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The Impact of Federalism on
U.S. Health Policy Formulation, Implementation, and Evaluation

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An abstract of
a dissertation submitted to the Faculty of the
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Abstract

The Impact of Federalism on
U.S. Health Policy Formulation, Implementation, and Evaluation

By Lydia L. Ogden

This dissertation comprises three interrelated articles examining the impact of federalism on health care and public health in the United States. The American federalist system of governance is characterized by ambiguity and dynamism, distinguished by a constant polarity between centralizing and decentralizing forces. In the realm of health policy, federalism fosters cyclical, iterative evolution, a diffuse policymaking environment, and tradeoffs between local, state, and federal governments.

"From Poorhouse to Warehouse: Institutional Long-Term Care in the United States" assesses how federalism has shaped American nursing home policy and politics. Over time, institutional long-term care for frail elders has shifted from local government funding and administration to state-level oversight and support to a shared federal-state concern. The unsystematic approach to U.S. long-term care policy, a result of federalism, produces haphazard results in terms of quality, equity, and efficiency. The graying of the American population will increase the demand for long-term care, resulting in pressure for a more coherent policy response.

"Public Health Funding Formulas: Policy, Political, and Practice Considerations in the U.S. Federalist System" examines a specific tool of federal grant-in-aid programs: funding formulas for grant allocations. As a tool of fiscal federalism, formulas for funding allocations are used widely in federal health and social welfare programs, but are generally limited in federal public health. Federalism structures financing and disbursement options; funding formula designs affect allocations and program outputs. Funding choices – e.g., financing, allocation structures, definitions of need, and targets – affect perceptions of program efficiency, effectiveness, and utility.

"Punctuation Marks: Can Punctuated Equilibrium Explain Federal Health Budgeting in the United States?" tests Jones' and Baumgartner's policymaking theory in the realm of federal health budgeting and assesses the array of health policy system inputs, including national and state-level party control, policy, and sociodemographic variables. This framework offers a model for understanding the correspondence – or lack thereof – between what the public wants regarding health care, how public servants understand and act on those wants, and the effects on health entitlement policy and spending.

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POORHOUSE TO WAREHOUSE:

INSTITUTIONAL LONG-TERM CARE IN THE UNITED STATES

ABSTRACT

Nursing homes are a reflection of American federalism, a complicated, dynamic system that both presumes and facilitates differences among the states, leads to inconsistent policies between and among states, and produces muddled policymaking and policy directives at the federal level (Derthick 1996). Over time, institutional long-term care for frail elders[1] has shifted from being seen as an exclusively local problem supported by local funds to a state concern funded (in part) and overseen (often laxly) by middle-tier governments to a shared federal-state matter (funded by a combination of federal and state monies and regulated by states under federal standards). With the graying of the American population, and the increased demand that will result for long-term care services, pressure is mounting for a more coherent policy response.

NOTE: A version of this paper was published in 2008. See: Ogden L, Adams K. (2008). From Poorhouse to Warehouse: Institutional Long-Term Care in the United States. *Publius: The Journal of Federalism* 39(1):138-163.

[1] The history of institutional care for special needs populations other than frail or needy elders – individuals with cognitive or physical impairment (or both) and veterans – is beyond the scope of this paper. While many of the overarching issues relating to institutional care are similar across groups, there exist significant differences in the social-political constructs surrounding each, and thus governmental financing, payment, and regulatory schemes. Likewise, long-term care for elders outside nursing homes – specifically assisted living facilities and home- and community-based care – is not addressed, except in passing.

INTRODUCTION

The inconsistency of long-term care policy in America results from federalism's ambiguity and dynamism – ambiguity arises from overlapping performance of key functions and dynamism from periodic invasions of policy space occupied by one level of government by another, forcing reactive changes that, in turn, induce further change (Anton 1997). It is also partly a function of hobbled majoritarianism, in which "the dispersion of authority provides ample opportunity for derailing reform plans," even where mass preferences appear clear (Marmor 2000, 174). Given the difficulty of policymaking under these conditions, a uniquely American solution to elders' long-term care needs emerged over time, resting on "traditional distrust of a large and activist government, interest group politics, and the continued need for care otherwise unavailable…," and that arrangement is particularly resistant to change (Holstein and Cole 1996, 44).

Marmor writes of the "persistent divergent approaches to problems of social welfare in America," a dichotomous approach that pursues social insurance on the one hand ("partial solutions to commonly recognized programs through a financing mechanism that is regressive") and private and public charity (the latter funded through the general revenues of federal and state governments, which "in principle provides a more progressive tax base") (Marmor 2000, 25-26). The American policy approach to long-term care has been characterized by swings between the two views and is currently a hybrid with elements of both. No characteristic more aptly displays this tension than the convoluted assignment of long-term care coverage in publicly financed programs. Exhibit 1, page 30, shows nursing home expenditures by payer, 1968-2008. Through a complicated evolution, short-term care (100 days or fewer) in a skilled nursing facility following a three-day (or more) hospitalization is funded for elders by Medicare, the federal health insurance program for all those aged 65 and older. Medicare covered about 19% of overall spending on nursing home care in 2008 ($25.7 billion). Long-term care is funded chiefly through Medicaid, the joint federal-state health insurance program for poor Americans, which requires

