

# Who Gets How Much: Funding Formulas in Federal Public Health Programs

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Federal public health programs use a mix of formula-based and competitive methods to allocate funds among states and other constituent jurisdictions. Characteristics of formula-based allocations used by a convenience sample of four programs, three from the Centers for Disease Control and Prevention and one from the Health Resources and Services Administration, are described to illustrate formula-based allocation methods in public health. Data sources in these public health formulas include population counts and funding proportions based on historical precedent. None include factors that adjust allocations based on variations in the availability of local resources or the cost of delivering services. Formula-funded activities are supplemented by programs that target specific prevention needs or encourage development of innovative methods to address emerging problems, using set-aside funds. A public health finance research agenda should address ways to improve the fit between funding allocation formulas and program objectives.

**KEY WORDS:** bioterrorism, block grants, emergency preparedness, funding formulas, public health finance, public health programs

Federal and state public health agencies use a mix of strategies, including funding formulas, to allocate program funds among constituent jurisdictions. The purpose of this article is to illustrate the ways that two federal public health agencies, the Centers for Disease Control and Prevention (CDC) and the Health Resources Services Administration (HRSA), use funding formulas. Because the funding formula used by HRSA's Ryan White HIV CARE Program has been the subject of extensive prior scrutiny,<sup>1-3</sup> we will consider other CDC and HRSA programs.

In 2000, the National Academy of Sciences (NAS) convened a Panel on Formula Allocations to review the use of formula funding by federal agencies.<sup>4,5</sup> The panel reviewed strategies used in the design of formulas as well as the advantages and limitations of formula allocation methods. The panel concluded that the Office of Management and Budget should establish a Standing Committee on Formula Allocations with a mandate to develop "improved simulation and quality control techniques for use in formula design."<sup>5</sup> To date, such an office has not been established (T. A. Louis, PhD, Chair, NAS Panel on Formula Allocations, written communication, 2006). Moreover, the NAS panel did not substantially consider the potentially unique challenges inherent in funding public health programs aimed at disease prevention.

## ● Methods

To illustrate the use of census data and historical precedents in formula-based allocations, we selected a convenience sample of four programs that exemplify these approaches, involve substantial levels of annual funding, and represent different types of program activities. These include the CDC Bioterrorism and Health Emergency Preparedness Program,<sup>6</sup> the CDC

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Pandemic Influenza Planning Program,<sup>7,8</sup> the CDC Preventive Health and Health Services Block Grant,<sup>9,10</sup> and the HRSA Title V Maternal and Child Health Program.<sup>11</sup> We used information publicly available via the Internet to summarize program objectives, the level of funding awarded using formula-based methods, the proportion of funds used to provide minimum funding levels ensured to each grantee, the proportion of funds set aside for special programs, and formula characteristics.

## ● Observations

The CDC Bioterrorism and Health Emergency Preparedness Program (Table 1, section A) was prompted by concerns about bioterrorism but is now oriented toward preparing for a broader spectrum of public health threats.<sup>6,13</sup> Of the \$862 million allocated for this program for the sixth funding year beginning August 2005, \$810 million in “base program” funds were allocated to states and other jurisdictions using a funding formula.<sup>13</sup> Of this latter amount, 28 percent of funds were spent to pay the minimum funding guaranteed to all jurisdictions, and the remainder was allocated on the basis of population size. Set-asides for urban areas (5% of funds) and border states (<1% of funds) allow for additional preparedness needs for these areas.

Under the one-time CDC supplemental funding program for pandemic influenza planning (Table 1, section B), \$100 million of \$350 million in program funds was awarded using a population-based formula,<sup>7</sup> with funding to states for guaranteed minimums accounting for nearly 30 percent of this amount. In July 2006, the CDC announced that of the \$250 million balance, \$225 million would be awarded using a formula-based allocation “contingent upon sufficient responses to certain program requirements” from the initial phase, with the remaining \$25 million to be awarded competitively.<sup>12</sup>

The CDC Preventive Health and Health Services Block Grant is a funding resource that allows states substantial flexibility to address needs not met by other programs and to respond to emerging health threats (Table 1, section C).<sup>9,10</sup> The block grant represents funds that were previously awarded to states under multiple categorically funded programs, and the amount of funds that each state receives is determined by the proportion that each received under the earlier mix of programs in FY-1981. Of the \$129 million in total program funds in FY-2004, approximately \$8 were set aside for rape prevention programs, and this latter amount is allocated on the basis of population size.

