

# Contemporary Public Health Finance: Varied Definitions, Patterns, and Implications

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## Keywords

public health finance, governmental public health, foundational public health services, COVID-19

## Abstract

The financing of public health systems and services relies on a complex and fragmented web of partners and funding priorities. Both underfunding and “dys-funding” contribute to preventable mortality, increases in disease frequency and severity, and hindered social and economic growth. These issues were both illuminated and magnified by the COVID-19 pandemic and associated responses. Further complicating issues is the difficulty in constructing adequate estimates of current public health resources and necessary resources. Each of these challenges inhibits the delivery of necessary services, leads to inequitable access and resourcing, contributes to resource volatility, and presents other deleterious outcomes. However, actions may be taken to defragment complex funding paradigms toward more flexible spending, to modernize and standardize data systems, and to assure equitable and sustainable public health investments.

**Dys-funding:**

funding paradigms that inadvertently impede the achievement of public health objectives and strategies or contribute to public health funding paradoxes

**INTRODUCTION**

Financing for public health is sourced from a complex web of public and private entities that include all levels of government, foundations, nongovernmental organizations, and other funders. Each funding source has differing and sometimes competing interests. This complexity is exacerbated by substantial changes over time as policies, policy makers, funders, short- or long-term population health needs, and other priorities evolve. Additionally, fragmentation and long-term instability have compounded the chronic underfunding of governmental public health with “dys-funding.” Underfunding and dys-funding are associated with preventable mortality, increases in disease frequency and severity, and hindered social and economic growth (43).

The public health system was put in the spotlight in 2020 with the emergence of COVID-19. The system entered the pandemic underfunded and understaffed for core public health services and was thus ill-equipped to respond to emergent needs. The public health system saw a large-scale redeployment of the existing workforce to deliver COVID-related services—in many instances discontinuing necessary, routine services by redeploying those persons into roles for which they were ill-equipped—throughout 2020 and 2021. This scenario occurred while hiring for COVID-related work persisted, perhaps suggesting that less nonemergency public health work was performed despite the transient uptick in funding earmarked for COVID work (40). Earmarked funding is a common barrier to flexible, efficient public health service delivery, as many funding streams are categorical (i.e., associated with specific diseases, health conditions, or other priorities) and may be characterized as “rigid” or “siloe,” meaning that the funding may be used only for specific purposes or is otherwise limited (15).

The three key components of public health funding adequacy are effectiveness, efficiency, and equity. Effectiveness is the extent to which funding affects outcomes, efficiency is the extent to which funds are most productively used, and equity is the extent to which funds are distributed where needed. In the United States, these three metrics are often inconsistent at best and poor at worst. This situation was made painfully clear during the COVID-19 pandemic. The US public health response was comparatively poor, illustrated by the substantially higher per capita cumulative deaths and the disparities seen in incidence and mortality as compared with other wealthy countries. For example, Australia’s cumulative COVID-19 death rate in mid-2021 was 2% of that of the United States in March 2021, 8% in 2022, and 23% in 2023. Australia’s success was built on a legacy of well-functioning and trusted public health systems (7). Conversely, persistent underfunding of public health was a key driver of poor results in the United States, though political and socioeconomic inequity and other substantial barriers also played a role (45).

Multiple studies have suggested that public health interventions result in a significant return on investment in terms of both health outcomes and medical cost savings; conversely, cuts to public health spending may lead to substantial increases in health services utilization and costs (35, 37, 38, 41). The equitable distribution of funds across populations is a persistent challenge, subject to biases and competing priorities (23). For example, the federal government awarded hundreds of millions of COVID-19 dollars in May 2021 to health departments representing states and municipalities of large populations, but much of that funding remained unspent for years due to decision-maker delays and other challenges (23). Furthermore, state funding formulas used to distribute funding to local health departments (LHDs) are often base plus models in which each jurisdiction receives a base amount plus a distribution of remaining funds by population. These distribution paradigms are generally agnostic to equity dimensions of at-risk populations, health conditions, and other means of determining equity.

## DEFINING AND MEASURING SPENDING

A key challenge inherent in measuring public health spending is the wide variability in how public health activities are defined and collected. The primary source of governmental public health expenditure data is the federal government. Additional data are available through routine voluntary surveys of LHD members of the National Association of County and City Health Officials (NACCHO) and state health department members of the Association of State and Territorial Health Officials (ASTHO). Each of these resources offers different constructions of expenditure data from a sea of varied charts of accounts, which may not distinguish population-based, nonclinical services necessary for the public's health.

