

Mapping of Ongoing Costing and Efficiency Studies
Pre-Read for the Meeting of the Technical Working Group on HIV Costing and Technical Efficiency
6-7 November 2014

Studies on Costs, Determinants of Costs, and/or Cost-Effectiveness of Prevention Interventions (6 studies)

2. ORPHEA (Optimizing the Response to Prevention: HIV Efficiency in Africa)	5
7. Avahan – HIV Prevention to Key Populations in India	10
10. Estimating the Provider and Client Cost of Voluntary Medical Male Circumcision in South Africa	12
12. Health Policy Initiative Costing Task Order Studies	13
23. Cost of Prevention of Mother-to-Child Transmission (PMTCT) Services Using Option B+ in Tanzania	20
26. Safe Love Campaign Cost-Effectiveness Analysis	23

Studies on Costs, Determinants of Costs, and/or Cost-Effectiveness of ART Interventions (14 studies)

1. MATCH (Multi-Country Analysis of Treatment Costs for HIV/AIDS)	4
3. Identifying the Costs of Community-Oriented HIV Service Delivery Models for Successful Long-Term Engagement in Care	6
5. ABCE Project (Access, Bottlenecks, Costs, and Equity)	8
11. ART Unit Cost Study in Cote d'Ivoire	12
12. Health Policy Initiative Costing Task Order Studies	13
14. Costs of Delivering ART to Children	14
16. INROADS: Nurse-Initiated and –Managed ART (NIMART)	15
18. Cost-Effectiveness of Same-Day ART Initiation (RapIT)	16
21. Costs of Comprehensive HIV Treatment at Out-Patient Clinics in Tanzania	18
22. Costs of Comprehensive HIV Treatment at Out-Patient Clinics in Namibia	19
28. Costs and Cost-Effectiveness of Expanding ART Eligibility to Include an HIV Viral Load Criterion in Swaziland	25
31. Earlier Initiation of Antiretroviral Therapy: Cost Implications	28
32. Efficiency Assessment of the National HIV/AIDS Response in Brazil	29
33. The Relation between Effectiveness and Efficiency: Economic Impact of suboptimal performance in HIV treatment initiation and viral suppression	30

Studies on Costs, Determinants of Costs, and/or Cost-Effectiveness of Testing and Counseling Interventions (8 studies)

2. ORPHEA (Optimizing the Response to Prevention: HIV Efficiency in Africa)	5
3. Identifying the Costs of Community-Oriented HIV Service Delivery Models for Successful Long-Term Engagement in Care	6
12. Health Policy Initiative Costing Task Order Studies	13
15. INROADS: HTC Costing	14
24. Costs and Cost-Effectiveness of HIV Testing and Counseling Modalities in Tanzania	21
27. Cost-Effectiveness of Point of Care CD4 Testing on HIV Diagnosis, Linkage to Care, and Time to ART Initiation	24
28. Costs and Cost-Effectiveness of Expanding ART Eligibility to Include an HIV Viral Load Criterion in Swaziland	25
30. SLMTA Laboratory Strengthening Cost Analysis in Kenya	27

Studies on Costs, Determinants of Costs, and/or Cost-Effectiveness of Interventions Targeting Adherence, Care, and Support (9 studies)

3. Identifying the Costs of Community-Oriented HIV Service Delivery Models for Successful Long-Term Engagement in Care	6
8. STRIVE Study	11
12. Health Policy Initiative Costing Task Order Studies	13
13. Cost-Outcome Analysis of Adherence Support Programs	13
17. Costs and Cost-Effectiveness of Electronic Patient Adherence Monitoring	15
19. Cost-Effectiveness of ART Adherence Group for Long-Term Management of Clinically Stable ART Patients	16
20. Evaluation of Effectiveness and Cost of Integrated Access to Care and Treatment (I-ACT) Support Groups	17
25. Cost Effectiveness of Link to Care Strategies in Kenya	22
27. Cost-Effectiveness of Point of Care CD4 Testing on HIV Diagnosis, Linkage to Care, and Time to ART Initiation	24

Studies on Costs, Determinants of Costs, and/or Cost-Effectiveness of Integrating HIV & Complementary Health Services (6 studies)

3. Identifying the Costs of Community-Oriented HIV Service Delivery Models for Successful Long-Term Engagement in Care	6
6. Integra Initiative: Assessing the Benefits of Integrated HIV & Reproductive Health Services	9
8. STRIVE Study	11
9. XTEND/XPHACTOR – Detecting TB in those with HIV in South Africa	11
12. Health Policy Initiative Costing Task Order Studies	13
29. Costs and Cost-Effectiveness of TB Diagnosis Using GeneXpert in Swaziland	26

Studies on Costs, Determinants of Costs, and/or Cost-Effectiveness of Other Interventions not listed above (2 studies)

8. STRIVE Study	11
12. Health Policy Initiative Costing Task Order Studies	13

Studies on Efficiency of National HIV Plans/Programs (2 studies)

4. HIV Technical Efficiency Studies in Several Countries	7
32. Efficiency Assessment of the National HIV/AIDS Response in Brazil	29

Studies on Efficiency of Prevention and Treatment Interventions (4 studies)

2. ORPHEA (Optimizing the Response to Prevention: HIV Efficiency in Africa)	5
4. HIV Technical Efficiency Studies in Several Countries	7
7. Avahan – HIV Prevention to Key Populations in India	10
33. The Relation between Effectiveness and Efficiency: Economic Impact of suboptimal performance in HIV treatment initiation and viral suppression	30

1. MATCH (Multi-Country Analysis of Treatment Costs for HIV/AIDS)	
Location	161 health facilities in Ethiopia, Malawi, Rwanda, South Africa, and Zambia
Organizations Involved	CHAI, BMGF, CGD, CDC/USAID, and the countries
Scope	Unit Costs for ART at the facility level.
Goals	<p>This study aims to answer the following questions:</p> <ul style="list-style-type: none"> • What are typical costs of ARV treatment per patient year in each country? • How do these costs vary across countries, funding streams, administrators, facility types, rural/urban location, and other factors? How do patient outcomes vary? • What are the drivers of this variation in treatment cost across sites? • What lessons can be learnt from this variation to improve the efficiency and effectiveness of treatment at the global, national, and facility level?
Methodology	Top Down Approach: The total yearly costs were analyzed and costs for ART (including drugs, ART delivery, and pre-ART) were isolated, based on a combination of micro-costing, step-down accounting, and gross costing approaches. This was then divided by patient-years (using outcomes data to get a number of patients on ART)
Status	Preliminary results available; currently doing additional data collection in additional facilities
Findings	<ol style="list-style-type: none"> 1. Facility-level ART costs in LICs and LMICs are lower than previously thought, ranging from \$136-278 per patient-year (costs are higher in South Africa) 2. Facility have demonstrated the ability to keep patients alive and on ART, with variation. Average annual attrition rates for established patients range from 2% to 8%. Retention rates for new patients are lower and correlated with CD4 at initiation.
Implications	<ul style="list-style-type: none"> • Aggressive scale-up in LICs/LMICs should be affordable • Given low cost of treatment in LICs/LMICs, savings opportunities at the facility level are limited outside of South Africa • To generate savings, focus is needed on optimization efforts on non-facility treatment and other program costs. Ongoing focus on drug optimizing is also required to prevent costs from increasing as patients move from D4T to TDF. • There are opportunities to improve outcomes without substantially increasing cost, including driving earlier initiation of treatment
Source	<p>-Website: http://thedata.harvard.edu/dvn/dv/chaighf/faces/study/StudyPage.xhtml?studyId=85882&tab=catalog</p> <p>-Slides: Unit Costing Methodologies, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p>