The HRSA Title V Maternal and Child Health Program funds are allocated to states using a mix of the above strategies (Table 1).<sup>11</sup> In FY-2004, total awards

were more than \$700 million, including \$594 million allocated using a formula and \$135 awarded competitively. Of the formula-based award, approximately three fourths of funds were allocated using a strategy similar to that of the CDC Preventive Health and Health Services Block Grant, on the basis of proportions of funds that states received in FY-1981 previously under separate programs. The remainder of the funds was awarded on the basis of the proportion of low-income children residing in each state.

## ● Discussion and Conclusions

Major federal public health programs use a variety of formula-based strategies to allocate funds among states and other jurisdictions. These strategies represent a balance between potentially competing interests: simplicity, ability to determine allocations quickly, transparency, relevance to program goals, and meeting states’ needs for federal assistance.

The four formulas examined in this article, as well as the HRSA Ryan White formula,<sup>1</sup> are relatively simple, and, unlike those used by other government agencies,<sup>4,5</sup> none include factors that adjust for regional differences in the cost of providing services or variations in state resources. Although the formulas themselves do not include such adjustments, the impact of these variations may be partly mitigated after awards are made as grantees and federal project officers negotiate the specifics of proposed expenditures or the transfer of unobligated funds from one budget year to another.

The use of funding formulas does not imply that jurisdictions are unaccountable for how they propose to spend funds or have spent prior funds. Although funding levels for each of these programs are set by formulas, the CDC and the HRSA provide comprehensive guidance in program funding announcements, and grantees are required to submit detailed applications that outline how funds will be used, justify proposed expenditures with respect to anticipated costs, and explain how prior year funds have been used.

In addition to the use of formula-based funding for core activities, these programs offer widely varying levels of set-asides for special activities, which may themselves be awarded using a formula or are awarded competitively. Programs funded through competitive set-asides provide an opportunity to foster innovation in addressing emerging problems. All four formulas provide an explicit or de facto level of minimum funding. Although there is little explanation for how minimum levels were set, it is reasonable to assume that minimums resulted from negotiations and compromises in the political and programmatic process of establishing formulas.

**TABLE 1 ● Characteristics of funding formulas for four federal public health programs**

- A. The CDC Public Health Emergency Preparedness Program,<sup>6</sup> \$862 million for funding year beginning August 2006
- Program objective:* “To develop emergency-ready public health departments by upgrading, integrating, and evaluating state and local public health jurisdictions’ preparedness for and response to terrorism, pandemic influenza, and other public health emergencies. . . .”
- Target population:* All citizens in jurisdiction
- Funding allocation for primary program:* \$699,013,268, “base” program. “Each state recipient and Puerto Rico will receive a base amount of \$3.91 million, plus an amount equal to its proportional share of the national population. . . . The District of Columbia, New York City, Los Angeles County, and Chicago will continue to receive a base amount of \$5 million. . . .”
- Funding allocation for set-aside programs:* \$54,786,732, urban area focused funding, 46 selected urban areas participating in the Cities Readiness Initiative; \$5,440,000, early warning infectious disease surveillance, border states; and \$7,200,000, chemical laboratory funding, five selected states.
- B. The CDC Pandemic Influenza State & Local Government Planning & Response Activities,<sup>7,8,12</sup> \$350 million (one-time funding)
- Program objective:* “To accelerate and intensify current planning efforts for pandemic influenza and prepare to exercise their plans”<sup>7</sup>
- Target population:* All citizens in jurisdiction
- Funding allocation for primary program:* \$100 million, phase I, January 2006. “All 50 states, 7 territories, the Commonwealth of Puerto Rico, and the District of Columbia will receive grants from the U.S. Department of Health and Human Services (HHS). Each state will receive a minimum of \$500,000, and the rest of the funds will be allocated by population.”
- Funding allocation for set-aside programs:* “The remaining \$250 million from the appropriation will be awarded later this year in accord with guidance that will require progress and performance” (January 2006). “The remaining \$250,000,000 is being divided into a \$225,000,000 formula award and a \$25,000,000 competitive award. This announcement . . . provides \$225,000,000 to recipients contingent upon sufficient responses to certain program requirements. . . .” (July 2006).
- C. The CDC Preventive Health and Health Services Block Grant,<sup>9,10</sup> \$129 million FY-2004
- Program objective:* “A . . . flexible public health resource used in states and communities” to “respond rapidly to emerging health problems, . . . fund critical prevention efforts when no categorical funding is available, and . . . address the leading causes of death and disability. . . .”
- Target population:* Variable, depending on specific uses of funds
- Funding allocation for primary program:* \$121 million. “Allocation percentage is determined for each state based on the amounts of fiscal year 1981 funds provided to the state for certain categorical health grants that were combined to comprise the Preventive Health and Health Services block grant to the total amount of fiscal year 1981 funds appropriated for these grant programs.”
- Funding allocation for set-aside program:* \$8 million, rape prevention program. Funds are “allocated to states based on the percentage of each state’s population to the national population.”
- D. The HRSA Maternal and Child Health Services Block Grant,<sup>11</sup> approximately \$730 million in FY-2004
- Program Objective:* The program “focuses solely on improving the health of all mothers and children,” including “gap filling” clinical services, “population-based functions” that enable MCH services and strengthen the public health infrastructure, and programs for “children with special healthcare needs.”
- Target populations:* (1) All pregnant women, mothers, infants, and children; (2) those pregnant women, mothers, infants, and children in need of “gap filling” health services; and (3) children with “special healthcare needs”
- Funding allocation for primary program:* \$594 million, state block grant program. Allocation based on “the amount awarded to the states in 1981 for the preblock programs later consolidated into the state grant” (nearly three fourths of formula-awarded funds) and “the remaining amount is distributed based on the proportion of low income children that a state bears to the total number of such children for all the states”
- Funding allocation for set-aside program:* Remaining funds (\$135 million in FY-2004) “are awarded on a competitive basis to a variety of applicant organizations” for special projects

