

# Session 3: Methods for data collection and analysis: costing methods in global health

**Presenter: Carol Levin, Ph.D.**



HEIST Workshop  
November 29, 2017



## Overview of cost methods

- Review steps in costing
- Methods overview
- Examples from
  - Honduras & Zimbabwe



Millions of lives depend on whether spending is guided by evidence

**Priority setting for new interventions or introducing new technologies, drugs, vaccines**

**Resource requirements and advocacy**

**Financial planning and budgeting**

**Improving technical efficiency**

## Review and prelude

- Bountiful costing terms and methods.
- Purpose determines the choice of methods.
- Time horizon and timing of costing matters.
- Perspective is about whose costs?
- Scale and scope will affect the total and unit costs.

THE UNIVERSITY of *York*



The main methodological issues  
in costing health care services  
A literature review

CHE Research Paper 7

## Basic approach

Steps in costing	Description
Define the problem	The purpose, the population, and the strategy, service or intervention of the cost estimation should be defined.
Identify	Identify the activities or cost centers and inputs to include in the cost estimation and justify these relevant to purpose.
Measure	Measure or estimate the quantities of inputs for activities or cost centers
Value	Attach a price or value to all inputs or activities and adjust for inflation and exchange rates from local currency to USD.
Calculate	Analyze and present the results in terms of total, incremental and unit costs relevant to purpose and perspective

## Defining the problem

- Objective
- Scope - population/strategy/service/intervention?
- Perspective
- Time Horizon
- These factors will influence the overall study design.
- In particular they will help you consider the:
  - types of costs you collect
  - type of units for reporting costs
  - location of costs
  - frequency and duration of costs.

## Which costs to include depends on use of cost data and perspective

1. Estimate total resource requirements for five year financial projections
2. Estimate economic costs for inclusion in cost-effectiveness analysis

Perspective	Personnel time	Outpatient visits	Donated vaccines	Regulatory costs	Transportation to/from health facility
Health Service	✓	✓			
Government	✓	✓	✓	✓	
Societal	✓	✓	✓	✓	✓

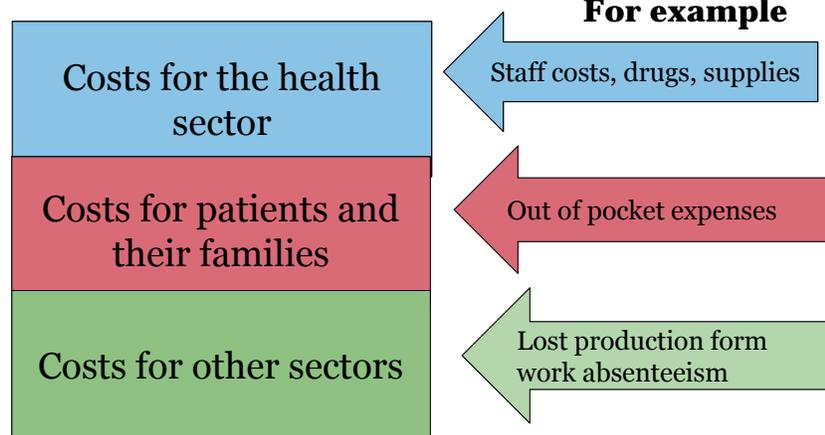
✓ **Financial costs**

✓ **Economic costs**

## Identifying Costs- types of costs

- Direct medical (health care) costs
  - Treatment or preventative care
  - Hospital, facilities, communities, home
  - Follow up visits
  - Personnel, medication, procedures, tests, equipment, overhead, administrative
- Direct non-medical (health care) costs
  - Out-of pocket expenses- transportation, child care
- Productivity costs (Indirect costs)
  - Lost economic productivity due to disability or death

## Identifying costs: Basic elements to consider



## Cost categories/classifications: Inputs

### **Fixed costs\*** - remain the same regardless of the quantity of output produced

- Equipment (Vehicles, laboratory equipment, computers)
- Development of training or communication materials
- Overhead (building, utilities, indirect expenses)

### **Variable costs-** depend on the quantity of output.

- Personnel allowances –travel and per diems
- Supplies (IEC materials, drugs and health commodities)
- Transport costs (fuel, maintenance, taxi, public transport)