non-poor elders to "spend down," that is, deplete their financial resources, in order to meet Medicaid's means-tested requirements. Eligibility and covered services vary from state to state. Medicaid covered 41% of nursing home care in 2008 ($56.8 billion), with the federal contribution 24% of overall spending ($32.7M) and the states' share 17% ($24.1 billion). Only about 10% of the elderly have private long-term care insurance, and private insurance currently pays about 7.5% of nursing home expenditures, or $10.3 billion in 2008. Out-of-pocket expenditures are a substantial share of nursing home expenditures: slightly more than 30% and $42 billion. Medicare is a social health insurance program, funded partially from payroll taxes paid by employees and matched by employers; high-income Social Security beneficiaries pay income tax on Social Security income, a portion of which goes toward Medicare. Medicaid, on the other hand, is funded from general revenues at both the federal and state levels. This messy policy reflects the unsystematic American approach, which produces haphazard results in terms of quality, equity, and efficiency.

A second dichotomy strongly colors the policy milieu: "Although the debate over long-term care reform has many facets, it is primarily an argument over the relative merits of private versus public sector approaches" resting on values (Wiener, Illston, and Hanley 1994). The persistence of this political dichotomy does not facilitate productive policymaking. The market for nursing home services is complex and fragmented, dominated by a single purchaser (the government – or, rather, multiple state governments and the federal government), acting as an agent for the consumers of services. Government is also the licensor and regulator of the industry. Consumers are unable to evaluate the quality of what the government is buying for them (or what they buy on their own), and the government is not much better at quality assessment, therefore determining what to purchase and what to pay is difficult (Vladeck 1980). This observation is particularly trenchant given the national government's online "report card" consumer awareness effort, the first action principle of the current federal plan to improve nursing home quality (Weems 2008).

Added to this are long-standing ambivalence that characterizes the public's (and politicians') views of poverty, changing notions of deservingness based on age, shifting ideas of which level of government is best suited for service delivery, funding, and oversight (particularly reflected in the complex system of regulation), and persistent and difficult questions of financial security, equity, efficiency, affordability, accountability, political sustainability, and individual liberty (Cox 2005; National Academy of Social Insurance 1999). Historically, issues related to government roles, responsibilities, and relative preeminence revolve around both ideology and pragmatism, with strongly held views about federalism on either side of the political spectrum being moderated by a persistent pragmatism about efficient and effective government intervention, depending on the nature of the problem and the solution deemed best (Bovbjerg, Wiener, and Housman 2003).

Because public long-term care financing is redistributive, functional federalism would place it most appropriately within the ambit of the federal government. And the federal government has had a large role in long-term care, beginning with the passage of Social Security in 1935. The federal government retains control of the other redistributive programs for older and disabled individuals: Medicare, Social Security, Supplemental Security Income, and Disability Insurance. However, long-term care has been dominated by legislative or political federalism, shaped by the political incentives that govern legislators' objectives: chiefly their chances of reelection, which are bolstered by opportunities for credit-claiming, blame avoidance, and geographically concentrated benefits with diffuse costs (Peterson 1995). Seen in this theoretical framework, state and federal policymakers have engaged in a complex political competition to claim credit for helping vulnerable elders, fostering a local market-based solution to the demand for care, regulating that market, spreading costs across the breadth of taxpayers, and holding industry to acceptable standards of care – explaining the patchwork quilt of nursing home financing, licensing, and regulation in the United States. Ideology and pragmatism have not yet found equilibrium, and marble cake federalism remains a fairly apt metaphor for the concoction

of roles, responsibilities, and intergovernmental relationships. Little wonder that Vladeck characterizes nursing homes as "an inadvertent byproduct of public policy" (1980, 242).

With the graying of the American population, and the increased demand that will result for long-term care services, pressure is mounting for a more coherent policy response. As of July 2006, there were 37.3 million persons aged 65 and older in the U.S., accounting for 12% of the population. Roughly 4% resided in nursing homes – slightly more than a million and a half individuals. That number includes approximately 1% of persons 65-74 years, 5% of those 74-84, and 8% of those 85 and older. Over the past three decades, those over 85 have steadily accounted for roughly half the total nursing home residents older than 65. The Census Bureau estimates the 65-plus population to double to about 70 million by 2030 – to one in every five Americans – and the 85-plus group to nearly double to about 8.5 million. Exhibit 2, page 31, shows the growth in America's over-65 population from 1900 to 2050, along with support ratios (the number of elders supported by working-age adults).

As fiscal and demographic pressures mount, policymakers can ill afford to continue so unsystematically. From 1970 to 2006, the combined government share of nursing home spending jumped from 43% to 63% of the total. "Over the longer term, the increase in the number of elderly will add considerably to the strain on federal and state budgets as governments struggle to finance increased Medicaid spending. In addition, the strain on state Medicaid budgets may be exacerbated by fluctuations in the business cycle…. State revenues decline during economic downturns, while the needs of the disabled for assistance remain constant" (Walker 2002).