### Constructing National Estimates: The Public Health Activity Estimate

The federal government maintains definitions for public health services and collects data on related finances. Governmental public health activities are included in the National Health Expenditure Accounts (NHEA), organized by the Centers for Medicare and Medicaid Services (CMS) Office of the Actuary (33). The NHEA captures information on a variety of medical care expenses and distinguishes the type of medical care, source of funds, and sponsoring entity. The CMS Office of the Actuary also compiles and incorporates health-related social welfare (e.g., Medicaid), public hospital, and nonhospital health spending from the Census Bureau's health expenditure category labeled function 32 (31). CMS uses expenditure totals from function 32 to construct the Public Health Activity Estimate (PHAE), including governmental public health and other non-hospital health services. Scholars have previously shown that Census and CMS definitions are discordant around defining "public health," which has resulted in the conflation of the PHAE by CMS around what is (and what is not) governmental public health and how much is spent on public health activities in the United States.

The United States has spent trillions of dollars annually on national health expenditures for the past several decades, from \$3.6 trillion to \$4.3 trillion between 2018 and 2021 (13). Governmental public health's share of all national health expenditures (i.e., the PHAE of the NHEA) has typically accounted for less than 3% of all national health expenditures from the NHEA, but that share began to fall at the turn of the twenty-first century and continued through the start of the COVID-19 pandemic (25). The share had remained ~2.8% for the previous decade through 2019 (\$114 billion in 2021 dollars), more than doubled in 2020 to 5.7% (\$250 billion in 2021 dollars), and then decreased in 2021 to 4.4% (\$188 billion) (13). The relative increase in governmental public health spending relative to total national health spending was likely temporary, as many 2020 and 2021 funding streams were supplemental COVID related or time limited (13).

Furthermore, previous research has shown that spending toward population health activities [i.e., activities aligned with the Foundational Public Health Services (FPHS) framework] constitutes, conservatively, one-third to one-half of the official PHAE (32, 33, 49). Thus, the PHAE—the official national estimation of governmental public health spending—very likely overestimates how much is spent on governmental public health. In addition, this more-than-twofold increase in governmental public health expenditures from 2019 to 2020 did not necessarily translate to an increase in the delivery of essential services relative to prepandemic service delivery levels because much of that funding was restricted to COVID-19 prevention and response. Of note, exclusive of supplemental pandemic funding, the core 2020 budget for the Centers for Disease Control (CDC) was \$7.8 billion, reduced by 1% from 2019 and down 2% over a decade that saw increases in population, health disparities, and natural disasters (43).

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### Foundational Public Health Services

(FPHS): crosscutting skills, infrastructure, and programmatic divisions of services that must be available everywhere for the health system to work anywhere

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## Constructing Local Public Health Estimates: The NACCHO Profile

At the local level, revenue and expenditure information are collected from NACCHO LHD members via regular surveys (the National Profile of Local Health Departments, known as the NACCHO Profile). The Census-based Profile is fielded approximately every three years to all 2,450 health departments in the United States. The expenditure and revenue sections of the survey ask each health department to self-report aggregated data by standardized fiscal year. The longitudinal Profile offers detailed information on local public health financial patterns over several decades.

Limitations of these data have been noted in the literature and within each of the Profile reports (46). In the expenditure section, for example, both differences in fiscal year and incongruities in what should be counted as agency expenditures have limited comparisons across agencies. Furthermore, within the revenue section, imprecision in the federal and state pass-through categories has led to data suppression in some Profile reports and limited data use in longitudinal and multi-cross-sectional research initiatives. Despite these limitations, based on citation counts, the NACCHO Profile is the most frequently used source of local public health–based financial data.

Additional sources of local public health spending data have emerged in recent years, most notably in reports of not-for-profit hospitals' community benefit spending (28). Under the Affordable Care Act, not-for-profit hospitals in the United States are required to report on activities that justify tax-exempt status, including spending beyond traditional charity care, Medicaid losses, and other spending that is considered to be for community benefit or community-building activities (28). These expenditures generally relate to hospitals' core health care missions and charity care activities, rather than essential public health services. Still, some not-for-profit hospitals have leveraged community benefit dollars to deliver population health–promoting services construed as public health services.