\* In the long-run there are no fixed costs

## Cost classification

Different way to consider costs categories

- Inputs
- Start-up costs verses recurrent
- Cost centers/function/activities
- Combine categories inputs by activity
- Intervention specific costs verses joint or shared costs
- Source of funding
- Level of service delivery

## Measuring resource use

- Micro-costing methods
  - Quantify and cost out every input consumed in preventing or treating disease.
- Gross costing or using average costs
  - Allocate the total budget (expenditures) to a particular department or service.
  - Unit costs derived by dividing total costs by service unit levels.
- Bottom up or Top down costing
  - Gross costing is typically top down.
  - Micro-costing may use both bottom up and top down
- Not mutually exclusive

# Analytical approach- Measurement

## Step-down accounting

- Health facility level
- Identify major functions or cost centers of the facility

## Activity based costing

Published by the Robert H. Smith School of Business, University of Maryland, Baltimore, MD, USA

### An activity-based cost analysis of the Honduras Community-Based, Integrated Child Care (AIN-C) programme

John L. Fiedler,<sup>1\*</sup> Carlos A. Villalobos<sup>2</sup> and Annetec C. De Mattos<sup>3</sup>

Accepted: 12 May 2008

The Honduras AIN-C programme is a preventive health and nutrition programme of the Honduran Ministry of Health (MOPH) that relies on volunteers to help mothers monitor and maintain the adequate growth of young children. A questionnaire, designed and validated to measure the programme's perceived effectiveness, was used to assess the programme's effectiveness in increasing knowledge, attitudes and practices, including feeding and appropriate weaning and monitoring practices for children with diarrhoea and acute respiratory illness. The programme is widely regarded as a model. The study was undertaken to provide the first comprehensive estimate of the cost of the AIN-C programme, with the goal of providing a programme and financial planning tool for Honduras. An additional objective of this study was also undertaken to determine the cost of the AIN-C programme's community-based services relative to a similar facility-based service. Expenditures in Honduras US dollars, the study found that after the programme's phase-out (1) the annual recurrent cost per child under 2 years participating in the programme is \$6.85; (2) the annual incremental budget requirement per child under 2 years participating in the programme are \$5.96; (3) the cost of an AIN-C monthly growth monitoring and counselling session per child is 11% of the cost of a nutritional AIN-C; (4) the cost of a mother's educational module per AIN-C; and (5) the cost of a mother's educational module per AIN-C is \$1.66 million, the equivalent of 66% of the recurrent cost of the programme and roughly equal to the annual incremental budget requirement of the programme. Sensitivity analysis of the unit estimates is performed to provide insight for countries considering introducing a similar programme, into how modifications of key characteristics of the programme affect its costs.

**Keywords:** Nutrition, community-based nutrition, cost analysis, health care financing, community participation, volunteer incentives

### RESEARCH ARTICLE

#### Cost of maternal health services in selected primary care centres in Ghana: a step down allocation approach

Mawuli Ametakyi-Quaye<sup>1\*</sup>, Francis Agyemang<sup>1</sup>, Simon Owusu<sup>1</sup>, Joseph Opong<sup>1</sup>, John Williams<sup>1</sup>, Renee Tawiah<sup>1</sup>, George Gyam<sup>1</sup> and Sarah Luchessa<sup>2</sup>

**Abstract**  
**Background:** There is a paucity of knowledge on the cost of health care services in Ghana. This paper is intended to provide an estimate of the cost of maternal health services in selected primary care centres in Ghana. **Methods:** The study was a cross-sectional design and quantitative data was collected between July and December 2005. Twelve government primary health centres in the Greater Accra and Volta Regions of Ghana were randomly selected for the study. All health care-related costs for the year 2005 were collected from a public sector provider's computerized financial management system. **Results:** The step-down allocation approach was used to estimate the cost of maternal health services. The study found that the average cost of maternal health services per child was \$1.66 million, the equivalent of 66% of the recurrent cost of the programme and roughly equal to the annual incremental budget requirement of the programme. **Conclusion:** Sensitivity analysis of the unit estimates is performed to provide insight for countries considering introducing a similar programme, into how modifications of key characteristics of the programme affect its costs.

**Keywords:** Nutrition, community-based nutrition, cost analysis, health care financing, community participation, volunteer incentives



BioMed Central is an open access journal publishing research in the fields of medicine, biology and health care.