The history of federalism in the realm of health policy generally and nursing home care policy specifically takes the form of cyclical, iterative evolution. According to Nathan (2005), periodic changes are predictable (at least in hindsight): The national government has been the source of social policy initiatives in liberal periods in our history, producing Old-Age Assistance as part of the 1935 Social Security Act and Medicare and Medicaid in 1965. In more conservative periods, however, states have been the source of innovation and expansion in the social sector,

leading to recent expansions in some states in Medicaid eligibility and services, including home- and community-based support for frail elders, as well as some coverage for assisted living facilities as an alternative to nursing home care. As the history that follows shows, however, expansions are often followed by contractions, higher provider payments by steep reductions, and, most troubling, nursing home care scandals by political and public outcry. Making long-term care policy more coherent, given its political federalist history, will be challenging.

PRE- AND EARLY FEDERALISM: OUTDOOR TO INDOOR RELIEF AND GROWING STATE INVOLVEMENT

During the 17th century, all the colonies passed statutes specifying that relief for those impoverished by age or disability was to be organized at the level of the local community and paid for by a local poor tax. Families provided the bulk of care for poor and infirm elders, sometimes with relief in the form of a small pension provided by the community or through tax abatement (Williamson 1984). Those without families were cared for through locally idiosyncratic systems of outdoor – that is, noninstitutional – relief modeled on the English Poor Law of 1601; indoor, or institutional, relief was unknown. Recipients were expected to contribute to their upkeep by working to the limits of their physical ability (Holstein and Cole 1996; Vladeck 1980; Williamson 1984). Local statutes established the right of the resident poor to support, but, using the English Law of Settlement and Removal of 1662 as a guide, strangers were often "warned out," left to wander from town to town or "passed on," in which the constable of one town escorted them to another. Even community residents, if they were judged nondeserving for some reason (e.g., profligacy, laxity, or alcohol use), were not deemed to have a right to care and, in some communities, their care was auctioned off to the lowest bidder, who agreed to provide for them in return for their labor (Williamson 1984; Holstein and Cole 1996).

The pre-federal era of ad hoc local support for those in need due to age or infirmity gave way to a more structured but still sub-national system of poorhouses, almshouses, and county

poor farms in post-Revolutionary America, particularly along the more settled and industrialized Eastern seaboard. In 1796, Thomas Paine, recognizing the link between age and poverty, proposed a national pension plan for all those 50 years and older, to be paid for by an assessment on cultivated land (Paine 1796). The young national government did not take Paine's advice, but states gradually took up the problem of needy elders and others. Beginning in the late 18th century, states gradually assumed growing supervisory role of local functions, followed by actual performance of formerly local services (Derthick 2001), including poor relief.

By 1904, when the Census Bureau enumerated paupers in almshouses, as well as statutes governing their disposition, all states save two (Maryland and Texas) had legislation (and, in the case of Florida, a provision in the state constitution) governing poor relief. Most directed that counties, rather than city or township governments, had responsibility for the poor. About 30% of states made provision for some sort of state oversight of almshouses, though the arrangements varied. Boards generally had no enforcement power (Munson 1930, 1230). Only four states provided any monies for poor support (Bureau of the Census 1906). In sharp contrast to the deplorable conditions of the publicly-funded almshouses and poor farms, during the mid-nineteenth century religious, immigrant, and fraternal organizations started homes to care for their members, predominately elders, including widows and retired clergy and spouses. Over time, these voluntary facilities, which would become the nucleus of the early nursing home industry, added health services to meet the needs of their residents.

From the late 1800s and into the early 20th century, public almshouses became the primary residence of for elders supported by public funds, as these institutions were gradually divested of the diverse populations they had been serving (including blind, cognitively, and physically impaired residents), leaving the elderly in place. Despite attempts to refashion almshouses as old-age homes, however, they continued to be viewed with fear and distaste, and became "a powerful symbol in the struggle for old-age pensions. Hatred for the almshouse created a resistance to any public provision of nursing home care" and led to the government-

subsidized but not government-run nursing home industry (Holstein and Cole 1996, 29; also Fischer 1978; Katz 1996; Lerman 1985).

In addition to poor-relief laws, which were not age-specific, some states attempted to legislate old-age pensions to reduce age-induced pauperism requiring institutional care (e.g., Arizona in 1914, Alaska in 1915, Pennsylvania, Ohio, and Nevada in 1923), but early state legislation was often declared unconstitutional or defeated in referenda.[1] At the federal level, by 1929, forty-eight separate old-age pension bills had been introduced in Congress, and not one had been reported out of committee. However, advocates persisted at the state level, and by 1933, nearly all states had established some form of old-age support, though most pensions were small and qualification requirements strict, including age, means-testing, residency, citizenship, and the absence of familial support; other common requirements were that the applicant could not divest property in order to qualify, was not a vagrant, had not deserted wife or children, and had not been imprisoned. The "greatest single defect" of the state laws was that they made county adoption optional, and, as a result, the system was almost non-existent in many states (Palmer 1932, 408). At the end of 1934, just prior to passage of the Social Security Act, an estimated 236,205 pensioners were covered by state programs; the average monthly pension ranged from 69¢ in North Dakota to $26.08 in Massachusetts (Stevenson 1936).