2. ORPHEA (Optimizing the Response to Prevention: HIV Efficiency in Africa)

Location	261 sites across Kenya, Zambia, South Africa, and Rwanda
Organizations Involved	CISIDAT, Mexican National Institute of Public Health, UNAIDS, World Bank, BMGF, PEPFAR
Scope	Determinants of efficiency of HIV prevention services (PMTCT, MMC, HTC, Prevention for Sex Workers)
Goals	<p>This study aims to:</p> <ul style="list-style-type: none"> • Estimate the total costs and average cost per output • Estimate levels and determinants of efficiency • Provide recommendations to develop management interventions and/or regulation or incentive mechanisms
Methodology	<p>Costs measured include personnel, other recurrent costs (utilities, drugs, supplies, training, supervisions visits, etc.), and capital and building costs. A combination of micro-costing, step-down accounting, and gross costing approaches was used. Direct observation was used to measure staff time allocation to PMTCT, HTC, and MMC. Analysis of output cascades (attrition) and vignettes and patient exit interviews (competence and knowledge, service received) were used to measure quality. Constraints to determine efficiency included: country/location, urban vs. rural setting, HIV prevalence, size of demand, and supply of services. Determinants of efficiency included: structure and governance, training and staff composition, management, accountability, incentive, and sanctions.</p>
Status	Preliminary results available; not yet any published literature
Findings	Average unit costs were significantly more expensive in facilities where funding was linked to performance and in facilities with smaller numbers of clients. Other results are pending.
Implications	Not yet available
Source	<p>-ORPHEA slides, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p> <p>-Slides: Unit Costing Methodologies, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p>

3. Identifying the Costs of Community-Oriented HIV Service Delivery Models for Successful Long-Term Engagement in Care

Location	To Be Decided
Organizations Involved	Pangaea Global AIDS Foundation, CHAI
Scope	25 case studies, covering a mix of community- and facility-based services addressing different points in the HIV treatment cascade, will be developed to identify effective approaches for long-term engagement in care. Interventions include HTC/linkage to care, health & treatment literacy, patient navigation & re-engagement, psycho-social support, accessible/respectful health services, accessible drug delivery to patients, adherence support, and integration within health services/between health and community systems.
Goals	While the critical importance of community involved across the treatment cascade has been established, this study aims to address the lack of data and evaluation of community-based programs and the costs of these programs compared to facility-based services.
Methodology	<ul style="list-style-type: none"> • Projects for analysis will be identified through literature reviews, donor interviews, community networks, country-level program management, and health service implementers • Project analysis will be based on existing data from program evaluations and reports and through interviews and site visits • Program effectiveness will be based on alignment with pre-established indicators of success. Qualitative analysis from interviews and site visits will also be provided • Cost estimates will be developed for each program (by CHAI)
Status	Ongoing – no results yet available
Findings	<p>While no results are yet available from the case studies, three central messages were extracted from two consultations in 2012 that motivated this study:</p> <ol style="list-style-type: none"> 1. Service delivery strategies and models developed by affected populations should be recognized, resourced, evaluated, and documented. Successful approaches should be scaled up at every step of the HIV treatment cascade. 2. Treatment optimization for key affected populations requires enabling environments which protect and promote their rights. 3. Psychosocial, legal, and nutritional support programs and advocacy and human rights training efforts are considered integral to treatment optimization
Implications	Not yet available
Source	Slides, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013

4. HIV Technical Efficiency Studies in Several Countries	
Location	Brazil, Kenya, Lesotho, Malawi, Swaziland, Ukraine, and Zambia
Organizations Involved	The World Bank, Mexican National Institute of Public Health, UNAIDS, UNSW, NACs, MOHs, UCDC, and CHAI
Scope	Assess how the governments in these countries can deliver the national HIV programs and selected HIV services most efficiently with actionable areas for efficiency improvement at multiple levels (service provider, district, province, national), in order to inform national strategies.
Goals	<p>The goals of these studies are to:</p> <ul style="list-style-type: none"> • Provide evidence on how to efficiently scale-up effective HIV services • Diagnose and improve efficiency • Provide pragmatic (track-able and cost-able) recommendations to maximize the delivery of HIV services for the lowest cost, without compromising quality • Track implementation of recommendations and provide evidence of cost savings • Ultimately, this will help improve the efficiency of HIV program implementation
Methodology	<p>Varies by study. In Zambia, for example, the studies will investigate:</p> <ul style="list-style-type: none"> • How are HIV services being delivered? • How could the implementation processes involved in the different service delivery models be streamlined? • How could service delivery models be better targeted to the right geographic and epidemic settings? • What is the quality of each service delivered and could it be improved? • How much does each of the service delivery models cost to implement and could it be implemented at lower cost? <p>Data Collection: Data are gathered through desk review, key informant interviews, focus group discussions, and questionnaires conducted through face-to-face interviews</p> <p>Statistical Analysis: Process maps for each service delivery model are quantitatively analyzed to determine inefficiencies in service delivery processes, using a combination of descriptive and comparative analyses, data envelopment analysis, and focus group interpretation.</p>
Status	Ongoing – for example, results for Zambia will be available in December
Findings	Not yet available
Implications	Not yet available
Source	<p>-Slides, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p> <p>-National HIV Program Efficiency Study Protocol – Zambia, The World Bank, September 2012</p>

5. ABCE Project (Access, Bottlenecks, Costs, and Equity)	
Location	7 countries (may increase to 15): Zambia, Kenya, Uganda, and India (all HIV-specific, including more than 200 facilities), and Lebanon, Ghana, and Colombia (all not HIV-specific)
Organizations Involved	IHME, BMGF
Scope	Facility-level data collection in the seven countries over five years on expenditure, outputs (e.g. outpatient visits, occupancy rates), personnel, and more, by location and type of facility. ABCE focuses on health system service delivery and the four components (Access, Bottlenecks, Cost, and Equity) that contribute to optimal delivery of health services.
Goals	<p>The goal of the ABCE project is to collect and generate the evidence base for improving the cost effectiveness and equity of health systems. This includes supporting the decision-making needs of policymakers and stakeholders in achieving improved and more equity outcomes. In the HIV focus countries, another goal is to assess the determinants of ART cost-effectiveness, with aims to answer:</p> <ul style="list-style-type: none"> • What is the cost per completed year of ART, and what is the average annual cost to be on ART? • What facility and patient characteristics are associated with lower costs and better outcomes? • How much would it cost to scale up ART programs further?
Methodology	ABCE brings together existing data sources and primary data collection at health facilities as needed, including in-depth facility surveys and facility inventories across a range of service delivery platforms, as well as patient exit interviews and chart extractions to learn more about ART costs and outcomes. These data are used to produce facility-level analyses on the costs of care and the bottlenecks that impede services. Facility-level costs are allocated to ART programs based on statistical inferences. IHME’s perspective on estimating costs is that expenditure equals the sum of unit costs multiplied by volume plus the cost of inefficiencies, the latter of which is non observable. IHME employs an estimation strategy to deal with “chaotic” inefficiency, which identifies which inefficiencies are avertable and identifies the frontier capacity to understand the role of the extensive margin.
Status	Ongoing
Findings	Not yet available – there will be 4-6 core papers per country
Implications	Not yet available
Source	<p>-Slides, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p> <p>-Project Website: http://www.healthdata.org/dcpn/abce-plus and http://www.healthdata.org/dcpn/abce</p> <p>-Slides: Unit Costing Methodologies, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p>