Submit your manuscript here: [http://www.biomedcentral.com/info/publishing\\_adv.asp](http://www.biomedcentral.com/info/publishing_adv.asp)

# Step down cost accounting

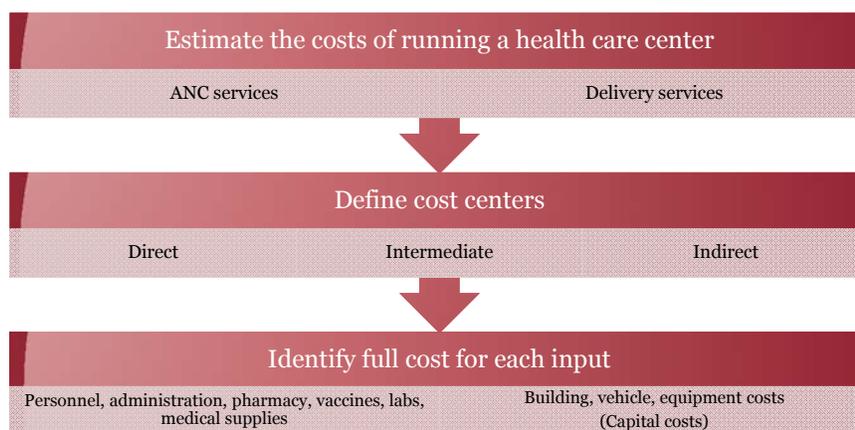


Source: Conteh and Walker 2004

## Example: Cost of maternal health services in Ghana

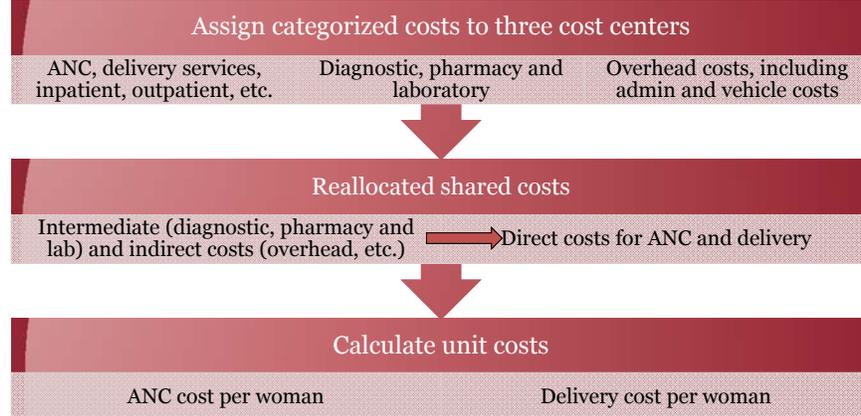
- Objective: Estimate the full costs of antenatal care (ANC) and delivery services in Ghana
- Study area: Two northern districts in Ghana
  - Builsa District, popl. 96,000 and 22 health facilities
  - Kassena Nankana District, popl.150,000 and 36 facilities
- Sample: 12 government run primary health care centers
- Data collected between July and December 2010
- Time Horizon: One year period

## Example: Cost of maternal health services in Ghana



(Source: Dalaba et al. BMC Health Services Research 2013)

## Example: Cost of maternal health services in Ghana



(Source: Dalaba et al. BMC Health Services Research 2013)

## Example of results: Cost of maternal health services Ghana

Health Center	Antenatal Care (ANC)			Delivery		
	ANC total annual cost 2010 (US\$)	ANC visits per year 2010	ANC costs per woman (US\$)	Delivery cost per year 2010 (US\$)	Total number of deliveries 2010	Delivery cost per woman (US\$)
Average*	23,063	1,664	18	11,543	204	63
Median*	20,997	1,597	17	10,177	192	43

Source: Table 4, Dalaba et al. BMC Health Services Research 2013

\* Estimates have been rounded to nearest tenth.