Despite legislative popularity at the state level and among the general public for outdoor old-age assistance (Stevenson 1936), no policy or political consensus existed regarding the proper locus for long-term relief and care for elders. Common objections among both policymakers and the public were that old-age pensions were un-American (or Socialist or Communist), too

[1] For example, Arizona's law was worded so loosely that the court held it unconstitutional; Arkansas' law was declared unconstitutional because it was deemed to be financed by an unlawful tax. Pennsylvania's was held unlawful on the basis of the state constitution, which prohibited the legislature from making appropriations for charitable, benevolent, or educational purposes. Pennsylvania legislators immediately took steps to amend the state constitution, but the amendment did not pass until 1931, had to be repassed in 1933, and then submitted to a referendum, which was approved. In 1925 the Nevada state legislature passed a bill repealing and replacing the 1923 law. Ohio submitted old-age pensions to a referendum in 1923, but the issue was defeated almost two to one (Ballard and Mayer 1934; Committee on Old Age Security 1935).

expensive, discouraged thrift, promoted pauperism, and encouraged idleness. To provide a reliable national outdoor relief program for elders, political agreement that outdoor relief was legitimate *and* that the federal government could be properly used as a new source of funding was required. Until the Depression, however, "these fundamental assumptions did not command the allegiance of either a political majority or executive leadership" (Lerman 1985).

COOPERATIVE FEDERALISM: SHIFTS IN ROLES AND RESPONSIBILITIES FOR NURSING HOME CARE

During the era of cooperative federalism, dating from approximately 1901 to 1960, the federal government was often portrayed as the states' servant in the kinds of activities that were nationally funded, including social welfare programs – although federal funding typically came with strings attached, and those strings grew both more numerous and tight over the course of this period. The federal intergovernmental grant system, spurred by the Great Depression, expanded and fundamentally changed the power relations between federal and state governments, creating a fiscal federalism that combined federal funding, minimum standards, and oversight with state (and local) program administration and implementation (Wallis 1984; Bovbjerg, Wiener, and Housman 2003). As early as 1940, concerns were raised regarding federal monies' distorting effects on state and local budgets (supporting spending that might not otherwise occur for policy initiatives that might not be priorities) and the shifting emphasis from economic stimulation to support, fostering state dependency on the federal government and diminished standing within the federalist system (Harris 1940).

In January 1935, the president's Committee on Economic Security (CES) reported that the number of needy elders was unknown, but state surveys indicated a severe problem. Surveys in Connecticut (1932), New York (1929) and Wisconsin (1925) found that nearly 50% of their aged population (65 years and older) had less than subsistence income (defined as less than $25 per month). Nearly 34% of the population in Connecticut had no income whatsoever. More than

20% of Wisconsin elders had less than $8 a month. About 700,000 older people were members of families receiving federal emergency relief; 180,000 were receiving state old-age assistance grants; the number in almshouses was unknown.[2]

CES program designers, working with Congress, established a federal program of grants-in-aid to the states for outdoor old-age assistance (OAA) under Title I of the Social Security Act, funded through general revenue derived from federal income tax. Unlike Social Security, OAA was noncontributory and means-tested. To get the legislation passed, the Roosevelt administration and congressional supporters had to agree to power-sharing with the states, removing a provision requiring that state grants would be sufficient "for an acceptable standard of health and decency" and ceding federal control over standards for state personnel administering the benefit, changes that reduced the total cost of the program and reduced the efficiency and quality of services at the state and local level (Stevenson 1936, Derthick 1979).[3]

OAA built on the pension systems already in place in twenty-eight states by providing for a 50% federal matching grant of monthly payments up to $30 per state-certified beneficiary on the condition that recipients could not be residents of almshouses, instituted as a policy mechanism to hasten the demise of despised, publicly supported poorhouses. Two key characteristics of OAA shaped public programs for the elderly in the years following: First, while the law established a federal match ceiling, it did not establish a floor – states were free to spend

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[2] Just as rates of impoverishment were indefinite, rates of disability among the elderly were similarly unknown to old-age security planners. The National Health Survey of 1935-36 was a large-scale undertaking to determine rates of disabling illness, chronic disease, and impairment. Health statisticians reported a steep increase in the amount of disability with advancing age, reflecting primarily an increasing proportion of chronic disease and a strong correlation between age, disability, and receipt of any form of relief (Britten, Collins, and Fitzgerald 1940).

[3] According to Davies and Derthick (1997, 230), "[t]he administration's bill had attempted an extraordinary degree of intrusion into state policy making and finance; the outcome, presumably in reaction to this attempt, was an emphatic assertion of the states' independence" in funding and carrying out OAA, resulting in varied state funding levels and eligibility requirements (discussed in the text). State pension administration was unreliable (Witte, unpublished, circa 1935), and the consequences of slack state-level staffing standards were apparent as early as 1939, when a critical assessment reported that "much remains to be accomplished in the direction of improving organization, working out policies and procedures, and developing merit systems for the selection of qualified personnel on an objective basis" (Roseman 1939, 56).