6. Integra Initiative: Assessing the Benefits of Integrated HIV & Reproductive Health Services

Location	Kenya and Swaziland
Organizations Involved	LSHTM, Population Council, International Planned Parenthood Federation, BMGF
Scope	Efficiency of integrated HIV and Sexual Reproductive Health (SRH) services
Goals	<p>The end goal of INTEGRA is to strengthen the evidence on benefits and costs of integrated HIV and reproductive health services to reduce HIV (and associated stigma) and unintended pregnancies. Objectives to achieve that goal include:</p> <ul style="list-style-type: none"> • Estimate the total and average costs of integrated HIV-SRH services • Understand the cause of cost variation of HIV and SRH services • Explore the relationships between the extent of integration and costs and technical efficiency
Methodology	Costs collected under INTEGRA include full facility costs (personnel, capital, recurrent, etc.), but no above-facility level costs. Overhead costs were apportioned to HIV. INTEGRA used stochastic frontier analysis to do the costing analysis and data envelopment analysis to do the technical efficiency analysis. An index of integration was also developed to measure the extent of HIV-SRH integration. INTEGRA did control for certain types of quality of services.
Status	All results are finalized and in various forms of submission. The descriptive cost analysis is in submission, the cost variation analysis is finalized and ready for submission, and the technical efficiency manuscript is in its final draft. The index of integration publication is in submission. A paper has been published comparing integrated HTC costs to standalone HTC costs. A paper is also being published on how human resources and their workload are impacted by integration.
Findings	<p>Cost Analysis Findings:</p> <ul style="list-style-type: none"> • Descriptive costs analysis suggests there is large variation in unit costs, pointing to significant potential to improve efficiency • Determinants of costs included: number of visits per clinical staff member/equivalent FTE, facility type, and location of facility • The range of HIV-SRH services provided in one room had a negative impact on costs (more services provided in a small space, controlling for other factors, was associated with lower costs). Costs also fell for a provider providing multiple services. • Economies of scale are in scope for some specific services combinations (specifically STI and counseling & testing) but not all. <p>Technical Efficiency Analysis Findings:</p> <ul style="list-style-type: none"> • Integrated services have a high level of inefficiency in general • Ownership (public or private) and facility type drive efficiency. Public facilities were more efficient. • The number of services provided improved technical efficiency, but sharing rooms (more services in one space) did not have an impact on technical efficiency
Implications	Not yet available
Source	<p>-Slides: Unit Costing Methodologies, previous Costing and Efficiency TWG Meeting, Washington DC, May 2013</p> <p>-INTEGRA draft publications</p> <p>-Discussion with Anna Vassall, LSHTM</p>

7. Avahan – HIV Prevention to Key Populations in India

Location	127 sites in India
Organizations Involved	LSHTM, KHPP, BMGF
Scope	Determinants of efficiency of HIV prevention services to high risk groups
Goals	<p>Aims of this study include:</p> <ul style="list-style-type: none"> • Estimate the total and average costs of HIV prevention services per person reached. • Understand the determinants of cost variation and technical efficiency • Provide policy recommendations on the best model of HIV prevention services
Methodology	Comprehensive costs were measured at the NGO site level and national level (at 127 sites over four years). Stochastic frontier analysis was used to explore cost variation and data envelopment analysis was used to explore technical efficiency.
Status	Descriptive costs results have been published, and other results (cost variation analysis, data envelopment analysis, and comparative analysis of above-NGO-service-level costs) are in submission.
Findings	<p>Cost Findings:</p> <ul style="list-style-type: none"> • 65% of costs incurred are above the NGO service level • Cost variation is driven by NGO scale, the extent of community involvement, the above-service-level support provided to NGOs, and the way clinical services are funded <p>Technical Efficiency Findings</p> <ul style="list-style-type: none"> • NGOs with previous experience in HIV are not more efficient than those without experience. • Having several NGOs operating in the same project can improve efficiency. • The way NGOs measure their population in need and plan resources can affect efficiency.
Implications	These findings support the conclusion that above-service-level support is a key driver of technical efficiency. Other implications are pending.
Source	<p>-Avahan Draft Publication</p> <p>-Discussion with Anna Vassall, LSHTM</p>

8. STRIVE Study	
Location	Multiple trials in India, South Africa, Tanzania, and Kenya
Organizations Involved	LSHTM, KHPP, Wits Health Consortium, other STRIVE partners, DFID
Scope	Costs and cost-effectiveness of structural HIV interventions
Goals	The goal of STRIVE is to provide cost and cost-effectiveness information on structural HIV interventions. The interventions include cash transfer programs, community support, integrated HIV & intimate partner violence programs, and nutrition & HIV programs
Methodology	Costing methods vary by each trial (which will run over different points over a seven-year period). A mixture of prospective and retrospective costing methods was used. Efforts were also undertaken to incorporate a societal perspective where practical. Costs were primarily used in cost-effectiveness and affordability analyses.
Status	Some results from some trials are available, while other trials have not yet started.
Findings	Analysis of data from one of the trials shows that the incremental costs of adding in community mobilization activities to HIV prevention services for high risk groups is cost-effective. Other results are pending or the trials have not yet begun.
Implications	Not yet available
Source	-Discussion with Anna Vassall, LSHTM

9. XTEND/XPHACTOR – Detecting TB in those with HIV in South Africa	
Location	South Africa
Organizations Involved	LSHTM, Aurum, University of Cape Town, BMGF
Scope	Analyze of the costs of TB screening and diagnosis (using Xpert) per PLHIV
Goals	This study aims to: <ul style="list-style-type: none"> • Estimate the costs of Xpert during rollout in South Africa • Develop TB diagnostic costing methods • Assess economies of scale in TB screening and diagnosis
Methodology	Comprehensive cost data were collected from site level and for supporting laboratory services. Extensive patient and user costing studies were also incorporated.
Status	Three costing papers are in submission
Findings	<ul style="list-style-type: none"> • Bottom-up and top-down costing methods yield substantially different results. • Economies of scale can be found using both methods. • Xpert introduction in South Africa is cost neutral due to downstream consequences of introduction.
Implications	Not yet available
Source	-XTEND/XPHACTOR papers in preparation -Discussion with Anna Vassall, LSHTM

10. Estimating the Provider and Client Cost of Voluntary Medical Male Circumcision (VMMC) in South Africa	
Location	27 VMMC facilities in South Africa (and interviews with approximately 200 clients)
Organizations Involved	Health Policy Project (Futures Group, Futures Institute), South Africa's National Department of Health, USAID, CDC
Scope	Unit cost of VMMC at the facility level and costs incurred by clients seeking out VMMC services
Goals	<p>The objectives of this study are:</p> <ul style="list-style-type: none"> To determine the current unit costs of providing VMMC and the current economic cost incurred by clients to undergo male circumcision by: Mode of service delivery (fixed, mobile, and outreach sites); Geography (provinces); Seasonal fluctuations in client load (will be investigated as a sub-analysis with three PEPFAR/SA sites, to be determined); Public/NGO versus private providers To make recommendations based on the findings of the study
Methodology	Interviews were conducted with implementers at the facility level and above-facility level. Interviews were also conducted with circumcision clients and their guardians at the facility.
Status	IRB approval is currently being reviewed, with data collection slated to begin in January 2015
Findings	Not yet available
Implications	Not yet available
Source	-Information provided by Lori Bollinger, Futures Institute -Protocol available upon request