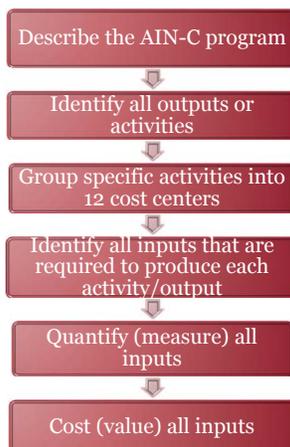
**Example: Activity based cost analysis of the Honduras community based, integrated child care AIN-C program**

- Objective: To estimate the cost of a community based integrated child care program to inform program and financial planning for Honduras and other countries.
- Model program not at scale
  - Training of trainers
  - Community weighing and counseling
  - Home visits

**Example: Activity based cost analysis of the Honduras community based, integrated child care AIN-C program**

- Study site: 1 district in Honduras
  - In 2006, the AIN-C program was in 1,800 communities covering 1/2 of Honduras health districts.
- Use ingredients approach with activity based costing.
- Provides detailed description of program.
- Long start-up period (6 years).
- Demonstrates how fixed costs change with scale.
- Conducts sensitivity analysis to enhance transferability of results to other settings.

## Example of steps in activity based costing for Honduras AIN-C program



## Summary of activities or 12 cost centers

One-time start-up	Monthly visits	Community and volunteer meetings	Monitor incentives
1. Training of Trainers (TOT1) Preventive	6. Community meetings with weighing children	9. Monthly health center meetings	12. Incentives provided to volunteers
2. Community engagement/baseline	7. Supervisory meetings by district staff	10. Monthly community volunteer meetings	
3. Training preventive	8. Supervisory visits by sector staff	11. Home visits and curative care	
4. TOT2 curative			
5. Training curative			

## Summary of inputs

- Number and type of trainers & trainees
- Duration of training
- Personnel costs
- Per diems
- Transport
- Materials and supplies
- Refreshments
- Venue rental costs
- Equipment

## Example of estimating one activity cost centers

Activity	Number & type of participants	Duration (days)	Personnel costs	Per diem			Transport	Refreshments	Meetings & supplies	Rental of site	Equip-ment	Total cost
				No.	Cost/person	Total cost						
<b>3. Training health facility and community personnel</b>												
	2 facilitators											
	1 health area nurse	5	2729	4.5	270	1215		200				4144
Health centers = 2	1 health sector nurse	5	2729	4.5	270	1215		200				4144
Communities per health center - 2												
	3 health center personnel											
	2 nurse auxiliaries	5	3014	4.5	220	1980		400				5394
	1 health promoter	5	1545	4.5	220	990		200				2735
	12 moniotrs	5	0	5	60	3600		2400				6000
<b>Total costs for Activity 3</b>			<b>10017</b>			<b>9000</b>		<b>3400</b>	<b>5475</b>		<b>1360</b>	<b>29252</b>



## Measure: Sources & methods for collecting service delivery output and input quantities & costs

- Administrative data bases
  - From health facility
  - Project expense reports



- Standardized reporting forms
- Interviews with facility providers and administrators
- Surveys for providers and beneficiaries
- Review of patient charts
- Observation or time-motion studies
- Expert panel

## Timing of data collection

- Prospective
  - Allows for direct observation of resource use
  - Avoids recall bias
  - May influence resource use
  - Hawthorne effect
- Retrospective
  - May be sufficient and more practical, especially if written records are available
  - Recall period is important
- Consider frequency of data collection of the course of intervention
  - Start-up and on-going operations
  - Seasonality of service use

# Sampling

- Begin with a sampling frame of sites or the population.
- Cost studies typically use convenience sampling
  - Biased, but can try to stratify even small samples to capture
- Purposive sampling may reduce bias
  - Stratify by facility size/type/location (drivers of costs)