as little as they desired and were fiscally able, and many spent modestly. State OAA spending varied considerably, depending on state contributions: "To the needy person in Arkansas the Federal government pays three dollars per month, but to the aged recipient in Massachusetts it pays over fourteen dollars" (Harris 1940, 22). OAA thus had the paradoxical effect of increasing interstate inequity. The five states paying average pensions of less than $10 monthly in 1939, all located in the South – Arkansas, Alabama, Georgia, Mississippi, and South Carolina – received a total of less than $5 million in federal matching funds, but Massachusetts, Colorado, and California, which paid about $25 monthly per beneficiary, received nearly $39 million to cover roughly equivalent populations.[4] Second, eligibility determination was left entirely to the states, subject to minimal federal standards, including age (65 years or older), residency (no more than five years in-state residency could be required), and U.S. citizenship. State eligibility rules, like state funding, varied. Most states required that the recipient not be gainfully employed, but limitations on assets and property were variable, as were requirements for familial support, though most states required family members to provide support, if they could.[5]

After passage of the Social Security Act, some states moved aggressively to close almshouses, but most did not – one reason being the frail and infirm elderly residing in them who could not be removed. Pensions were not a substitute for indoor relief for those elders who were

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[4] At the time Social Security was passed, 31 states had established old-age pension programs, none of which was in the South. Southern states initially balked on OAA not only because of concerns about fiscal capacity but because race-based discrimination was prohibited, but provisions that kept eligibility decisions in local hands served to obviate that provision in practice (Alston and Ferrie 2005).

[5] According to the final CES staff report, in many respects, the various state laws were similar. "With the exception of Arizona and Hawaii, they all specify that pensions must not be paid to old people who have children or relatives able to support them." The great majority of state laws included income and property qualifications: "The property limit is $3000 in most of the laws, while the income limit is $300 to $365 a year. …A good many of the laws include the provision that the transfer to the pension authority of any property the applicant may possess, may be demanded before a pension is paid. In most laws there is a provision that a pension must be denied to persons who have deprived themselves of property in order to qualify for assistance. Almost all of the laws provide that the amount of pensions paid shall be a lien on the estate of the pensioner and shall be collected upon his death or the death of the last survivor of a married couple" (CES c. 1935).

infirm as well as poor. For those not already consigned to almshouses, however, public facilities were supplanted by proprietary homes for the elderly. OAA gave recipients the purchasing power to obtain private care provided by "mom-and-pop" operators who boarded elders in their homes as well as by existing nonprofit, voluntary homes. But even at this very early stage, there was general dissatisfaction with private nursing homes. Commercial insurers did not offer coverage for chronic illness, the reason many individuals required institutional care (Vladeck 1980; Holstein and Cole 1996). Public payments were insufficient to maintain quality care and ensure an adequate return on investment for owners; the chronically ill poor who needed care were often at the bottom of the list for admission – then as now, nursing homes preferred private-pay patients because they paid more on average (Raffel, Raffel, and Barsukiewicz 2002). "Facilities were often dilapidated and frequently unsafe; medical and nursing care was minimal; reports of exploitation and abuse of residents quickly circulated. Calls for public licensing and inspection soon arose" (Vladeck 1980, 38). Rather than pursue that policy, however, Congress acted to increase the supply of hospital (and, later, nursing home) beds on the assumption that increased market competition would increase quality, passing the Hospital Survey and Construction Act, commonly known as Hill-Burton, in 1946.[6] (Note: OAA, Hill-Burton, and other federal legislative milestones in nursing home care are summarized in Table 1, pages 32-33.)

Over a quarter of a century, Hill-Burton provided more than $2.5 billion to help support construction of roughly 6,000 hospitals with more than 350,000 beds nationwide.[7] The legislation

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[6] According to Clark et al. (1980, 534), Hill-Burton was "designed as a market intervention strategy to overcome, through the use of public money and authority, the competitive disadvantage suffered by poorer and less urban areas" in attracting both physicians and hospitals.

[7] Initially, the law required federal funds to be matched with state and local monies at a rate of 1:2, a provision poorer localities and states couldn't meet. In 1949, the federal share was increased to a maximum of 67%. State allocations were made by a formula that was determined by population, weighted by relative state wealth, and relative need for hospital beds (Brinker and Walker 1962). The federal funds had strings attached: Facilities were not allowed to discriminate based on race, color, national origin, or creed – except for the proviso that allowed for discrimination so long as separate, equal facilities were located in the same area. (The U.S. Supreme Court struck this provision in 1963.) Facilities receiving funding were also required to provide a "reasonable volume" (undefined) of free care each year. Hospitals were initially

was amended in 1954 to provide grants to public and nonprofit entities to construct nursing homes, rehabilitation facilities, and outpatient departments of hospitals. The nursing home portion of the amendment was a function of two policy pressures, quality and supply of care. In 1953, long-term care in ten states was judged seriously inadequate by a combined assessment of the U.S. Public Health Service (PHS), which administered Hill-Burton, and the Commission on Chronic Illness, established in 1949 by the American Hospital, Medical, Public Health, and Public Welfare Associations to assess chronic disease in the U.S. The 1954 amendments also required the PHS to conduct a nationwide survey of nursing homes, which was provisionally completed in October. The inventory revealed wide variations in the number and types of facilities and beds across states. The number of skilled nursing care facilities – those best staffed and equipped to address medically vulnerable patients' needs – varied most and was strongly positively associated with state per capita income and over-65 population, and negatively correlated with rurality (Solon and Baney 1954).

