Calculating and Apportioning the Costs of Shared Service Activities

Justin Marlowe, Ph.D., CGFM
Endowed Professor of Public Finance and Civic Engagement
Daniel J. Evans School of Public Affairs
University of Washington

jmarlowe@washington.edu

Presented at PHSSR Keeneland 2015

April 22, 2015

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

A Quick Example - Hypertension Prevention and Management

"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:

$240,000/400,000 = .6 =$ County A's share of service population

$160,000/400,000 = .4 =$ County B's share of service population

Therefore:

$\$500,000(.6) = \$300,000 =$ County A's cost share

$\$500,000(.4) = \$200,000 =$ 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

Ability to Pay

If County A's per capita income is \$40,000 and County B's per capita income is \$50,000, then:

$$\$40,000/\$90,000 = .44 = \text{ County A's share of the "Wealth Factor"}$$
$$\$50,000/\$90,000 = .56 = \text{ County B's share of the "Wealth Factor"}$$
Therefore :
$$\$500,000(.44) = \$220,000 = \text{ County A's cost share}$$
$$\$500,000(.56) = \$280,000 = \text{ County B's cost share}$$

Advantage: Perceived fairness

Disadvantage: Politically contentious

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:

$$12,740/18,200 = .7 = \text{ County A's share of "HPM Prevalence"}$$
$$5,460/18,200 = .3 = \text{ County B's share of "HPM Prevalance"}$$
Therefore :
$$\$500,000(.7) = \$350,000 = \text{ County A's cost share}$$
$$\$500,000(.3) = \$150,000 = \text{ County B's cost share}$$

Advantage: Often perceived as most fair

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

Fee for Service

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:

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

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