# Sampling frame for purposive sampling

Capacity of service (i.e. number of girls served)	URBANO				RURAL		
	< 50%	>80%	30% hasta >80%	>80%	< 50%	>80%	30% hasta >80%
<b>Large</b>	Santa Julia Or	Hisp Santa Rosa (N=244, 99.6%)	CS San Jose (23% =>76%)	CS Morropón (N=115, 39%)	La Arena (N=168, 100%) <b>NEGRA</b>	CS II San Pedro (N=195, 24.1%=>58.5%)	C.S. LA ARENA (n=168, Cobert 100%)
Grande	CS Los Alamos (N=28, Cobert 43,3%)	<b>C.S. PACHITEA</b> (n=254, Cobert 100%)	CS Pachitea (N=254, 51%=>94%)	ALGARROBOS (N=283, Cobert 55,1%)	(n=30, Cobert 100%) P.S. TABLAZO NORTE (n=68, Cobert 100%)	P.S. KM 50 (n=74, Cobert 100%)	
Small/med				La Matanza (N=28, 48%) Or Yapatera (N=7, 38.8%)			
<b>Small</b>	PS Chapaira (N=35, Cobert 100%) Or P.S. La Loma (N=14, 36%)	CS San Pedro (N=20, 95%) Or P.S. Cienegras (N=26, 81%)	PS La Loma (N=30, 53%) Or P.S. CHAPAIRA (n=35, Cobert 77,1%)	CS Sechera (N=230, 35,31.4%) Or P.S. CHAPAIRA (n=13, Cobert 66,7%)	PS La Loma (N=18, 76%) Or CS Malacasi (N=21, 76%) Or CS La Atheca (N=14, 71%) Or CS Casa Grande (N=41, 95%)	CS Talandracas (N=3, 8%) Or C.S. BOENOS AIRES (n=33, Cobert 100%)	C.S. MORROPON (n=115, Cobert 37,4%)

**Bold = In 2009 sample for cost study**      *Italic = In 2010 IIN study*

## Valuation: Price data for valuing resources

- Typically use market prices for commodities, equipment, labor
  - Sources include MHS price list, WHO product profile sheets, price catalogs, MOH or other salary scales
- Market price may not be available (donated goods or volunteer labor)
  - Use price of similar goods
- Collect primary data
  - Administrative or market surveys

## Valuation: Example of calculating personnel costs

### Salary Information

Staff position	Annual Salary	Bonus/ Benefits	Total earned/ year	No. Working days per year *	No. of working hours per day (seeing patients)	No. working minutes per year *	Cost per minute	Cost per minute (US \$)
	B	C	Sum	D	E	F=D*E*60	G= (B+C)/F	H=G/C70
Primary care counsellor	\$ 2,280	190	2,470	203	6	73,080	\$ 0.03	\$ 0.03
Primary care nurse	\$ 4,764	397	5,161	203	6	73,080	\$ 0.07	\$ 0.07
Registered general nurse	\$ 5,352	446	5,798	203	6	73,080	\$ 0.08	\$ 0.08
Registered midwife	\$ 5,352	446	5,798	203	6	73,080	\$ 0.08	\$ 0.08
Nurses Aid	\$ 4,524	377	4,901	203	6	73,080	\$ 0.07	\$ 0.07
State certified nurse	\$ 4,764	397	5,161	203	6	73,080	\$ 0.07	\$ 0.07
Lab tech	\$ 5,352	446	5,798	203	6	73,080	\$ 0.08	\$ 0.08

#### Notes:\*

1. The number of working days per year is: (52 weeks x 5 days) less 12 public holidays, less 45 days leave = 203
2. The number of working minutes per year = 203 x 6 x 60 = 73,080

## Valuing volunteer labor

- Community health workers (CHW) provide a lot of support at both the community and health facility level.
- Economic or opportunity cost of next best use of CHW time.



## How to value volunteer time?

- Is the cost of volunteer labor zero?
  - Even if unemployed, they could be doing something else (leisure or productive) with their time
- How to value?
  - Use the value of similar employed resources
  - Use a single wage regardless of their actual employment (maybe agricultural wage rate?)

## Valuation: Estimating capital costs

- Large expenditures that last over one year.
- Could be a hospital, vehicle, laboratory equipment.
- Also often investments that must occur at the beginning of a project or program.
- Depreciation is included in costs.



## Allow for differential timing of costs

- Discounting
  - Health interventions often incur costs and benefits at different times, as well as into the future.
  - Make sure that the dollar value is expressed in terms of the money that is needed at the present time, rather than the total cash flow.
    - Discounting takes into consideration time preference (now is better than later)
    - Related to real interest rate

## Easy to program in Excel

Year	N	Cost of ART (Undiscounted)	Cost of ART (Discounted)
2017	1	\$600	583
2018	2	\$600	566
2019	3	\$600	549
2020	4	\$600	533
2021	5	\$600	518
2022	6	\$600	502
2023	7	\$600	488
2024	8	\$600	474
2025	9	\$600	460
2026	10	\$600	446
<b>Total PV</b>		<b>\$6,000</b>	<b>5118</b>

## Valuation: Annualizing start up and capital costs

- **Standard assumptions:**

- Vehicles & equipment are used for 5 years before they are replaced
- Staff hiring and training happens every 5 years b/c of staff turn over

- **Advantage of using standard assumptions:**

- Your costing is comparable with other analyses in the literature
- You can compare your program costs head-to-head with costings of other programs

- **Disadvantage:**

- May not be accurate in your setting. Eg. Vehicles in developing settings may be used for much longer than 5 years. Staff turnover may be more frequent than 5 years.