Congress appropriated $10 million funded from general revenue for construction of nonprofit and other nonproprietary nursing homes, but conditioned subsidies on the requirement that nursing homes be operated in conjunction with a hospital (private or public), thus transforming nursing homes from primarily residential, custodial facilities into medical facilities. In doing so, nursing homes moved from being a policy component of the social welfare system to a component of national health system (Vladeck 1980). From an economic perspective, nursing home care shifted from being a social good to a consumable good, like other health care. Two additional federal programs provided loans (not grants) from general revenues. The Small Business Administration made direct or participatory loans to proprietary nursing homes and the

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required to provide uncompensated care for twenty years after receiving funding. Federal oversight of this element of the legislation was, for many years, inadequate, until class action lawsuits on the part of needy clients forced the government to commit the resources necessary to determine compliance. States and localities were also required to prove the economic viability of the facility in question, effectively excluding the poorest and neediest municipalities from the program – though the obvious equity questions raised by this proviso were not invoked for decades.

Federal Housing Administration offered loan guarantees of up to 90% of construction costs to nursing home developers. Recipients were not required to be affiliated with any hospital. These loans made nursing homes a more attractive business venture, and new private-sector entrepreneurs emerged, though hoped-for improvements in quality of care did not (Holstein and Cole 1996). The influx of for-profit firms fundamentally altered the form and ethos of nursing homes from small, "mom-and-pop" residences and voluntary facilities, and it changed the politics of long-term care, as the new purveyors began to influence finance and regulation policy.

With an increasing supply of nursing home beds, Congress acted to support demand by expanding Social Security. Amendments in 1950 included three provisions directly related to nursing homes: Congress lifted the ban on payments to residents of public long-term care institutions; authorized federal matching for direct payments by states and localities to vendors (not beneficiaries), a policy already in use in several states, in instances where beneficiaries faced total impoverishment as a result of medical costs; and, as a condition of participation, required states making payments to either residents of public institutions or to vendors to establish licensing programs for nursing homes – but did not specify what the standards should be or how they would be enforced. The movement away from individual benefits to payments to vendors is a significant policy shift, and vendor payments increased rapidly, from $100.7 million in federal fiscal year (FY) 1951 to $1.7 billion in FY1966, just after the passage of Medicaid (Merriam and Skolnik 1968). Amendments in 1956 further established separate matching for vendor payments. States still had to match these dollars, which kept the overall program small, though a few wealthier states, such as New York and Massachusetts, substantially expanded vendor payments for nursing home care (Vladeck 1980). The vendor payment policy had a political consequence: Beneficiaries were essentially removed as purchasers, and the locus of negotiation over payment rates (and regulation) shifted to facility owners and states, resulting in strong lobbying by the nursing home industry in most states and the relative powerlessness of individual consumers. Over time, the nursing home industry has pressured state and federal policymakers to increase

reimbursement rates (and therefore their profits) and to minimize regulation. Militating against looser regulation, however, is the repeated cycle of scandals about care quality.

Various studies during the 1950s found that somewhere between 30% and 60% of residents in private nursing homes were receiving public assistance. A 1957 study of expenditures found that 53% of costs for nursing and convalescent homes were borne by federal, state, and local governments, and government attention began to focus on quality received for those dollars. The federal Commission on Chronic Illness called attention to quality concerns; states also reported problems, which came to light as a result of federal licensing stipulations. In response to growing public concern, the U.S. Senate established a special Subcommittee on Problems of the Aged and Aging (under the Labor and Public Welfare Committee) in 1959. After examining the issue, the subcommittee concluded that because demand outstripped nursing home supply, many states had not fully enforced existing regulations, reporting that, if they did so, the majority of homes would close. Remedies for noncompliant facilities were quite limited; closure was often the only sanction available to states for facilities with serious deficiencies. Two years later the Senate created the Special Committee on Aging and began to hold hearings on nursing home problems in 1963, chaired by Senator Frank Moss. On the eve of the passage of Medicare and Medicaid, the Moss Committee hearings documented five chief reasons for state-level variations in nursing home quality: 1) States had few, if any, weapons other than the threat of license revocation to force homes into compliance; 2) As a result of the availability of few sanctions, enforcement often meant facility closure. Beds were already in short supply and many state policymakers felt that patients in closed facilities would have nowhere to go; 3) License revocation required a lengthy administrative and legal process when owners appealed; 4) Even if those processes were satisfied, judges were often reluctant to uphold home closure if the owner claimed deficiencies were being corrected; and 5) Nursing home standards and inspections focused on the physical plant rather than quality of care. These barriers were in the minds of the

designers of Medicare and Medicaid, who built in stronger regulatory mechanisms as part of the price of federal funding.

CREATIVE FEDERALISM: MEDICARE AND MEDICAID AND NURSING HOME CARE

As an entering wedge for Medicare, the Kerr-Mills bill of 1960 established Medical Assistance for the Aged (MAA), an expansion of the vendor payment program under OAA, with two important exceptions: States were permitted to define means-tested "medical indigency" separately from the need for OAA income assistance, so that they could pay for medical services for those not poor enough to meet OAA eligibility requirements. Open-ended federal matching ranged from 50% to 80% of a state's contribution, in inverse proportion to the state's fiscal capacity, based on per capita income (Corning 1969, Fine 1998, Vladeck 1980). In 1962, Kerr-Mills was extended to cover medically indigent persons over the age of 21 who were totally and permanently disabled or blind and not already receiving SSA benefits, the entering wedge for Medicaid.