### Absence of Uniformity

The lack of uniformity or standardization in governmental public health financial reporting structures has made standardized financial comparisons impossible until fairly recently, impeding any substantive assessment of public health's value proposition by policy makers and researchers. LHDs must answer to their county or state offices of management and budget and thus may have no say in financial data reporting categories, formats, or templates. Per a major recommendation outlined in the 2012 Institute of Medicine finance report (15), data standardization would

ensure that expenditures were recorded consistently among jurisdictions and would support management, permit comparisons between jurisdictions, and allow more accurate estimates of public health spending by states, regions, and the nation. A uniform chart of accounts would also provide a reliable basis for studying how variability in use of resources leads to differences in processes and interventions and how they lead to differences in outputs. It would help local health departments to make more informed decisions on allocating their resources. (p. 79)

However, the widespread adoption of a uniform chart of accounts may be impractical, given that it would require either updating thousands of city, county, and state financial reporting schemas or asking health agencies to generate two separate sets of financial reports. An alternative is standardized reporting to a crosswalked definition set, as is done in federal financial reporting for the Health Resources and Services Administration (HRSA) minimum data set, the National Center for Education Statistics' (NCES) integrated postsecondary dataset, or CMS's Medicare cost reports. A crosswalked set may also aid researchers in scholarly undertakings around public health econometric analysis, which has been somewhat sparse (15). Reconciling the differing

definitions and accounting mechanisms for governmental public health has been challenging. Two initiatives to address this situation have evolved over the past several decades, starting with the Public Health Uniform National Data System (PHUND\$) in the mid-2000s followed by the development of the Uniform Chart of Accounts (UCOA) through the 2010s (3, 26). The UCOA has seen small but growing activity from LHDs in the past decade, spurred in part by public health system transformation efforts (51).

### **The Rise of Foundational Public Health Services**

The rise of essential services frameworks has transformed the mapping of expenditures over time. In the 1990s and early 2000s, the nation galvanized around models of core or essential public health services promoted by the CDC and adopted differentially by local and state governments (14, 16). In the mid-2010s, the FPHS model was created, following an investigation into the nation's public health systems structures and functions (48). The FPHS framework divides public health services into two categories: foundational capabilities and foundational areas. Foundational capabilities are the underlying core infrastructure and skills, such as public communications and data analysis, which cross-cut services and enable staff to deliver services effectively and efficiently. Foundational areas refer to population-level activities in domains such as infectious disease control, environmental public health, and maternal and child health. To implement the FPHS model, agencies must consider the varied nature of definitions for public health services and a patchwork of policies to construct a distinct package of population-based, often mandated governmental public health services.

Although the FPHS model has shown promise in aligning definitions of public health services, nationwide adoption has been slow (though it is accelerating), and models articulated by states and localities have differed somewhat based on those jurisdictions' priorities and funded services. Health departments sometimes obtain grant money to offer subsidized services such as emergency medical services, medical transportation, and home health care. Health departments can also generate revenue by billing Medicaid and private insurance to provide behavioral health, dental health, and primary care. Finally, because of holes in the US health care safety net, LHDs have become providers of last resort for a patchwork of clinical care services. These heterogeneous service portfolios drive some of the complexity of funding streams noted elsewhere in this article and create serious challenges for defining and measuring public health spending. However, in combination with tools such as the UCOA, the FPHS may facilitate more detailed and accurate estimates of expenditures.

### **HOW FUNDING TRICKLES TO LOCAL PUBLIC HEALTH**

Public health's amalgamation of federal, state, and local government funding sources varies substantially across jurisdictions, services provided, governance type, time, and events. For this article, we define "federal" to include federally appropriated dollars (e.g., grants, cooperative agreements); "state" to include state-appropriated dollars (e.g., state formula funds, special revenue funds); and "local" to include all city, county, district, and other municipal governmental and nongovernmental funding sources that vary as a function of those jurisdictions' needs and funding capabilities. Governmental pass-through dollars, categorical federal funding from the federal government passed through the state to local governments, are classified here as federal sources; while some states may include additional criteria on how pass-through funds may be used by local agencies, the most guidelines on appropriate use of funding originate at the federal level. Many additional sources of funding are smaller in scale than federal, state, or local funds (e.g., public health levies, federal cooperative agreements) but still support specific services or provide

necessary agency-wide flexibility. Other funding sources include service fees/fines, private health insurance reimbursements, private foundations, tobacco settlement funds, etc.

### The Influence of Federalism

The Tenth Amendment of the US Constitution gives states the power to self-govern in setting out population-wide policies that affect public health. In turn, individual states' constitutions parse out the roles and powers of state and local public health. There are four general types of state–local public health governance:

1. Centralized/largely centralized—local health units are led primarily by employees of the state;
2. Decentralized/largely decentralized—local health units are led primarily by employees of local governments;
3. Mixed—some local health units are led by employees of the state, some are led by employees of local government, and no single structure predominates; and
4. Shared/largely shared—local health units might be led by employees of the state (the local government has the authority to make fiscal decisions) or by employees of the local government (the state government has the authority to make fiscal decisions) (2, 11).