11. ART Unit Cost Study in Cote d'Ivoire	
Location	Cote d'Ivoire
Organizations Involved	Health Policy Project (Futures Group, Futures Institute), USAID, CDC
Scope	Unit cost of adult and pediatric ARV treatment throughout Cote d'Ivoire
Goals	<p>The objectives of this proposed costing exercise are to:</p> <ul style="list-style-type: none"> Determine the current unit cost of providing routine ART to children and adults Assess cost differences by level of service delivery and geography Provide policymakers & program managers with data to assist in projecting costs of scaling up access to pediatric & adult ART Assess future courses of action and provide recommendations based on current enrollment and unit costs
Methodology	The study will review secondary hospital records for patients receiving treatment between January and December 2013
Status	Data collection has not yet been initiated
Findings	Not yet available
Implications	Not yet available
Source	-Information provided by Lori Bollinger, Futures Institute -Protocol available upon request

12. Health Policy Initiative (HPI) Costing Task Order Studies	
Location	Georgia, Namibia, Tanzania, South Africa, Botswana, Zimbabwe, Zambia, Mozambique
Organizations Involved	Health Policy Initiative Costing Task Order (Futures Group, Futures Institute), USAID
Scope	Various costing studies conducted around the issues of HIV/AIDS
Goals	Varies by study
Methodology	Most studies did facility-based costing (e.g. HTC in Botswana, VMMC in Tanzania). In addition, there were various studies looking at the costs of community interventions (e.g. BCC in Namibia, MAT in Georgia). There were also studies on transitional financing (Botswana) and resource allocation (KwaZulu-Natal province in South Africa).
Status	All studies have been completed and final reports available on the HPI Costing task order website (see below).
Findings	Findings vary by study – see individual reports on website.
Implications	Implications vary by study – see individual reports on website.
Source	-Website: http://www.healthpolicyinitiative.com/index.cfm?id=publications&get=taskorder&taskorder=6 -Information provided by Lori Bollinger, Futures Institute

13. Cost-Outcome Analysis of Adherence Support Programs	
Location	Kenya or South Africa – to be determined
Organizations Involved	Futures Institute, Population Council, USAID (Project SOAR)
Scope	Cost-outcome analysis of adherence support programs
Goals	To assess cost-outcome analysis of adherence support programs; other goals to be determined
Methodology	Gather cost and outcome data across a number of different types of adherence support programs to assess the cost-outcome ratios
Status	Not yet started – planned to begin in 2015
Findings	Not yet available
Implications	Not yet available
Source	Information provided by Lori Bollinger, Futures Institute

14. Costs of Delivering ART to Children	
Location	South Africa
Organizations Involved	Wits Health Consortium (HE ² RO), PEPFAR
Scope	Costs of first-line ART for children
Goals	This study aims to estimate the average cost per patient treated and per successful treatment outcome (patient in care and responding) for first-line ART for children. This information will fill an information gap needed for planning and budgeting, since little is known about the cost of pediatric ART in low- and middle-income countries.
Methodology	Data on outpatient resource use and treatment outcomes of 288 children was collected from two Johannesburg public hospitals from 2005 and 2009. Patient-level resource use was estimated from patient records. Unit cost data came from site accounts and public-sector sources. Patient outcomes at month 12 and 24 after initiation were defined based on weights, CD4 cell counts/percentages, viral loads, and the presence of new WHO stage 3/4 conditions.
Status	Finalized in 2013
Findings	The average cost per patient in care and responding was \$830 in year 1 and \$717 in year 2 in one hospital and \$678 and \$782 in the other. ARV drugs comprised 33–52% of total cost, clinic visits 23–31%, lab tests 12–16%, and fixed costs 8–18%.
Implications	Costs varied between the two clinics but were comparable to those of adult ART. Few very young children accessed ART in either clinic and those who did were already very ill, emphasizing the importance of early infant treatment.
Source	PEPFAR Project Assessment document

15. INROADS: HTC Costing	
Location	South Africa
Organizations Involved	Wits Health Consortium (HE ² RO), PEPFAR
Scope	Costs of various delivery models for HTC in South Africa
Goals	The purpose of this study is to determine the cost of different delivery models for HTC in South Africa, in order to allow for more accurate budgeting by the South African National Department of Health. Specific questions this analysis seeks to answer include: <ul style="list-style-type: none"> • Using a particular delivery model of HTC, what was the cost per patient tested? • What was the cost per patient diagnosed HIV positive?
Methodology	This study uses a systematic random sampling methodology. Data were collected from urban clinics and hospitals in Gauteng province.
Status	Currently in data review
Findings	Not yet available
Implications	Not yet available
Source	PEPFAR Project Assessment document

16. INROADS: Nurse-Initiated and -Managed ART (NIMART)	
Location	South Africa
Organizations Involved	Wits Health Consortium (HE ² RO), PEPFAR
Scope	Cost and cost-effectiveness of NIMART and of doctor managed care and treatment in South Africa
Goals	The purpose of this analysis is to determine the outcomes, cost, and cost-effectiveness associated with NIMART program in South Africa in comparison the doctor managed care and treatment.
Methodology	This study uses systematic random sampling methodology. Data were collected from urban clinics and hospitals in Gauteng province.
Status	Currently in data review
Findings	Not yet available
Implications	Not yet available
Source	PEPFAR Project Assessment document

17. Costs and Cost-Effectiveness of Electronic Patient Adherence Monitoring	
Location	South Africa
Organizations Involved	Wits Health Consortium (HE ² RO), PEPFAR
Scope	Per-service costs of all services provided at a primary health care (PHC) clinic in South Africa (and building a costing and budgeting tool for use by other clinics in South Africa)
Goals	The proposed trial will measure the effectiveness and cost-effectiveness of using electronic patient adherence monitoring in patients at high risk of failing second-line antiretroviral therapy (ART) at Themba Lethu HIV clinic in Johannesburg, compared to the standard of care, which involves optimized adherence counseling. A feasibility study has already been conducted which generated data on the use of the devices in patients on second-line ART.
Methodology	Not yet available
Status	Planned but not yet begun
Findings	Not yet available. The feasibility study found that electronic patient adherence monitoring resulted in modest improvement in adherence and a decrease in viral load.
Implications	Not yet available
Source	PEPFAR Project Assessment document

