program affects the whole
- Modelling studies to discover proportion of people that need to be in differentiated care programs to increase efficiency

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