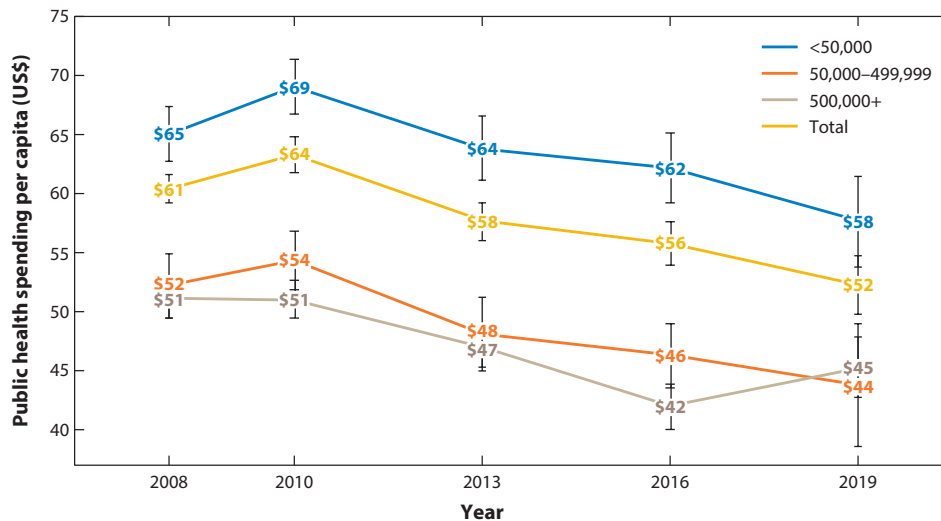
Alongside the de jure configuration of legal authority, there is the de facto power of the relative sizes of federal, state, and local governments' funding powers. The ability of the federal purse to offer earmarked funds aids in enticing state officials to adopt funded programs in public health areas. Similarly, the larger state government budgets in decentralized or shared governance states encourage LHDs to configure their staffing and infrastructure to service those programs. As a result, services that address specific conditions or events or serve particular populations make up the bulk of public health spending. Fiscal oversight and budgetary reporting are easier to configure when funds are being spent on defined packages to do measurable things, and these funds are thus commonly earmarked. Unfortunately, funding for core capabilities is often not part of earmarked funding and occurs haphazardly.

### Intergovernmental Transfers and Sources of LHD Funds

Tracking the origination and ultimate destination of public health expenditures is challenging due to myriad technical and political issues. For example, federal funding for some essential public health services may be made directly from federal agencies to community organizations without passing through either state or local health agencies. So not all these funds would be captured by existing public health spending data sources. This discrepancy may lead to double counting for some intergovernmental transfers if not appropriately addressed.

**Federal sources of LHD funds.** At the federal level, pass-through and direct funding levels (16% and 11% of total LHD revenues, respectively, as of 2019) have remained somewhat consistent since 2008—roughly \$12–13 per capita after adjusting for inflation (46). On the other hand, clinical revenues have seen recent declines from an inflation-adjusted mean of \$23 per capita in 2010 to \$13 per capita by 2019 (46). Although the provision of some direct services has increased over time, many direct services have been in decline or largely discontinued, which may be associated with declines in clinical revenues (24, 27, 46).

**State sources of LHD funds.** ASTHO Profile data from 2018 showed that 28% of state health agency funding came from state sources, 53% came from federal sources, and 19% came from other sources (1). At the state level, mean per capita funding for local public health from state



**Figure 1**

Per capita public health spending by county population size (2008–2019). Data from NACCHO Profile surveys, 2008–2019.

sources has largely remained consistent since 2008 at \$10–14 per capita. State-level funding for local public health can vary by population served and location, with rural LHDs and LHDs in states with shared governance models seeing higher funding from state-level sources.

**Local sources of LHD funds.** The 2019 NACCHO Profile reported that mean and median LHD per capita expenditures were \$56 and \$41, respectively (46). A total of 25% of LHD funding came from local sources, 21% from state sources, 37% from federal sources [including federal pass-throughs (16%), federal direct (11%), and Medicare/Medicaid (10%)], and the remaining 17% from other sources. Per capita expenditures for all local population groups trended downward between 2008 and 2019, except for the 2010 period, as illustrated in **Figure 1**.

### Other Notable Patterns and Trends

Beyond top-level spending estimates and trends, there are some nuanced and consequential issues around measuring public health spending. Top-level spending estimates and trends have influenced current financing paradigms for governmental public health in subtle but consequential ways.