18. Cost-Effectiveness of Same-Day ART Initiation (RapIT)

Location	South Africa
Organizations Involved	Wits Health Consortium (HE ² RO), National Institutes of Health (NIH)
Scope	Feasibility, effectiveness, and cost-effectiveness of rapid ART initiation
Goals	This study aims to identify a new way to improve outcomes of patient diagnosed with HIV and reduce medical care costs associated with late treatment initiation.
Methodology	Randomized strategy evaluation – outpatient, non-pregnant, HIV-positive adults coming to a South African clinic for an HIV test who are eligible for ART are randomly selected for either rapid ART initiation or standard care. Cost-effectiveness is being analyzed as the cost per patient achieving viral suppression within ten months of study enrollment.
Status	Preliminary analysis of first three months since enrollment submitted to the Conference on Retroviruses and Opportunistic Infections for 2015 (CROI 2015)
Findings	Not yet available
Implications	Not yet available
Source	-Website: http://www.bu.edu/cghd/our-work/projects/rapit-rapid-initiation-of-antiretroviral-therapy-to-promote-early-hiv-aids-treatment-in-south-africa/ -Correspondence with Gesine Meyer-Rath, HE ² RO

19. Cost-Effectiveness of ART Adherence Groups for Long-Term Management of Clinically Stable ART Patients

Location	South Africa
Organizations Involved	MSF, University of Cape Town (UCT)
Scope	Cost and cost-effectiveness of ART adherence groups
Goals	The goals of this study are to measure the costs and cost-effectiveness of an ART adherence club and compare these with the costs and cost-effectiveness of care using a mainstream model.
Methodology	Data were collected on costs and outcomes from a large ART clinic in a township outside of Cape Town. Cost-effectiveness was defined as cost per patient year in care.
Status	A cost analysis including only staff costs has finished and was presented at ICASA 2013; updates with more cost items are underway
Findings	Preliminary findings show that the cost per patient year was \$58 for the ART club model, versus \$109 in the mainstream model of care
Implications	Not yet available
Source	-Correspondence with Gesine Meyer-Rath, HE ² RO - http://www.msf.org/sites/msf.org/files/reaching_closer_home.pdf

20. Evaluation of Effectiveness and Cost of Integrated Access to Care & Treatment (I-ACT) Support Groups

Location	South Africa
Organizations Involved	SA Partners (SAP)
Scope	Cost and effectiveness of pre-ART and ART support groups
Goals	The goal of the I-ACT program is to promote early recruitment of PLHIV into care and support programs, in order to reduce loss of follow-up from the time of diagnosis until the start of ART. I-ACT support groups are designed to empower PLHIV and minimize loss to follow-up of pre-ART and ART clients. The support groups also serve as a link to the community. The goal of this study is to measure the costs and effectiveness of these support groups, which have been identified as a best practice and are being rolled out in Eastern Cape province in South Africa.
Methodology	Costs and outcomes will be measured in support groups at facilities in Eastern Cape province.
Status	Ongoing
Findings	Not yet available
Implications	Not yet available
Source	-Correspondence with Gesine Meyer-Rath, HE ² RO - http://iasociety.org/Abstracts/A200746326.aspx

21. Costs of Comprehensive HIV Treatment at Out-Patient Clinics in Tanzania

Location	Tanzania
Organizations Involved	CDC, ICF, Tanzanian Ministry of Health
Scope	Annual per-person costs of providing comprehensive out-patient, facility-based HIV care and treatment at 20 sites in Tanzania, from both patient and program perspectives.
Goals	<p>This study will address five principal objectives:</p> <ul style="list-style-type: none"> • To estimate the annual per-person costs of providing comprehensive out-patient, facility-based HIV care and treatment at sites in Tanzania, from both patient and program perspectives. • To evaluate the range of costs for comprehensive HIV treatment across different sites and to assess how factors associated with the program model and site context influence costs. • To evaluate the differences in program costs between patient types—ART patients vs. pre-ART patients, newly-initiating ART patients vs. established ART patients, and pediatric ART patients vs. adult ART patients. • Understand the source of support for principal cost components to guide resource planning for scale-up • To investigate the long-run cost shifts in the provision of CTC services. <p>The secondary objectives for the study are:</p> <ul style="list-style-type: none"> • Estimate patient costs, including out-of-pocket expenses, and time & travel costs. • Generate an empirical database to parameterize Tanzania-specific ART Cost Projection Model.
Methodology	<p>The study will use methodology similar to the previous PEPFAR ART Cost studies conducted by CDC-ICF in 9 countries (including Tanzania). The costing analysis will be conducted from a programmatic perspective, collecting data on the total economic costs incurred by each program to provide comprehensive HIV treatment, and considering all sources of financial or in-kind support. This study will be conducted using the sample of 10 publicly-funded CTCs in Tanzania that were previously sampled in 2008-2009, with the addition of 5-10 new sites selected for this study. Cost data will be collected through a retrospective review of 12 months of existing records relating to resource utilization and costs (e.g., supply logs, equipment inventories, utility bills, invoices) and interviews with facility and supporting organizations personnel. Data on patient out-of-pocket costs will be collected through a patient survey, via in-person data collection during clinic visits and phone interviews with patients that have had at least one prior appointment at the clinic (i.e. are not new patients) and who have missed their most recent appointment at the clinic to address selection bias associated with convenience sampling at the clinic.</p>
Status	Ongoing. Data collection is expected to commence in February 2015.
Findings	Not yet available
Implications	Not yet available
Source	Internal CDC-ICF documents

22. Costs of Comprehensive HIV Treatment at Out-Patient Clinics in Namibia

Location	Namibia
Organizations Involved	CDC, ICF, Namibian Ministry of Health
Scope	Annual per-person costs of providing comprehensive out-patient, facility-based HIV care and treatment at 15 sites in Namibia, from both patient and program perspectives.
Goals	<p>This study will address five principal objectives:</p> <ul style="list-style-type: none"> • To estimate the annual per-person costs of providing comprehensive out-patient, facility-based HIV care and treatment at sites in Namibia, from both patient and program perspectives. • To evaluate the range of costs for comprehensive HIV treatment across different sites and to assess how factors associated with the program model and site context influence costs. • To evaluate the differences in program costs between patient types—ART patients vs. pre-ART patients, newly-initiating ART patients vs. established ART patients, and pediatric ART patients vs. adult ART patients. • Understand the source of support for principal cost components to guide resource planning for scale-up • To investigate the long-run cost shifts in the provision of CTC services. <p>The secondary objectives for the study are:</p> <ul style="list-style-type: none"> • Estimate patient costs, including out-of-pocket expenses, and time & travel costs. • Generate an empirical database to parameterize Namibia-specific ART Cost Projection Model.
Methodology	<p>This study will use methodology similar to the previous PEPFAR ART Cost studies conducted by CDC-ICF in 9 countries. The costing analysis will be conducted from a programmatic perspective, collecting data on the total economic costs incurred by each program to provide comprehensive HIV treatment, and considering all sources of financial or in-kind support. This study will be conducted using the sample of 15 publicly-funded CTCs in Namibia. Cost data will be collected through a retrospective review of 12 months of existing records relating to resource utilization and costs (e.g., supply logs, equipment inventories, utility bills, invoices) and interviews with facility and supporting organizations personnel. Data on patient out-of-pocket costs will be collected through a patient survey, via in-person data collection during clinic visits and phone interviews with patients that have had at least one prior appointment at the clinic (i.e. are not new patients) and who have missed their most recent appointment at the clinic to address selection bias associated with convenience sampling at the clinic.</p>
Status	Ongoing. Data collection is expected to commence in July 2015.
Findings	Not yet available
Implications	Not yet available
Source	Internal CDC-ICF documents