In the political rhetoric around Kerr-Mills, the policy expectation was that it would permit states to establish far more comprehensive health insurance programs for needy elders, without burdening taxpayers with insurance for the nonindigent. Although all but nine states adopted MAA programs, some did so only on paper. For example, neither Mississippi nor Georgia ever appropriated any funding for their programs. Three years into the program, five states – very wealthy states, comparatively: New York, California, Massachusetts, Minnesota, and Pennsylvania – received a staggering 90% of federal MAA funds, even though they had a combined proportion of just 32% of the nation's elderly and were all in the lowest category of federal matching percentage (Marmor 2000).

Notwithstanding its lack of effect on health care overall, Kerr-Mills had substantial impact on nursing homes. Vendor payments to nursing homes increased nearly tenfold in the five

years prior to the passage of Medicare and Medicaid, to roughly $450 million, or roughly a third of total program expenditures. Public funds were paying a large, and rapidly increasing, share of the cost of the burgeoning proprietary nursing home industry. With this in mind, Medicare designers deliberately excluded long-term nursing home coverage because they were afraid it would destroy the budget and political support for health insurance for seniors. At the time of enactment, Medicare included post-hospital extended care of 100 days, a provision framed in the medical, rehabilitative model of curative care, not long-term care for chronic conditions. The structure of the benefits, providing acute hospital care and periodic physician care, did not address many elders' health needs, particularly those who were chronically ill (Marmor 2000). The reason a short-term nursing home benefit was included at all was budgetary; program designers reckoned that a nursing home day cost far less than a hospital day and that care for patients too ill to be discharged to home but not in need of acute care would be less expensive in nursing homes.

Inconsistently, the eleventh-hour Medicaid legislation (an expansion of the 1962 Kerr-Mills amendments) did include long-term care for those receiving any kind of cash welfare benefits from federal programs and/or meeting state-established criteria of medical indigency (the backdoor entryway for elders into nursing home care). Medicaid mandated five basic medical services, including "skilled nursing home" care. It increased incentives for state participation and retained the states' administrative control over the program. Like OAA and MAA previously, Medicaid was optional; states could participate or not, but if they chose to do so, they had to operate within federal guidelines governing client eligibility, provider certification, and payment rates. Most states were quick to access the new source of federal support. The program was uncapped – states were permitted to spend as much as they chose or were fiscally able, matched by federal funds. The Federal Medical Assistance Percentage (FMAP), used in determining the amount of federal matching funds for state expenditures for assistance payments for certain social services and medical and medical insurance expenditures, pays a larger portion of Medicaid costs

in states with lower per capita income relative to the national average (and a smaller portion in states with relatively higher per capita incomes); it has a floor federal matching rate of 50% and a ceiling of 83%.

The evolution of Medicaid policies in the intervening 40-plus years can be seen as a series of technical decisions about eligibility, services, reimbursement, and financing structures. But the heterogeneity of interests in the Medicaid program – elders, people with disabilities, children in low-income families, impoverished working-aged adults, and varied providers of care – create an unstable policy environment. These groups differ politically, socially, medically, and financially (Kronebusch 1997). The spend-down provision, held over from Kerr-Mills, is an important element of Medicaid politics, because it broadened the program's constituency to include middle-class elders with high medical costs (Grogan and Patashnik 2003). Medicaid policy, including nursing home policy, is further affected by state and federal policymakers' political ideology and concerns for reelection (Grogan 1994). Decisions are not merely technical; they rest on deeply held, often divergent political values.

From the beginning, Medicare and Medicaid presented complex problems associated with nursing home regulation, licensing, quality, and poor performance. These problems stemmed in no small part from early implementation decisions at the Health, Education and Welfare (HEW) department. Nursing homes were essentially unregulated at the federal level and weakly regulated in most states prior to Medicare and Medicaid, and because so few facilities met Medicare's statutory requirement for providing medically intensive post-hospital rehabilitative services (as opposed to less-intensive custodial services), HEW staff decided to create a certification category termed "substantial compliance." These institutions would be certified for Medicare participation if they approached statutory requirements and demonstrated the intent to improve through a plan of correction. It was hoped that, once facilities were part of the system and receiving federal payments, quality would improve and they would be brought into statutory compliance. Because the new federal programs offered substantial funding, states agreed to

minimal federal standards for nursing homes, which previously hadn't existed. The federal regulations were lenient, and states and operators soon learned that providing a written "plan of correction" sufficed to address most violations (Fleming, Evans, and Chutka 2003).