## Valuation: How to calculate financial depreciation

- Equipment costs US\$10,000
- Useful life years of 5 years
  - Financial depreciation is  $\$10,000/5 =$  US\$2000 per year
- Used for budgeting analysis or efficiency/sustainability within a project.

## Quick tip: Use table of discount or annualization factor

Annualization factors

	Discount rate									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.876	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.109	8.559	8.061	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.292	8.649
22	19.660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9.442	8.772
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.580	8.883
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.707	8.985
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077
26	22.795	20.121	17.877	15.983	14.375	13.003	11.826	10.810	9.929	9.161
27	23.560	20.707	18.327	16.330	14.643	13.211	11.987	10.935	10.027	9.237
28	24.316	21.281	18.764	16.663	14.898	13.406	12.137	11.051	10.116	9.307
29	25.066	21.844	19.188	16.984	15.141	13.591	12.278	11.158	10.198	9.370
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427

Sources:  
Drummond et al. 2015  
Creese & Parker, 1994.

## Choosing the discount rate

- It has become standard to use a 3% discount rate
  - Standard rate of return on long-term riskless investments
- But choice of discount/interest rate is complex
- Should be consistent with the rate used by the finance ministry of country in question
- Lots of theories around what is the proper discount rate to use.
  - See Drummond et al for discussion of this.

## Calculations: Aggregate costs

- Total (or total incremental) costs
- Unit costs
- Cost profiles

## Assessing costs and effectiveness of expanding high quality PMTCT services by community and facility strengthening in Mashonaland Central Province, Zimbabwe

### Example

## Zimbabwe ARISE Project: Intervention objectives

- Increase access to the WHO's recommended PMTCT prophylaxis regimen, including highly active antiretroviral therapy (HAART) to all pregnant women who need it for their own health.
- Increase community access to and uptake of PMTCT services.
- Evaluate the effectiveness of the intervention by measuring the decrease in HIV infection among HIV exposed infants.

## Research Objectives

Economic evaluation objective:

- Determine **the CIDA funded frontline cost** per infant infection averted
- Sub-objectives:
  - Costs: Estimate the **incremental program costs** incurred to provide Option A in Mashonaland Province
  - Impact: Calculate the incremental cost-effectiveness, measured as **cost per infection averted**

## Perspective and cost definitions

- **Donor perspective (CIDA)**
  - **Frontline (financial) costs** represent actual project expenses paid for by the project to deliver goods and services
- **Ministry of health perspective (MOH Zimbabwe)**
  - **Economic or opportunity costs** value all resources used to provide services even if not paid for in the current project budget:
    - Donated goods and services, volunteer labor, contribution of goods and services by MOH

## Start up activities

- Intervention
  - Microplanning
  - Development and prodn of IEC materials
  - Development and prodn of training materials
  - Sensitization and awareness raising
  - Training



## Recurrent activities

- Health system strengthening
- Procure CD4 machines
- Mentoring program
- Training and capacity strengthening
- Procurement
- Health Service Delivery (MOH)
- Community activities to increase demand for services
  - Continuous awareness raising and sensitization
- Supervision



## Cost input/activity categories

### Variable costs

- Health commodities
- Transport
  - Fuel, parking, maintenance, repairs, taxis, tolls, insurance)
- Personnel
- Office facilities
- Management meetings
- Training/supervisory meetings
- Overhead costs