**Shifts in local fiscal allocation.** Because local funding sources constitute roughly one-quarter of LHD expenditures, a community’s local tax base is relevant for funding local public health. Recent studies have shown that the local fiscal allocation—the relationship between local public health revenue sources and total local taxes in that jurisdiction—may be indicative of local priorities and the perceived value of public health services (39). The LHD governance, jurisdiction size and type, and extent of long-term debt are associated with the local fiscal allocation; that fiscal allocation is associated with LHD per capita expenditures and the provision of public health services. Changes in macroeconomic trends and local priorities have shifted responsibility, and relative financial investment, away from public health services (39).

**Moving away from clinical services.** In many health departments, trends in contemporary public health practice have shifted priorities toward population-based services and away from the



provision of clinical services. As of 2019, LHDs' clinical revenue sources accounted for a mean of \$13 per capita (median \$4 per capita), although per capita clinical revenues were substantially higher for jurisdictions of 50,000 and fewer persons, with shared governance, in rural areas, or the US Midwest and South regions (46). A commensurate loss in clinical revenues can accompany the discontinuation of clinical services. The extent to which clinical revenues cover clinical expenditures and the extent to which those revenues may subsidize other public health programs (e.g., through indirect or overhead rates) are unknown, and these topics would benefit from further research.

**Uncertainty and variation.** Public health, as a field, overlaps somewhat with both health care and social services, creating uncertainty and variation in defining the boundaries of public health. For example, while public health professionals would recognize environmental health services as a foundational public health service, environmental health services are not always performed by health departments. In addition, environmental health services expenditures are not necessarily counted under the Census Bureau's Health category versus a different category elsewhere in the Census of Governments classification schema. Considerations for such measurement uncertainties are often accounted for by practitioners and researchers when analyzing public health spending and when comparing across jurisdictions (e.g., adjusting data for statewide estimates in cost and capacity assessments).

## PROBLEMS WITH CURRENT FINANCING

There are a multitude of problems with the financing of public health services at all levels of government, arising from structural, political, and paradigmatic bases. The following subsections elucidate specific issues with contemporary financing.

### Neglecting the FPHS Foundational Capabilities

The lack of spending on FPHS foundational capabilities occurs despite the broad recognition that crosscutting skills and capacities are the essential functions that LHDs should routinely provide to keep populations healthy. Allocating funds to core capabilities is an ongoing challenge because typical funding flows are packaged in disease- and service-specific siloes. Funds typically have specified, measurable deliverables, and the receiving agency is obligated to allocate funds to those services. For example, many states receive federal Women, Infants, and Children (WIC) program grants to provide nutritional services. When subawarding to local jurisdictions, state staff scrutinize county budgets and reimbursement requests to ensure that local staff, supplies, equipment, and other expenses for the WIC grant clearly serve WIC beneficiaries. State health departments or LHDs that aim to use WIC funds outside of the terms and conditions of the grant, such as for epidemiological surveillance, building partnerships, or addressing hazards in the home, will be disallowed from using the funds in these ways.

The public health workforce has evolved to deliver direct services in patterns that conform to the terms and conditions from service-oriented grants. Hence, the presence of WIC grants leads to the employment of dietitians, drug rehab program grants lead to the employment of psychologists, and so on. However, typical service grants do not explicitly call for staff that deliver foundational capabilities, such as epidemiologists, health educators, and health policy analysts. Furthermore, some awards disallow spending on personnel for these basic public health cadres, so health departments must piece together funds for existing staff or new hires. Those same core funds must also pay utility bills, compensate administrative or clerical staff across programs, cover organizational activities such as human and financial resource management, and fund other infrastructure. Thus, considering new hires for foundational public health work supported by projected core



funds requires tremendous confidence. These core funds also cushion against unplanned fiscal crises.

Neither the federal PHAE nor the NACCHO Profile estimates of local public health budget allocations offer enough detail to conclude what is spent locally on core capabilities. However, one study of LHDs in Ohio confirmed low spending on foundational capabilities, with a median of \$7.67 per capita (51). Another study showed that foundational capabilities in state health departments' budgets may represent only a tiny fraction of total expenditures, potentially less than 10% of the total budget (49).

Multiple reviews of areas that needed improvement in public health departments' handling of the COVID-19 pandemic pointed to issues of public trust, gaps in communication, gaps in preexisting partnerships, and gaps in the ability to form and execute policies; each issue stems from the neglect of core capabilities in prior decades (5, 17, 19, 47).

Some exceptional federal funding does support LHDs' core capabilities. For example, LHDs carry the weight of much local partnership formation and communications (29, 42) in emergency preparedness. To support this function, Public Health Emergency Preparedness (PHEP) funding appears as a line item in the Presidential budget and is detailed by the CDC. In fiscal year 2022, total federal PHEP spending was \$652 million or roughly \$2.00 per capita (12).