23. Cost of Prevention of Mother-to-Child Transmission (PMTCT) Services Using Option B+ in Tanzania

Location	Tanzania
Organizations Involved	CDC, ICF, Tanzanian Ministry of Health
Scope	Costs of providing comprehensive, integrated PMTCT services in Tanzania under an Option B+ protocol in Tanzania, from both patient and program perspectives.
Goals	<p>This study will address three principal objectives for planning purposes:</p> <ul style="list-style-type: none"> • Estimate the mean annual per-person cost of providing integrated PMTCT services using a B+ protocol in Tanzania, from both client and service perspectives (i.e. cost categories and programmatic activities). • Evaluate the range of costs for PMTCT services across different service levels (i.e. hospital, health center, dispensary) • Understand the sources of support for principal cost components to guide resource planning for scale-up of PMTCT
Methodology	The cost analysis will be conducted from a programmatic perspective, collecting data on the total program costs incurred by each program to provide PMTCT services as well as establishing costs per PMTCT service. All sources of financial or in-kind support will be considered. This study will be conducted in 15 randomly selected PMTCT sites in Tanzania. Cost data will be collected through a retrospective review of 12 months of existing records relating to resource utilization and costs (e.g., supply logs, equipment inventories, utility bills, invoices) and interviews with facility and supporting organizations personnel. Data on patient out-of-pocket costs will be collected through a patient survey.
Status	Ongoing. Data collection is expected to commence in March-April, 2015.
Findings	Not yet available
Implications	Not yet available
Source	Internal CDC-ICF documents

24. Costs and Cost-Effectiveness of HIV Testing and Counseling Modalities in Tanzania

Location	Tanzania
Organizations Involved	CDC, ICF, Tanzanian Ministry of Health
Scope	Cost and cost-effectiveness of primary HTC modalities in Tanzania: (i) client-initiated HTC that is co-located or integrated with delivery of other health services, (ii) mobile or outreach client-initiated HTC, (iii) facility-based provider-initiated HTC, and (iv) home-based provider-initiated HTC.
Goals	<p>The overall goal is to examine program-level costs associated with delivering HTC services through four selected modalities, and the cost-effectiveness of delivering HTC through the four modalities. The primary study objectives include:</p> <ul style="list-style-type: none"> • Describe the numbers and proportions of clients served by each of four modalities based on client characteristics and session type. • Describe components of costs for delivering comprehensive HTC services across the four modalities, including costs associated with program activities (training and mentoring, counseling, testing, promotion activities, etc.); input types such as recurrent operating costs and investments; sources of support for the HTC program (GOT, USG, other partners). • Estimate and compare the per-client cost of providing comprehensive HTC services and explore differences in per-client costs across different client characteristics and session types. • Calculate the incremental cost-effectiveness of each of the HTC modalities (incremental cost per additional first-time tester and incremental cost per additional seropositive individual identified), adjusting for client characteristics and session types.
Methodology	The cost analysis will be conducted from a programmatic perspective, collecting data on the economic costs incurred by each program to provide HTC services, and considering all sources of financial or in-kind support. Data on client characteristics and counseling session type will be extracted from HTC registers detailing service users in 30 selected sites. Cost data will be collected through a retrospective review of 12 months of existing records relating to resource utilization and costs (e.g., supply logs, equipment inventories, utility bills, invoices) and interviews with facility and supporting organizations personnel.
Status	Ongoing – no results yet available. Field data collection has commenced in October 2014.
Findings	Not yet available
Implications	Not yet available
Source	CDC-ICF internal documentation

25. Cost-Effectiveness of Link to Care Strategies in Kenya

Location	Kenya
Organizations Involved	CDC, ICF, MOH
Scope	Cost-effectiveness of different strategies used to link patients who test HIV positive to care in Kenya.
Goals	<p>The study will assess cost-effectiveness of three basic linkage strategies presently used in Kenya:</p> <ul style="list-style-type: none"> • Referral notes/forms: a patient testing HIV positive is given a referral note or a referral form to introduce him/her to a care and treatment service point. • Verbal referrals: a patient testing HIV positive is verbally referred to the next point of care. • Peer escorts: a patient testing HIV positive is physically escorted to the next point of care by a peer, usually an individual living with HIV and working as a volunteer within the facility. <p>Additionally, some providers use a “linkage tool” –a patient register with contact information (including telephone numbers) — in combination with one of the three strategies listed above to track patients who test HIV positive, and follow-up with them more actively to facilitate their linking to care. The study will evaluate how successful each of the strategies are in linking patients to care as well as estimate the incremental cost of using peer escorts compared to verbal and written referrals with and without the linkage tool.</p>
Methodology	The protocol is still in very early stages of development and the design considerations described here are preliminary. The study use a cluster randomized research design whereby adult patients who test HIV positive are assigned to one of three linkage strategies, and their outcomes are compared to evaluate the cost-effectiveness of the different strategies. The research will be limited to facility-based testing. The primary measures will be (1) the rate of linkage to care six weeks post-testing, and (2) the incremental cost of providing peer escorts compared to alternatives from the provider perspective. The sampling strategy will ensure that both type of facilities (those using a linkage tool and those that are not) will be represented.
Status	Ongoing
Findings	Not yet available
Implications	Not yet available
Source	Internal CDC-ICF documents

26. Safe Love Campaign Cost-Effectiveness Analysis

Location	Zambia
Organizations Involved	USAID, Chemonics, ICF, Manoff
Scope	To evaluate the cost-effectiveness of the Safe Love campaign in preventing the spread of HIV in Zambia.
Goals	The Zambia Safe Love campaign targets three domains of behavior change: increasing condom use, decreasing multiple concurrent partnerships, and increasing voluntary male circumcision. The study will assess financial costs of Safe Love campaign (both start-up and ongoing) and evaluate the cost-effectiveness, measured in terms of the cost per HIV infection averted and cost per life-year saved.
Methodology	Cost data will be collected through document review and interviews with key campaign implementer personnel. The effectiveness of the campaign is being measured using an outcome evaluation survey. For cost-effectiveness analysis, study will use a stochastic micro-simulation model of HIV transmission and progression. The model tracks sexual partnerships, entry into the population, HIV transmission and disease progression, deaths from HIV and other causes, life years experienced in the population, and HIV incidence and prevalence over time. The model will be calibrated to Zambia's population and HIV epidemic rate, to estimate the expected number of new HIV infections, life-years, and costs over a ten-year time horizon with the campaign (based on behavior reported by the exposed population) and without the campaign (based on behavior reported by the control population).
Status	Ongoing; Planned to be completed in December, 2014.
Findings	Not yet available
Implications	Not yet available
Source	Internal USAID, Chemonics, ICF, and Manoff documents

27. Cost-Effectiveness of Point of Care CD4 Testing on HIV Diagnosis, Linkage to Care and Time to Antiretroviral Therapy Initiation

