Calculating and Apportioning the Costs of Shared Service Activities

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Cost Allocation in Shared Service Activities

How do we account for and determine the shared costs of shared public health services?

Essential point: “Cost allocation schemes are like snowflakes..."; There is no standard approach

Focus today on The “Seven Basic Strategies” for cost allocation of shared public health activities
“County A" and “County B" are negotiating a sharing arrangement for hypertension prevention and management (HPM) services.

HPM program’s total cost = $500,000; mostly public health nurses, a program coordinator, space, and travel

Counties have different demographics and HPM service needs:
- County A has a larger population
- County B’s median household income is higher
- County A has far more cases of Type II diabetes

Equal Share

Allocation formula:

\[
\frac{500,000}{2 \text{ counties}} = 250,000 \text{ per county}
\]

Advantages: simple, transparent

Disadvantages: does not relate to underlying cost drivers
Per Capita Sharing

If County A’s population is 240,000, and County B’s population is 160,000 then:

Allocation Formula:

\[
\frac{240,000}{400,000} = 0.6 = \text{County A’s share of service population} \\
\frac{160,000}{400,000} = 0.4 = \text{County B’s share of service population}
\]

Therefore:

\[
$500,000(0.6) = $300,000 = \text{County A’s cost share} \\
$500,000(0.4) = $200,000 = \text{County B’s cost share}
\]

Advantages: Simple, transparent, perceived fairness
Disadvantage: Population may not correlate well to actual costs, cost drivers, or program objectives

Cost Plus Fixed Fee

Generally a per capita allocation, plus some additional fee to cover start-up costs

For example, County B might adjust its per capita share from $200,000 to $235,000 to compensate County A for hiring a new program coordinator at the beginning of the year

Advantage: Helps address challenges of “fixed" or "step-fixed" costs
Disadvantage: Fees are often arbitrary and difficult to negotiate later on
If County A’s per capita income is $40,000 and County B’s per capita income is $50,000, then:

\[
\frac{40,000}{90,000} = 0.44 = \text{County A’s share of the “Wealth Factor”}
\]

\[
\frac{50,000}{90,000} = 0.56 = \text{County B’s share of the “Wealth Factor”}
\]

Therefore:

\[
500,000 \times 0.44 = 220,000 = \text{County A’s cost share}
\]

\[
500,000 \times 0.56 = 280,000 = \text{County B’s cost share}
\]

Advantage: Perceived fairness
Disadvantage: Politically contentious

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Incidence or Prevalence

If there are 12,740 known annual cases of Type II Diabetes in County A, and 5,460 known cases in County B, then:

\[
\frac{12,740}{18,200} = 0.7 = \text{County A’s share of “HPM Prevalence”}
\]

\[
\frac{5,460}{18,200} = 0.3 = \text{County B’s share of “HPM Prevalence”}
\]

Therefore:

\[
500,000 \times 0.7 = 350,000 = \text{County A’s cost share}
\]

\[
500,000 \times 0.3 = 150,000 = \text{County B’s cost share}
\]
Disadvantage: Measurement issues, especially for preventative services

Weighted Formula

We can combine population, ability to pay, and incidence into a single "weighted formula."

Imagine County A and County B agree to weight ability to pay as 50% of the formula, and population and incidence as 25% each. The allocations for County A/County B for population are .6/.4, for incidence they're .7/.3, and for ability to pay they're .44/.56. The formula here is:

County A: .6(.25) + .7(.25) + .44(.5) = .15 + .175 + .22 = .545
County B: .4(.25) + .3(.25) + .56(.5) = .1 + .075 + .28 = .455

Therefore:

$500,000(.545) = $272,500 = County A's cost share
$500,000(.455) = $227,500 = County B's cost share
If the full cost of an HPM outreach/counseling session is $200, and the HPM program delivers 750 sessions in County A and 1,750 sessions in County B, then:

\[
750 \times \$200 = \$150,000 = \text{County A's cost share}
\]
\[
1,750 \times \$200 = \$350,000 = \text{County B's cost share}
\]

Advantages: Connects costs to cost drivers; transparent

Disadvantages: Difficult to implement without good data on direct costs, indirect costs, service delivery; might not be directly connected to the mission