The federal Preventive Health and Health Services (PHHS) Block Grant program has awarded hundreds of millions of dollars annually to state, local, and territorial public health agencies—~\$150 million per year between 2018 and 2022—to support public health infrastructure, public health communication, and community-based programs and for specific preventive and health promotion services (8–10). Nominal funding dropped sharply from 2018 (\$159 million) to 2019 (\$147 million) and remained essentially flat for the following years (8, 10). Expenditures adjusted to 2022 showed that PHHS funding has trended downward from 2018 (\$187 million in 2022 dollars) to 2022 (\$146 million), an inflation-adjusted loss of ~\$9 million per year (8, 10). The PHHS, widely viewed to be a flexible funding source, has become less and less of an option to support foundational capabilities.

### **Neglecting the FPHS Foundational Areas**

Similar constraints have been found with respect to funding the FPHS foundational areas in which flexible funding is rare. Some foundational area programs typically have categorical or earmarked funds, such as grants for immunization and vaccines for children, which are dedicated to solving important problems. Other examples include funding to identify, prevent, and treat diseases such as hepatitis, tuberculosis, and sexually transmitted diseases. In each case, grant terms and conditions explicitly do not allow for expenditures on personnel for core capabilities. Fragmented earmarked funds are a root cause of neglect for core capabilities and justify our claim that US public health is dys-funded.

### **Inequitable Access and Resourcing for Partnerships**

While funding flows from the top down, local priorities are recognized and developed from the bottom up. In an ideal world, given sufficient infrastructure, a local health department could leverage local strengths and assets, convening local stakeholders to participate in crafting targeted solutions. Unfortunately, this vision of the cooperative capability of LHDs remains unrealized mainly due to funding streams that impede paying LHD staff to carry out foundational capabilities.

It is inefficient to focus funding on fixing health deficits rather than helping LHDs realize their full capacity to conduct public health activities by convening local resources off government balance sheets. For example, LHDs that managed to partner with local schools could use school

nurses and school gymnasiums as COVID vaccination clinics without paying from government budgets. LHDs that partner with area food banks can influence food quality without buying food with tax dollars. LHDs that partner with the faith community can draw on and coordinate volunteers for outreach to shut-in seniors. Few of these community partnership solutions are explicitly allowed in state or federal grants. Yet examples such as these arise from resourcing the infrastructure for building and sustaining critical community partnerships. Such partnerships cannot be built if the health department's funding disallows resourcing core capabilities.

Another structural inequity in public health financing derives from the fact that nonfederal sources of funding for public health arise principally from local and state government tax bases, which reflect historical and contemporary inequities in household and corporate income and wealth across communities. A local government's fiscal capacity to invest in public health activities, therefore, is constrained by community wealth that can be tapped through local property taxes, economic activity that can be tapped through local sales and income taxes, and through transfers from state taxes. For these reasons, larger and wealthier communities have greater fiscal capacity to invest in public health activities than do their smaller and less-affluent counterparts, even as these counterparts may face greater needs for funding (36). In the absence of explicit federal and state policies designed to equalize fiscal capacity across local jurisdictions, these structural inequities in financing persist and may grow over time.

### **Resource Volatility and Sensitivity to Economic Cycles**

Because LHD funds are typically tied to diseases and services that are trending in state and federal circles, they are subject to the vagaries of elected and unelected officials. For example, a state might have a system where each county arranges local vendors to provide medical transportation because locally tendered suppliers know the area better and offer more accountability. This system is liable to change for political reasons if state authorities find it in their interest to centralize the system to a single vendor for the whole state. Suddenly, dozens of health department staff who thought they had job security are unsupported unless newly earmarked funds arrive. In addition, economic cycles may play havoc with health department financing; for example, the Great Recession of 2008 left a lingering reduction in staffing that took years to recover from (6, 30). Additional cuts to federal, state, and local public health funding may be on the horizon without broad support of sufficient and sustainable investments.

Local public health funding can also be impacted by local and regional events such as natural disasters and other emergencies. In these situations, disaster declarations may make additional dollars available to LHDs. However, the money will likely be slow to arrive, and, while vital, it does not create sustainable funding streams to support local public health work (29). Delayed receipt can lead to insufficient capacity to respond to emergency situations. Even with funding, regions affected by repeated public health emergencies are often hard-pressed to meet community needs. As an example, eastern Kentucky was hit with unprecedented flooding in the spring of 2021 while still working to control the spread of COVID-19 in the community. Water filled the Lee County Health Department, and rescue boats were sent to save COVID-19 vaccines, along with other vaccines for children, when the building lost power (18). The region continues to face weather-related crises on top of persistently poor health outcomes, and resource volatility compounds these issues (18).