Location	Kenya
Organizations Involved	CDC, Kenya Medical Research Institute (KEMRI), ICF
Scope	Cost-effectiveness analysis of using the Point-of-Care (POC) CD4 system in community settings compared to using referral CD4 systems at centralized laboratories. Data are collected in 4 health facilities, 2 laboratories in district hospitals and KEMRI laboratory.
Goals	<p>This study aims to estimate:</p> <ul style="list-style-type: none"> • Incremental cost per test • Cost per client that received CD4 results • Cost per client linked to care: for (i) clients with pre-ART care, (ii) clients with pre-treatment steps completed, and (iii) clients that initiate ART care
Methodology	KEMRI is in the process of conducting a first randomized trial to assess the impact of a POC CD4 device on linkage to care, time to completion of CD4 staging, and time to ART initiation, in community settings. The proposed study will supplement the impact assessment from this randomized study to assess the cost and cost effectiveness of POC CD4 devices and “care as usual”. The cost analysis will be conducted from a programmatic perspective, collecting data on the economic costs incurred to provide HTC services, and considering all sources of financial or in-kind support. Cost data will be collected through a retrospective review of 12 months of existing records relating to resource utilization and costs (e.g., supply logs, equipment inventories, utility bills, invoices) and interviews with facility and supporting organizations personnel. While no primary data on patient out-of-pocket costs were collected, geolocation data on patients will be available from the outcomes study. Patient costs will be estimated by using patient location relative to the clinic and unit costs information available from the CDC-ICF ART cost study conducted in 2011.
Status	Ongoing – no results yet available. Initial field data collection was completed in October 2014.
Findings	Not yet available
Implications	Not yet available
Source	CDC-ICF internal documentation

28. The Costs and Cost-Effectiveness of Expanding ART Eligibility to include an HIV Viral Load Criterion in Swaziland

Location	Swaziland
Organizations Involved	CDC, ICF, Swaziland National AIDS Program, National Reference Laboratory
Scope	Cost of viral load (VL) testing, cost and cost-effectiveness of ART eligibility scenarios based on VL levels, costs of scaling up ART coverage from the perspective of Swaziland's ART programs, and assessment of laboratory capacity and quality factors that may influence the costs of VL testing and other ART laboratory services under the proposed ART scale-up scenarios
Goals	<p>The study goals are to:</p> <ul style="list-style-type: none"> • Estimate the unit cost per test for viral load testing in Swaziland and its component input costs; • Estimate the unit cost per test for CD4 count testing at laboratories with different test volumes and efficiency levels; • Estimate the unit costs per test for additional tests associated with HIV testing and treatment (e.g., hematology, blood chemistries); • Identify factors that may influence variation in laboratory testing unit costs and quality, including test volume, equipment breakdown, stock-outs of reagents or other supplies, training and other infrastructure factors; • Estimate the total ART program costs over five years for each of the five ART eligibility guideline options under consideration by the Swaziland MOH; • Estimate the relative cost-effectiveness of each ART eligibility criterion over 20 years; • Conduct sensitivity analysis on the estimated total ART program costs and cost-effectiveness under each ART eligibility guideline to characterize how the cost estimates would change under different assumptions (e.g., about ART uptake, patient retention, and transition to second-line drugs).
Methodology	The study will use a programmatic perspective of the public sector HIV testing and treatment program, including all sources of support (MOH, PEPFAR, other external partners). In addition, the study will conduct a secondary analysis incorporating information on patient out-of-pocket costs collected as part of the Swaziland PEPFAR ART Cost Study and patient productivity losses due to time spent obtaining tests for ART eligibility, time spent receiving ART care and treatment services, and ill health. The data for calculating the VL test unit cost will be collected from the central National Reference Laboratory in Mbabane. Cost data will be collected through a retrospective review of 12 months of existing records relating to resource utilization and costs (e.g., supply logs, equipment inventories, utility bills, invoices) and interviews with facility and supporting organizations personnel. Cost-effectiveness analysis and cost projections will be conducted via modelling utilizing data from secondary sources including information on population viral load distribution from The Swaziland HIV Incidence Measurement Survey (SHIMS), a nationally representative household survey conducted by the CDC in 2010 – 2011.
Status	Ongoing – no results yet available. Field data collection is expected to start in January 2015.
Findings	Not yet available
Implications	Not yet available
Source	CDC-ICF internal documentation

29. Costs and Cost-Effectiveness of TB Diagnosis Using GeneXpert in Swaziland

Location	Swaziland
Organizations Involved	CDC, ICF, Swaziland Ministry of Health
Scope	Costs and incremental cost-effectiveness of TB diagnosis and treatment with and without Xpert MTB/RIF for people with and without HIV co-infection in Swaziland.
Goals	<p>This study aims to address the following questions:</p> <ul style="list-style-type: none"> • What is the average unit cost per test of chest x-rays, sputum smear microscopy (direct FM and ZN), culture (liquid and solid, plus concentrated smear when performed with culture), drug susceptibility testing, and Xpert MTB/RIF • What is the average cost (and range of costs) per sputum specimen transported under the current specimen transport system? • What are the average costs to patients – including out-of-pocket expenses, productivity losses, and catastrophic costs – of TB diagnostic algorithms with and without Xpert MTB/RIF? Are catastrophic costs to patients lower under diagnostic algorithms with Xpert MTB/RIF? • What is the incremental cost-effectiveness when Xpert MTB/RIF is used for diagnosis compared to when diagnosis is made without Xpert MTB/RIF as measured by cost per (i) TB case detected, (ii) TB infection averted, and (iii) DALY averted for patients with: (i) TB infection only, (ii) TB-HIV co-infection, (iii) MDR-TB infection, or (iv) MDR-TB and HIV co-infection • How would the projected cost-effectiveness of TB diagnosis using GeneXpert change under different modeling scenarios such as: (i) placing GeneXpert machines in different (or different types of) health facilities, (ii) using machines with different volumes, or (iii) improving the specimen transport network?
Methodology	<p>The protocol is still under development, so the following is a draft methodology. Data on costs, turnaround time, and effectiveness of TB diagnosis and treatment will be collected at a sample of health care facilities in Swaziland. The facility sample frame includes all public, mission, or NGO health care facilities in Swaziland that offer TB services supported by and reporting to the National TB Program. “Treatment” facilities will be those that performed GeneXpert testing during the study time frame while “control” facilities will be those that did not perform GeneXpert testing during the study time frame. The study will use a programmatic perspective including all sources of support (Government of Swaziland, PEPFAR, and other donors) for the calculation of unit costs per test, specimen transport costs, and the incremental cost per TB case diagnosed, per TB infection averted, and per DALY averted. The study will use a patient perspective for the calculation of out-of-pocket costs and productivity losses for TB patients. Data on the costs of TB diagnostics and treatment will be obtained through primary data collection at a sample of health care facilities in Swaziland with different laboratory capabilities. Some primary cost data will also be collected at the central level from the National TB Program, National TB Reference Lab, and National Reference Lab to capture costs related to program management, training, quality assurance, and specimen transport. Data on patient out-of-pocket costs will be collected from a sample of patients at the selected facilities. Secondary data on patients receiving diagnosis and treatment for TB will be extracted from routine facility reporting to the National TB Program from the facilities sampled for primary cost data collection. Data on the Strengthening Laboratory Management Towards Accreditation ratings of the laboratories associated with the facilities in the study sample will be used in the CEA model to determine whether the incremental cost-effectiveness of TB diagnostic algorithms including Xpert MTB/RIF varies depending on the quality of the laboratory implementing the algorithm.</p>
Status	Ongoing. Data collection is expected to commence in April-May 2015.
Findings	Not yet available