A key challenge in formula design is relating program objectives to data sources and calculation methods. For the CDC Bioterrorism and Health Emergency Preparedness Program, ideally, the allocation would take into account the threat and potential impact of bioterrorism and other specific public health emergencies in various jurisdictions, but quantifying the risk and impact of this mix of events in a way that could be reliably integrated into a formula would be

extraordinarily difficult. The use of population size therefore serves as a cumulative proxy for these risks. In parallel with this CDC program, the HRSA has funded the same grantees under its National Bioterrorism Hospital Preparedness Program using a formula that similarly guarantees a minimum amount to each grantee plus an additional amount based on population, with total awards to states increasing from \$125 million in FY-2002 to nearly \$500 million in FYs

2003–2005.<sup>14,15</sup> In its FY-2005 continuation guidance, the HRSA alerted grantees that beginning in FY-2006, it would move away from formula-based funding and that future funding would be “influenced increasingly” by “the risks and likely medical consequences of various forms of terrorism and other public health emergencies” as well as awardees’ prior performance and the “relative merits of applicants’ proposed initiatives toward selected preparedness priorities as determined by national competition.”<sup>16</sup> Making allocations using a more competitive and risk- and performance-based approach must have proved too ambitious, however, as the HRSA apparently postponed plans to move in this direction and simply stated in its FY-2006 announcement that “independent review will not be necessary since these are formula grants.”<sup>17</sup> In contrast to variations among states in the risks of bioterrorism and other public health emergencies, pandemic influenza could affect virtually all states within a relatively narrow time frame. Given the potential for near universal susceptibility to infection, the size of a state’s total population is a simple proxy for the resources that would be required to respond to a pandemic.

The CDC Preventive Health Services and the HRSA Title V Maternal and Child Health block grants both incorporate historical funding proportions, set in 1981, in their allocation method. This strategy ensures stability in state funding allocations and thus facilitates planning for use of funds, but it may not reflect the evolution of needs and interstate differences in growth rates or health trends in the intervening decades. The CDC and HRSA mitigate this problem to varying degrees, the former by allocating block grant funds for rape prevention using current population data and the latter by allocating a proportion of funds based on current numbers of low-income children—the target population for “safety-net” services supported by the Title V program.

While the HRSA Ryan White HIV CARE Program formula has been the subject of intense scrutiny,<sup>1–3</sup> much less attention has been focused on other Department of Health and Human Services formulas. Altogether, the practice and science of formula-based allocations represents an underdeveloped domain of research in the field of public health systems financing. Future research should focus on the impacts of alternative formula strategies, including procedures for defining funding minimums and ways that funding formulas can provide incentives for improving program performance. The prior work of the NAS Panel on Funding Allocations provides a strong foundation for such research,<sup>4,5</sup> although additional attention is needed to the implications of formula options for prevention programs.

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