

# Costing Pre-analysis Planning Template

A template for integrating cost research with impact evaluation

Beta version - feedback welcome please contact [lizbrown@berkeley.edu](mailto:lizbrown@berkeley.edu). Accesses the read-only overleaf (LaTeX) file [\[here\]](#). Please make a copy and save this template under a new name for your own use

Title of the study\*

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## Abstract

A costing pre-analysis plan is a document that outlines the policy and research questions, as well as methods and data needed to prospectively plan a costing study that will integrate with a randomized evaluation of a development intervention. The abstract for this document should succinctly describe what the intervention is and where it will be implemented; specify what the counterfactual(s) is; what costs and impacts will be measured; and the proposed methods for comparing them. It describes the primary and secondary data sources that will be used for the costing. It should overview the baseline cost model and methods of cost analysis that will be used.

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# 1 Introduction

This document presents a functional outline for users to draft a costing pre-analysis plan. The structured outline and prompts enable users to produce a plan that can efficiently integrate with the pre-analysis plan for the impact evaluation or serve as a standalone draft of a costing report that is fit for publication. Once complete, the standalone costing pre-analysis plan may be pre-registered online at the Open Science Framework.

CEGA's Cost Transparency Initiative developed and has now piloted this tool on eight randomized evaluations. A completed costing pre-analysis plan sets the stage for conducting research that is centered around the cost-related research questions. The narrative explains how the cost evaluation will be undertaken, how it fits with the impact evaluation research, and what data is needed to make it operational. The structure facilitates our greater collaboration with the evaluation research team, implementing partners, and donors. Pre-registering the completed costing pre-analysis plan contributes to creating transparent and reproducible cost research.

## 2 Motivation

The motivation section should articulate the purpose of the cost analysis. It succinctly overviews the intervention and the randomized evaluation. It also overviews the costing study, including the purpose and plans for cost analysis.

- What does the intervention do?
- How will impact be measured?
- What policy question does the cost research address?
- What are the goals of the costing exercise?

### 2.1 Cost research questions

This section outlines concrete questions that can be answered using empirical data and analysis. These should be organized according to the primary and secondary objectives of the cost analysis.

#### 2.1.1 Primary and secondary cost research questions

What are the primary cost research questions the study seeks to answer? For example:

- What inputs and resources do participants in the treatment and comparison arms(s) receive and what is the value of those items?
- What is the cost to deliver items and resources to a participant?
- What is the total cost of the intervention and by treatment arm?
- What is the average intervention cost per participant?
- What is the average cost of each activity?
- What is the relative proportion of each intervention activity to the total cost?
- What is the incremental cost effectiveness of the intervention treatment(s)?
- Are the cost-effectiveness ratios sensitive to the key assumptions of the costing study? To what extent?

## 3 Intervention Design and Delivery

Careful identification of treatment activities is needed to align the costing with the intervention that is the subject of the impact evaluation and the specific population(s) of the evaluation. This section focuses on the intervention details, treatment arms and their real-world implementation. A detailed understanding of the intervention is key for conducting a rigorous cost study.

### 3.1 Primary intervention activities

- What are the primary activities of the intervention?
- What population groups will the intervention serve?
- What sequence of activities will a participant in the treatment arm experience?

### 3.2 Delivery model

- Who are the primary and secondary implementing partners for the intervention? Are there sub-implementing partners?
- How is the work divided among multiple implementing partners, e.g. by activity, by treatment arm, by geography or by administrative responsibility?
- Are the implementing partners for alternative treatment arms comparable in their scale?
- How do sub-implementing partners report expenditures to the primary implementer?
- How are each of the intervention activities delivered? Consider:
  - Administrative levels. At what administrative level is each activity delivered? Are activities delivered at the village, county, post, school or district level?
  - Geographic coverage. Are some activities delivered based on geographic features, e.g. urban or rural?
  - Activity responsibility. Do implementing partners divide responsibility by specific activities?
  - Technical expertise. Do implementing partners specialize by technical area?
  - Cascade model. Is a cascade model of delivery being used?

### 3.3 Participants

This subsection describes the sample and the number of participants in the intervention by treatment assignment.

- What is the number of participants in each treatment arm, including comparison arms?
- What estimand is the focus of the intervention (i.e. ITT, ToT, LATE)? Which participant counts correspond to each?

| Evaluation milestone          | Timing of the Costing Start & End   |
|-------------------------------|-------------------------------------|
| Baseline survey               |                                     |
| Recruitment                   | Costing starts prior to recruitment |
| Intervention activities start |                                     |
| Midline survey                |                                     |
| Intervention activities end   | Costing ends prior to endline       |
| Endline                       |                                     |

Table 1: Evaluation time horizon

### 3.4 Evaluation time horizon

- How will the costing study align with the timing and sequencing of the impact evaluation?

## 4 Costing Study Design

This section outlines the key assumptions underlying subsequent costing study design decisions.

