

Unit Cost: Calculations and Applications

Planning Council Data Day

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Defining Unit Cost

- What is a unit cost?
 - the cost of delivering one unit of a product or service
 - *example: How much does it cost us to deliver one meal to a client?*
- Why calculate unit cost?
 - provides a basis for cost comparisons between different types of services or providers
 - can be used to identify trends that may signal changes in resources, productivity, or quality of services
 - provides a benchmark for performance measurement

Why is it important?

Unit Costs allow for objective comparisons . . .

- Between different providers who provide a similar type of service
 - Q.: Do providers of comparable services charge comparable amounts?
 - Does not account for many differences between providers: hard to reach clients, clients with multiple health problems, geographical differences
- Between service categories
 - Q.: What are we getting for the money spent?
 - For example, do we want to spend \$10,000 to purchase X meals? Y hours of psychological counseling? A combination of the two? What would serve our client base best?

What else?

Knowing Unit Costs can also . . .

- Promote more effective use of funds
- Provide information that can be used to improve services
 - *Prospective - Program Planning.* Unit costs can inform contracting processes, identify economies of scale, help to establish fee policies, and strengthen future grant applications.
 - *Retrospective - Program Evaluation.* Periodic review of unit costs can quickly identify trends or changes in programs which may require more detailed investigation.

What Unit Cost Is Not

- Not the fee charged
 - fee may be higher or lower than cost of producing and delivering the service
- Not the average expense per client
 - different clients may utilize different services or different amounts
- Not the average amount of grant/contract funds per client or unit of service
- By itself, not a measure of efficiency or effectiveness
- Not perfect - but a good estimate

How to Determine Unit Cost

1. Define the unit of service
2. Count the number of service units provided
3. Identify all direct and indirect costs
4. Determine the full costs of services
5. Calculate the average unit cost

Example:

Case Management

Step 1: Define the units of service

- Identify and define a specific service category
 - case management
- List the types of services provided within that category
 - intake, assessment, re-assessment and follow-up encounters, counseling, support group
- Consider a further breakdown of units where relevant
 - for example, consider different populations: assessments might be separated into those for persons connected to medical care and those unconnected to medical care
 - counseling services may be categorized by the type of provider delivering the service – e.g. social workers, psychologists, or psychiatrists

Step 1: *Continued*

Questions to Consider . . .

- Which definition provides a uniform representation of services provided?
- Can we accurately and easily count this unit of service?

Step 1: Define the units of service

Example: case management services

A unit of service can be defined in different ways:

Episode or Activity

- Face-to-face contacts
- Encounters / Contacts
- Initial assessment visits
- Service visits

Outcome

- Referrals made

Amount of Time

- Hours (in 15 minute increments)
- Therapy hour

Material Good

- Care plan completed
- Discharge packet

Step 2: Count the Number of Units

- Review data to determine number of units provided
- Select time frame (month, quarter, year)
 - Use the same time frames used in other reporting, such as accounting, management or progress reports
- Count services provided during specified time period

Step 3: Identify Direct and Indirect Costs

Direct Costs - related to provision of the service:

- wages & benefits of employees who directly provide the service
- cost of materials
- equipment
- supplies

Indirect Costs - shared across program areas:

- Facility expenses
- Agency management and administration
- Utilities

Step 4: Determine the Full Cost of Service

Total Operating Costs = Direct Costs + Indirect Costs

Full Cost = Total Operating Costs + Depreciation +
Value of Donated Goods and Services

- Depreciation: reduction in value of an asset over time (use any generally accepted method such as straight-line)
- Value of Donated Goods & Services: include the market value of donated goods and services

Step 5: Calculate Average Unit Cost

$$\textit{Unit Cost} = \frac{\textit{Full Cost}}{\textit{Total Number of Service Units}}$$



Where Unit Costs Fit in Cost-Effectiveness and Cost-Benefit Analyses

Steps in Evaluating Program/Service Costs . . .

1. Define and describe the service
2. Agree on standards of care or benchmarks for outcomes
3. ***Determine unit cost ***
4. Determine outcomes
5. Describe cost effectiveness as ratio of cost to outcome
6. Compare and analyze cost effectiveness of several services using ratios
7. Revise priorities, allocations and plan as appropriate

Cost Effectiveness Example

	Case Management Model A	Case Management Model B	Case Management Model C
<u>Unit Cost</u>	Intake: \$75 Follow-up: \$15	Intake: \$75 Reassessment: \$50 Follow-up: \$12	Intake: \$60 Follow-up: \$20
<u>Avg. Client Utilization</u>	One intake and three follow-ups: \$120	One intake, one reassessment, and three follow-ups: \$161	One intake and three follow-ups: \$120
<u>Outcome</u>	30% decrease in clients with unmet need	40% decrease in clients with unmet needs	20% decrease in clients with unmet needs
<u>Cost to Outcome Ratio</u>	4	4	6