Implications	Not yet available
Source	Internal CDC-ICF documents

30. SLMTA Laboratory Strengthening Cost Analysis in Kenya	
Location	Kenya
Organizations Involved	CDC, ICF, Kenya Medical Research Institute (KEMRI), Kenya Ministry of Health
Scope	Detailed cost analysis of strengthening the laboratory capacity as part of Strengthening Laboratory Management Towards Accreditation (SLMTA).
Goals	<p>The study answer the following questions:</p> <ul style="list-style-type: none"> • What is the average cost of moving a lab supported through the SLMTA process along the star rating scale? For example, from 0 stars to 1 star, from 0 stars to 3 stars, and from 0 stars to 5 stars? • What factors influence the cost of moving a lab supported through the SLMTA process along the star rating scale? • What is the type and scale of complementary investments beyond PEPFAR support that are needed to move labs along the star rating scale? • What is the relationship between speed of investment and scale of investment in moving a lab along the star rating scale? (For example, could labs be moved along the star rating scale more quickly with larger investments, or are there factors that limit the rate of improvement regardless of investment amount?)
Methodology	<p>The protocol is in very early stages of development and feasibility assessment. Preliminary design considerations are described here. Based on initial results of feasibility assessment, the study will be limited to assessment of financial costs. Potential data sources include:</p> <ul style="list-style-type: none"> • Lab performance: Longitudinal SLMTA ratings data from Implementing Partners' records and routine reports to CDC/Kenya; • Costs of SLMTA investments supported by PEPFAR: Data from Implementing Partners' records and routine reports to CDC/Kenya; interviews with MOH officials (e.g., about the cost of centrally procured resources) • Costs of other investments in laboratory quality not supported by PEPFAR: Data from Implementing Partners' records and routine reports to CDC/Kenya; interviews with MOH officials (e.g., about the cost of centrally procured resources) • Longitudinal multivariate analysis is proposed.
Status	Ongoing.
Findings	Not yet available
Implications	Not yet available
Source	Internal CDC-ICF documents

31. Earlier Initiation of Antiretroviral Therapy: Cost Implications

Location	Barbados, Jamaica, Suriname
Organizations Involved	CDC, ICF, Country Ministries of Health
Scope	Cost implications of changing ART eligibility criteria in Barbados, Jamaica and Suriname.
Goals	This study aims to estimate the incremental cost of a policy shift from the current ART eligibility criteria CD4 count ≤ 350 cells/mm ³ to CD4 count ≤ 500 cells/mm ³ and examine incremental cost of providing ART irrespective of CD4 count.
Methodology	The PEPFAR Global HIV Treatment Cost Projection Model (PACM) is used to determine cost and health outcomes related to the policy shifts. PACM is an Excel based tool that calculates the resources required to provide HIV treatment in PEPFAR supported countries. Inputs into the model include country specific antiretroviral (ARV) prices, 1st and 2nd line ARV regimens, the distribution of patients across ARV regimens, and non-ARV HIV treatment costs. PACM is a cohort based model that includes a state transition model to account for individuals entering and exiting treatment (due to death or loss to follow up (LTFU)). Cost data and epidemiological parameters are obtained from secondary sources.
Status	Ongoing
Findings	Not yet available
Implications	Not yet available
Source	Internal CDC-ICF documents

32. Efficiency Assessment of the National HIV/AIDS Response in Brazil

Location	Brazil
Organizations Involved	The World Bank, Mexican National Institute of Public Health, the Department of AIDS, STD and Viral Hepatitis in Brazil
Scope	Analysis of the current levels of technical efficiency of the National HIV/AIDS treatment program in Brazil and their determinants. The study will combine qualitative and quantitative components.
Goals	<p>This study aims to:</p> <ul style="list-style-type: none"> • Ensure that the quantitative instruments are relevant and adapted to the political, bureaucratic, organizational, and administrative characteristics of Brazil's health system. • Estimate the total input costs and the average cost per intervention and per output for each facility in the production of treatment and care services. • Estimate levels and determinants of efficiency observed. • Provide recommendations to develop management interventions and/or regulation or incentive mechanisms
Methodology	Costs measured include personnel, other recurrent costs (utilities, drugs, supplies, training, supervisions visits, etc.), and capital and building costs. Direct observation will be used to measure staff time allocation to ART. Analysis of output cascades (attrition) and vignettes and patient exit interviews (competence and knowledge, service received) will be used to measure quality. Constraints to determine efficiency include: urban vs. rural setting, HIV prevalence, size of demand, and supply of services. Determinants of efficiency include: structure and governance, training and staff composition, management, accountability, incentives.
Status	Ongoing – Data collection planned for early 2015
Findings	Not yet available
Implications	Not yet available
Source	Efficiency Assessment of the National HIV/AIDS response in Brazil protocol – September, 2014

33. The Relation between Effectiveness and Efficiency: Economic impact of suboptimal performance in HIV treatment initiation and viral suppression

Location	Mexico
Organizations involved	Mexican National Institute of Public Health, University of California at Berkeley, Mexican National Center for the Prevention and Control of HIV/AIDS
Scope	Analysis of community performance (HIV testing) and clinical performance as determinants of the efficiency of HIV treatment.
Goals	<p>The study aims to:</p> <ul style="list-style-type: none"> • Estimate the cost per patient treated along the ART cascade and explore its heterogeneity • Estimate a measure of cost inefficiency as a function of a best-practice frontier • Explore the relationship between mortality at the facility level and community and clinical performance
Methodology	<p>The study relies on the SALVAR platform database (System for Administration, Logistics and Surveillance of Antiretroviral Therapy), which contains information of all patients who initiated ART at a Ministry of Health sponsored facility. SALVAR also keeps records of key clinical processes indicators (CD4 and VL tests, dates of treatment initiation, last medical visit, and patient status, classified as on treatment, lost to follow up, or treatment withdrawal). Patient population included 7,010 individuals who initiated ART in 2012, nested in 92 facilities. The analytical horizon was one year. The analytical approach to evaluate ART performance relied on the operational efficiency framework of the service cascade. The analysis captured actual spending data in ART for the most recently available full year records, using a bottom-up approach. The service cascade indicators and cost information enabled a facility-level cost-per-client (<i>pppy</i>) measure to be computed, adjusted by quality and complexity. This measure allowed for the computation of a best-practice frontier for two outcomes: crude death rate at the facility level and annual cost per client with viral suppression (<50 copies/mm³) and CD4 recovery (<400 cel/mm³), using two measures as efficiency predictors: community performance (proportion of clients with baseline CD4>200) and clinical performance (proportion of clients who achieved viral suppression between 6-18 months).</p>
Status	Ongoing
Findings	<p>Overall, 48% of clients began treatment with CD4>200 cel/mm³, and 65% were at least once below the cutoff VL level within 6-18 months after treatment initiation. 25% of the sample showed viral suppression and CD4 recovery. Wide variability in these indicators was found at the facility level, and this heterogeneity influenced the cost per unit of effectiveness: while the annual average cost per client who initiated ART in 2012 was \$4,148 USD, the cost per client with baseline CD4>200 was \$9,461, the cost per virally suppressed client was \$7,112 and finally, the cost per patient with viral suppression and CD4 recovery was \$20,639.</p>
Implications	<p>The study found that there is considerable room to improve early initiation and the health status of HIV patients receiving ART. Breakdown of clinical information into useful metrics is imperative for managers and policy-makers. These preliminary results encourage prompt and continuous surveillance of the treatment cascade indicators in Mexico and other settings, where administrative data is available.</p>
Source	Not Applicable (input by Sergio Bautista, Mexican National Institute of Public Health)