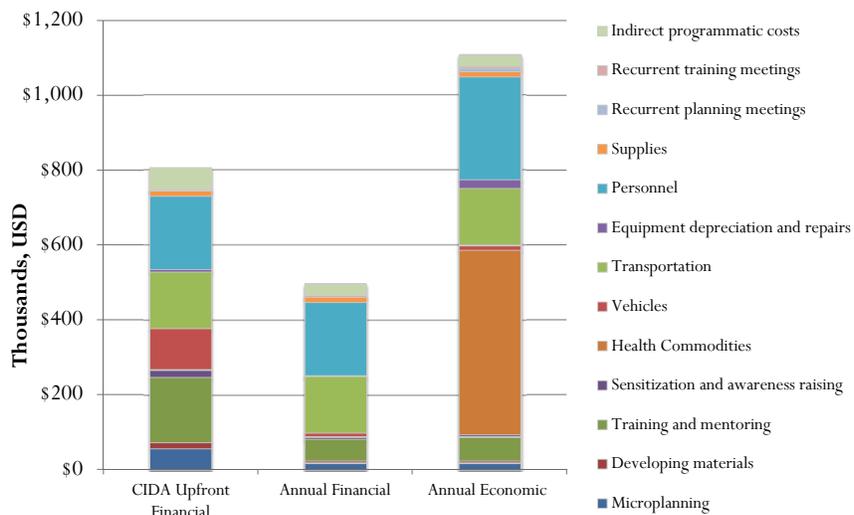
### Fixed or capital goods

- Vehicles
- Equipment
  - CD4 machines
  - Computers
- Start-up activities
  - Microplanning
  - Developing materials
  - Training
  - Sensitization and awareness raising

## Cost outcomes

- Total intervention cost
- Cost profile (share of costs to inputs or activities)
- Cost per pregnant woman screened for HIV
- Cost per HIV positive woman treated
- Cost per infant infection averted

### Arise Zimbabwe project: Costs of strengthening access to PMTCT (US \$2012)



### Start-up and recurrent costs by implementing partner (US 2012)

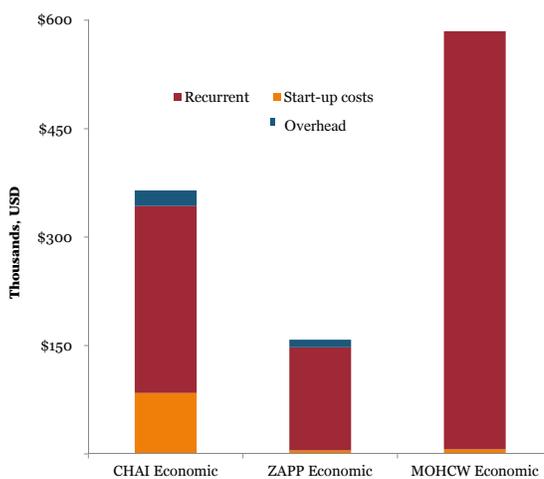


Table 1: Annual financial and economic costs by cost category (US \$2012)

Cost Category	Unit costs
	US \$ 2012
	<b># of beneficiaries</b> 20,954
<b>Start-up</b>	
Microplanning	\$ 0.93
Developing materials	\$ 0.24
Training and mentoring	\$ 3.08
Sensitization and awareness raising	\$ 0.31
<b>Sub-total Start-up</b>	<b>\$ 4.57</b>
<b>Recurrent</b>	
Health Commodities (consumable supplies)	\$ 23.46
Transportation	
- Capital (vehicles annualized depreciation)	\$ 0.60
- Recurrent (Fuel, parking, maintenance, repairs, taxis, tolls, insurance)	\$ 7.24
Equipment (CD4 machines, computers annualized depreciation)	\$ 1.13
Personnel - implementation staff (excludes management team)	\$ 13.09
Office facilities (supplies and communication, such as copying, telephone, postage, stationary, registers, support to PMTCT program)	\$ 0.61
Project management meetings	\$ 0.48
Training/supervisory meetings	\$ 0.16
<b>Sub-total Recurrent</b>	<b>\$ 46.76</b>
Overhead	\$ 1.52
<b>Total Cost per beneficiary</b>	<b>\$ 52.85</b>

## Summary of ARISE Zimbabwe intervention costing methods

- Micro-costing approach
- Bottom up approach
  - Combine activity based costing, ingredients approach and budget expenditure data
- Payer perspectives
  - Donor and Ministry of Health
- Multi-level:
  - National (NGO), health facility, community
- Sub-sample of project intervention health facilities
- Incremental cost to existing PMTCT services

Thank you.

Contact: [clevin@uw.edu](mailto:clevin@uw.edu)



**DEPARTMENT OF GLOBAL HEALTH**

UNIVERSITY *of* WASHINGTON