### 4.1 Key underlying assumptions

- What is the perspective of the costing and what justifies the choice?
- What criteria will primary decision-makers use to judge cost-related decisions?
- What is the relevant scale and population for the comparable intervention that a decision-maker should consider as an alternative to this intervention?

### 4.2 Operationalizing cost

This subsection explains the definition of cost that will be used for the study, why it is appropriate and how it will be measured. The choice to use economic cost or financial cost should be explicitly defined, and implications derived for cost inclusion criteria and data collection plans.

- What definition of cost will be used?
- How will valuation be handled for:
  - routine inputs and resources
  - volunteer and in-kind contributions
  - non-traded goods and services
  - tangible and non-tangible goods and services

### 4.3 Principles for classifying intervention costs

This section should explain how direct, shared direct and indirect costs will be defined and classified, relative to the activities of the intervention and the objectives of the costing.

- Which costs will be classified as direct, shared direct, and indirect?
- What principles will guide the cost allocation decisions?
- Does the intervention delivery model violate the random assignment of units assigned to treatment or control groups?

## 5 Data

This section outlines the data sets that will be used for the costing.

- What procedure will the team use to identify the resources and inputs for each activity?
- What data sources will be used to assign value to each of the inputs and resources used in the intervention?
  - What are the advantages of the available data and potential sources of bias?
- What secondary data sources will be used, e.g. to track beneficiaries, participants, monitor delivery, or track time use?

### 5.1 Data collection

- What data collection instruments will you use? e.g. time and motion studies, interview protocols, administrative data
- Are the data sensitive, for example do they contain personally identifiable information (pii) or do they reveal other information that is sensitive?
- What steps will be taken to keep the data collected confidential at this stage?

## 6 Methods

This section describes the approach to costing and use of cost data (e.g. bottom up approach, top down approach), and the methods of costing used (e.g. activity-based costing, ingredients method, etc.). It provides a rationale for the approach and methods used (e.g. availability of data, suitability to answer policy questions and cost questions, etc).

### 6.1 Costing method

- define and justify the decision on bottom-up vs top-down costing
- define and justify the decision on the method to be used, e.g. activity-based costing, the ingredients method, etc.

### 6.2 Cost standardization

This section should outline the procedure that will be used to standardize cost estimates.

- What order of operations will be used to perform cost standardization and what data sets will be used? Specify rules for treating different costs, e.g.
  - depreciation
  - amortization
  - start-up costs
  - currency of the costing
  - price inflation

## 7 Empirical Analysis

This section should outline the justification and methods for estimating final cost estimates. This should include the type of cost estimates you plan to compute (e.g. incremental cost effectiveness ratio, estimate of the net present value of the interventions, total cost, average cost) and method for computing them.

### 7.1 Calculating unit cost

This section specifies how unit cost – the cost per participant and cost per beneficiary – will be calculated. This includes any adjustment procedure that will be used to align unit cost with the estimand that is the focus of the impact evaluation. It is important to distinguish participants (assigned to treatment) from beneficiaries (treated) so that the unit cost calculation aligns with the study estimand.

- How will unit cost be calculated?
- What adjustments will be used when there is non-compliance with the intervention, sample attrition, spillovers, or contamination? Which costs will be averted (and which will not be averted in each case)?
- What adjustments will be performed to account for scale differences between implementing partners that affect the cost of delivery across treatment arms?
- What assumptions does the costing team hold about the cost of treating the counterfactual group? Under what conditions is this a valid assumption and when would it be violated?

### 7.2 Total cost

How will total cost be calculated?  $TC = p_1 * q_1 + p_2 * q_2 + \dots + p_n * q_n = \sum_{i=1}^n p_i * q_i$

where  $TC$  is total cost and  $p$  is price and  $q$  is input quantity and there are  $n$  inputs

### 7.3 Average cost

$$AC = \frac{TC}{N}$$

where  $AC$  is average cost and  $N$  is the number of households assigned to treatment

### 7.4 Cost effectiveness

- How will cost-effectiveness be evaluated?
- What approach will be used for multiple measures of effectiveness?
- What specification will be used?
- How will the relative cost-effectiveness of alternatives be compared?

$$ICER = \frac{C_t - C_c}{(E_t - E_c)}$$

where  $C_i$  and  $E_i$  are the costs and effectiveness measure of alternative  $i$

## 7.5 Baseline model

- What is the cost structure of the intervention?
- What costs are fixed, variable and mixed in the baseline cost model?

## 7.6 Scale-up

- How will scale-up be investigated?
- What alternative scenarios of intervention delivery will be explored and what are the key assumptions?

## 7.7 Sensitivity analysis

- How will sensitivity analysis be used to investigate key assumptions of the costing?
- What model uncertainties will be explored?

## 8 Research Teams

- Who are the investigators for this study and what do each of these investigators do?
- Who are the investigators for the impact evaluation team and how do the costing and IE teams work together?