### **Neglecting Public Health 3.0**

A fragmented top-down flow of funds has been an obstacle for LHDs that aspire to deliver the promise of Public Health 3.0, a vision of enhanced and expanded public health practice

that promotes collaboration and collective action (20). The Public Health 3.0 model posits that governmental public health (particularly local) should lead communities in public health strategies, partner across sectors, pursue excellence, leverage contemporary resources to address social determinants of health, and manage sufficient and flexible funding (20). Without funding streams that are flexible enough to pay for core capabilities, LHDs will have difficulty securing a workforce that can reliably carry out all the essential public health functions. Earmarking funds for specific programs results in the unintended consequence of diverting energy to those select projects and away from convening a community's efforts to address emerging health problems.

The public relations challenge for LHDs is to make the case that their core capability spending is the foundation of better health for their communities. This argument is winnable, but it needs champions in public health academia, including "pracademics," who can generate this evidence. It is common for a researcher in public health to collect and analyze data and publish an evaluation of an established, well-defined program. However, where LHDs often face difficulties is in defending the relevance of essential public health functions. A professional researcher's in-depth evaluation and analysis of the local landscape and needs would illuminate the ways that community partnerships and communications contribute to service delivery outputs, system resilience, and better population health and could be used in turn as a tool to help secure necessary funding.

## **DIRECTIONS FOR IMPROVING PUBLIC HEALTH FINANCING**

Despite decades of calling for improvements in how we fund, track, and allocate public health resources, there are still substantial gaps in what we know about public health financing. Addressing major public health crises such as the COVID-19 pandemic, gun violence, and growing health inequities requires a solid public health foundation (29). Building that foundation requires sustained and sufficient financing to support the delivery of the FPHS, standardization of financial data collection and monitoring, and more equitable allocation of resources across communities. These recommendations may be championed by those creating comprehensive public health research agendas, such as AcademyHealth and the Bipartisan Policy Center (21, 50).

### **Defragmenting for Flexible Spending**

Policy makers should endeavor to avoid boom-and-bust funding patterns and their associated moving targets of priorities. Prevention of this approach should also serve to prevent the acquisition of large pots of funds that are challenging for health departments to spend and that quickly dry up (43). Funding streams may be further defragmented by policy makers through the development of infrastructures (e.g., administrative capacity, governmental authorizations) or organizations (e.g., third-party businesses) that may spend funds more effectively or efficiently and prevent further dys-funding and fragmentation.

Defragmenting and assuring a sustainable flow of funds may remove obstacles for LHDs that aim to transform their public health systems. Overcoming such challenges supports building a robust public health system that can adequately meet both persistent and emerging population health needs (43). Furthermore, reforming categorical or siloed funding structures may encourage the receipt of flexible and braided funds from governments, cross-subsidization from service revenues, and robust grants from public and private partners (15). These activities are not simple or quick and require long-term, strategic initiatives with broad support. These activities should also encourage crosscutting capacity development and incentivization for strategic priorities (15).

