Public Health Funding Formulas in Political Context

Lydia Ogden, MA, MPP

Emory University

Institute for Advanced Policy Solutions

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- Coauthors:

  James W. Buehler, MD
  Patrick A Bernet, PhD

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Project Overview

1. Identify metrics to compare alternative allocations in public health programs
2. Describe the effects of metrics on allocations and evaluate against program aims
3. Explain the effect of adjustments on differences among states
4. Discuss political and policy implications

Funding Formula Use

- Formulas used to allocate >$400B annually across the federal government (not counting ARRA)
- For most HHS formula grants, the allocation formula and data elements are specified in statute
- Formulas have limited use in federal public health (CDC, HRSA) compared to other social programs
- Use by states for public health is largely unknown
- Collaborating with ASTHO on a survey of state health departments

Previous Analyses

- Large body of literature on fiscal federalism – not specific to health:
  - Instruments for intergovernmental transfers: block grants, restricted funds, matching grants
  - Funding schema: fixed amount per jurisdiction, proportional amount, other formulas
- Large body of literature on Medicaid and SCHIP
- 2002 IOM panel on Ryan White CARE Act: Data for Resource Allocation, Planning, and Evaluation
- 2000 IOM workshop focused generally on formula statistical issues
- 2003 IOM workshop focused generally on formula design

Our Analysis (Part 1)

- Examined existing federal formula-based allocations
- Examined hypothetical federal programs using existing formula models
- Examined alternative allocations
- Examined funding adjustors

Measures of need for service

Expressed as each state's percent of U.S. total

DHHS Agency Allocations

CDC: PH Emergency Preparedness

CDC: Pandemic Influenza Planning

CDC: Preventive Health & Health Services

HRSA: Title V MCH

Hypothetical Allocations

P1: Base+: 20% divided equally, 80% based on population

P2: Number of smokers

P3: Number with hypertension

P4: Number of deaths <65 years (premature mortality)

Measures of need for service

Expressed as each state's percent of U.S. total

Alternative allocation models:

- Population size (per capita)
- Number living in poverty (per person-in-poverty)
- Number receiving food stamps (per food-stamp-recipient
- "Income disparity inversion" (per share of national income disparity)

Adjustors based on need

Expressed as ratio: state value / US value

- Cost of delivering service
  - BLS
  - Land area (proxy for transportation costs)
- Wealth/tax revenue potential
  - Per capita income
  - FMAP
  - Enhanced FMAP
  - Total taxable revenues
  - Housing values
- Income inequality
  - Gini coefficient
  - Theil index
  - Atkinson index (ε=0.5, 1.0, 1.5, 2.0)
  - Squared coefficient of variation
  - Mean logarithmic deviation

Comparison Metrics

- Percentage of funds shifted
- Coefficient of variation
- Percentage change in cumulative distribution
- Range of change
  - Number of states with >20% ↑ or ↓
  - % of US population in states with >20% ↑ or ↓
  - Maximum ↑ or ↓
- Proportionality of Allocation (PA): per capita, per person-in-poverty, per smoker

Example: CDC's Emergency Preparedness Funding

	Current Allocation Adjusted for Differences in Per Capita Income	Per Capita Allocation*	Per Person in Poverty Allocation*
Percent of total allocation moved	5%	10%	14%
Number of states with >20% increase	4	4	8
Number of states with >20% decrease	4	22	25
Percentage of US population in states with >20% increase	4%	30%	37%
Percentage of US population in states with >20% decrease	6%	11%	21%
Maximum percentage increase	36%	34%	70%
Maximum percentage decrease	33%	-77%	-82%

* Changes reflect effects of removing guaranteed minimum baseline funding.

Our Findings (Part 1)

- Adjustors matter – *a lot*
- Income and disparity adjustors push allocations:
  - *Away* from per capita referent
  - *Toward* per person-in-poverty referent (obviously)
- Changes to existing formulas result in changes to allocations that will have consequences for program and in the policy environment

Our Analysis (Part 2)

- What are the policy implications of various metrics?
  - What biases are built into a given formula?
  - Why poverty?
  - Which measure?
  - Effects on program aims
  - Effects on program evaluation

Our Analysis (Part 2)

- What are the political implications of various metrics?
  - Money begets money – states with money are likely to get more
  - "Flypaper effect" – federal money sticks and may displace state spending
  - Cui bono? Cui malo?
  - Effects on program evaluation: P4P
  - Effects on perception of efficiency, effectiveness, equity, impact, utility

Summarizing

- Formulas are thought to be transparent and "fair"
- *But* every formula has biases – e.g., definition of and data on persons living in poverty
- Public health practitioners must be aware of those biases – they may choose to do nothing about them (or may be unable to)
- Developing formulas is hard
- Changing existing formulas and allocations is probably harder