## Public Health Financial Data Modernization

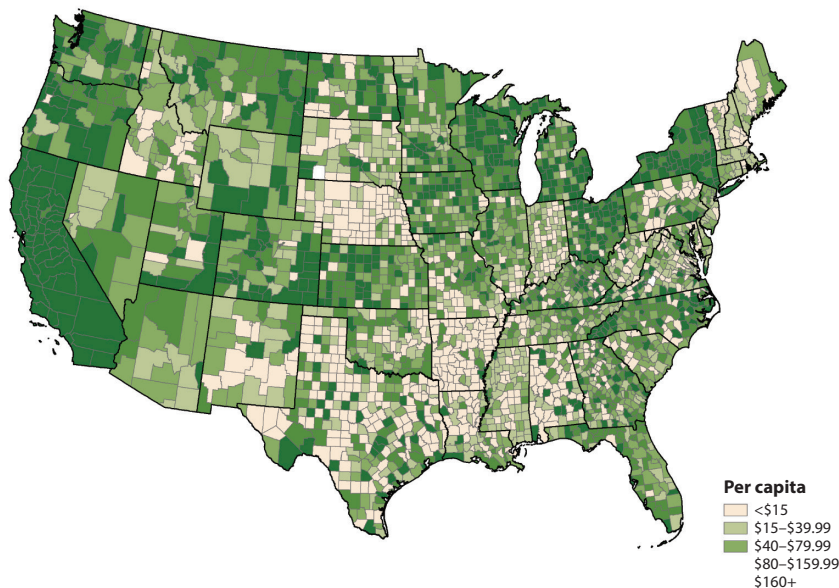
Improving data systems that monitor funds supporting public health departments is critical in tracking and measuring public health financing. Given the significant variation in how public health activities are defined, developing standard definitions when possible and crosswalks that better align activities would be a first step in developing tracking mechanisms. Work in this space is ongoing, but local adoption of standardized data collection and reporting in public health has been slow, despite the practice prevailing in health care, education, and other sectors. This slowness may result in part from competing priorities at the state and local levels and the lack of a uniform financial reporting structure, such as the UCOA. Despite many calls over the past decade for developing a UCOA crosswalk, the field has made very little progress toward widespread implementation. Local public health agencies have little control in setting their financial reporting structures and are often opted into state systems that sync with other government entities to facilitate oversight. Asking state health departments to develop a resource tracking tool for local public health agencies that links to a national reporting system might be one way to encourage more consistent reporting. Ensuring that the reporting system more intentionally tracks state pass-through funds and captures financing of foundational capabilities would also greatly enhance public health finance data. State agencies need support and resources to allow staff to dedicate time to develop such systems and to engage with local public health and other partners to generate support for those systems.

Current data sources do not provide sufficient information on county public health spending, nor do they track financing for FPHS capabilities. Not knowing what activities cost limits public health from asking for the resources needed to carry out the foundational capabilities. Limited knowledge of resources spent on capabilities and other activities impedes how researchers can develop evidence supporting increased investment in activities outside of federal and state priorities. Indeed, while research examining the value of public health investments has increased in recent years, there is still a substantial opportunity to grow the evidence base. Many studies have focused on the relationships between overall public health spending in a community and health outcomes associated with that spending, though a cohesive research agenda is lacking (4, 22, 44, 52, 53). This scarcity may result from the challenges in measuring public health financing more granularly at the community level.

## Ensuring Equitable, Adequate, and Sustainable Investments

Policy makers do not typically allocate public health funding based on community needs. Indeed, prior research has shown substantial variation in public health spending across the United States. As **Figure 2** demonstrates, rural communities spend less than most urban areas do. Limited funding reduces the capacity to perform basic public health functions, reducing population protections for an already underserved community. Bolstering community capacity through federal financing may be one mechanism to address geographic inequities in public health spending.

Increasing the autonomy of local public health agencies to dictate needs and have flexibility in where they spend dollars may better align community priorities with funding streams. Current structures funnel money into initiatives that address state and national priorities but often neglect the foundational capabilities and community-led priorities. Creating a governance structure that facilitates shared decision-making between federal, state, and local levels would increase local public health's ability to identify needs and advocate for resources needed. This paradigm shift will require significant departures in how state and federal public health agencies think about public health priorities and how they allocate funding. Local priorities will need to be considered at least equal to, if not more important than, national and state initiatives.



**Figure 2**

Map of per capita nonhospital health spending (2017). Data from Census of Local Governments, 2017.

Note: Alaska and Hawaii are excluded from the figure due to insufficient data. <https://www.census.gov/data/tables/2017/econ/gus/2017-governments.html>.

## CONCLUDING THOUGHTS

The financing structures and paradigms of the national public health enterprise are confusing at best and fraught with competing priorities, inadequate expenditure classifications, and complex intergovernmental arrangements. In addition, public health funding from all sources—adjusted for inflation and setting aside COVID-19 crisis funding—has generally trended downward over the past several decades, widening the gap between current and needed funding. Contemporary research suggests that governmental investment in the public’s health should exceed \$32 per person per year from all levels of government to enable public health to deliver foundational services (19, 34). However, current governmental investments are only two-thirds of the way to that objective (19, 34). The potential for more widespread adoption of FPHS and UCOA utilization offers hope for enhanced data quality on national public health spending. It is incumbent on academia and the practice community to work with policy makers and those crafting research agendas to further these efforts into a better vision for tomorrow’s future.

### SUMMARY POINTS

1. Research suggests that public health activities offer significant returns on investment, but public health suffers from chronic underfunding, dys-funding, and siloing.
2. There is wide variability in how public health activities are defined and measured, which impedes development of national estimates. Frameworks such as the Foundational Public Health Services may facilitate accurate and reliable spending estimates.

3. Contemporary funding paradigms inefficiently and ineffectively finance governmental public health systems. To improve, funding streams must defragment, modernize, and prioritize sustained and sufficient investments in public health.

## DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

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