Inspecting facilities to determine whether they were eligible for participation in Medicare and Medicaid was a state responsibility; HEW provided central supervision and issued formal certification based on state recommendations. Six months after the effective date for Medicare's extended care benefit (January 1, 1967), there were just 740 facilities nationwide that met the statutory requirements for care, but 3,200 that were in substantial compliance. With the extra supply, demand skyrocketed, as did costs. The chief actuary of the Social Security Administration had estimated that first-year costs for extended care would range from $25 million to $50 million. Actual costs approached $275 million. Part of the discrepancy was increased demand; part was reasonable cost reimbursement. Average daily cost for care was more than 50% higher than projected – in no small part because providers were reimbursed for mortgage interest, depreciation, self-reported costs of care, and an added profit margin (Fleming, Evans, and Chutka 2003). The reimbursement for capital costs was a bonanza for the real estate investors who had been attracted to the industry and resulted in a flurry of sales, resales, and lease-back arrangements among related parties that dramatically increased profits for owners and costs for Medicare and Medicaid. In addition, contrary to the Medicare framers' operating assumption, there were no cost-savings from substituting nursing home days for hospital days. Instead, for each hospital day saved, several nursing home days were used, and a net increase in costs resulted (Hellinger 1977). The government's share of Medicaid-covered nursing home costs also spiraled: As early as 1970, the combined state-federal share was 43% of total nursing home expenditures.

Senator Moss spearheaded 1967 amendments to Social Security that tightened federal Medicaid standards for skilled nursing homes, addressing a gamut of concerns from recordkeeping to hospital transfers for acute medical services to staffing and ownership disclosure. The federal health, education, and welfare department was in the same bind as before:

If it devised regulations that were strict enough to satisfy those advocating for nursing home improvement, most facilities would be unable to meet them. “There would then be considerable pressure on government, at both state and local levels, to increase reimbursement in order to provide funds for improvement,” but there was no way to ensure increased funds would actually be used for improved services “and, in the meantime, many government beneficiaries would end up on the street.” Alternatively, the government could issue weaker regulations, “which would mean that government would be abetting the continued maltreatment of helpless older citizens, and would be paying for that maltreatment” (Vladeck 1980, 60-61). Two years elapsed before final regulations were issued, and they were not as stringent as the amendments specified.

NEW FEDERALISM: THE REGULATORY PENDULUM

A series of scandals, however, forced the federal government to act – a cycle that would be repeated nearly every decade since. In the early 1970s, following a series of scandals about poor quality, including deadly nursing home fires, food poisonings, and Congressman David Pryor’s reports on the House floor of his experiences working undercover as a nursing home orderly, President Nixon convened a high-profile White House Conference on Aging and ordered the creation of the Office of Nursing Home Affairs at HEW, responsible for coordinating efforts by different department agencies and upgrading nursing home standards nationwide. The president issued an eight-point nursing home improvement program, but the issue was largely politically symbolic, and little substantive improvement was realized (Vladeck 1980). By 1980, combined federal-state expenditures on nursing home care were $11 billion, or 60% of total spending. The incoming Reagan administration strongly promoted program decentralization, with the notable exception being Medicaid, which the administration proposed taking over, in line with its operation of Medicare. Paradoxically, in 1982, the administration also proposed deregulating the nursing home industry in response to industry complaints about stringency, though the proposal was withdrawn in the face of public, media, and political outcry. The proposal to

federalize Medicaid was strongly opposed by the states, for which it would have meant a significant loss of revenue, and it was not enacted. To curb spending, Congress temporarily reduced the FMAP, but did not limit rates of growth (Bovbjerg, Wiener, and Housman 2003).

In contrast to the general trend of cutting social welfare spending, as part of the Omnibus Reconciliation Act of 1980, the Boren amendment to the Social Security Act required that Medicaid nursing home rates be "reasonable and adequate to meet costs incurred by efficiently and economically operated facilities in order to provide care and services in conformity with applicable state and federal laws, regulations, and quality and safety standards." State Medicaid officials overwhelmingly came to oppose the amendment as impossible to operationalize, believing that they were being forced by the courts to spend too much on nursing homes at the expense of other services (Wiener and Stevenson 1998). Protracted battles over certification standards resulted in the Health Care Financing Administration (HCFA) abandoning the effort and instead working to change the procedures for applying existing standards, which also failed. At an impasse, in the summer of 1983, Congress and HCFA agreed to a moratorium on all regulatory changes and mandated a study of nursing home quality and regulation by the Institute of Medicine (IOM). *Improving the Quality of Care in Nursing Homes* was a rebuke to nursing home deregulation and called for strengthening federal regulatory standards and processes. The IOM concluded, "There is no American nursing home regulatory system"; instead, there are substantially differing regulatory systems in 50 states and the District of Columbia (IOM 1986, 12). The authors noted that, although the federal government prescribes detailed standards for certified nursing homes, states license (according to widely varying standards), inspect (haphazardly), and enforce (also with wide variance), with the consequence being that substandard nursing homes were allowed to operate, and residents frequently receive inadequate and sometimes shockingly deficient care.

Congress responded by including reforms in the Omnibus Budget Reconciliation Act (OBRA 1987), which included a requirement for federal regulations strengthening residents'

rights, specific service requirements (nursing, medical, and psychosocial) to help residents attain and maintain the highest possible level of mental and physical functioning and comprehensive patient assessments for care planning (Raffel, Raffel, and Barsukiewicz 2002). The OBRA reforms also included a new resident-focused and outcome-oriented survey process, with mandated unannounced inspections, and a range of enforcement remedies intended to address deficiencies.

In the 1990s, a new category of sub-acute care facility emerged to provide post-hospital care of greater intensity than intermediate care facilities (themselves a creation of the 1971 Miller Amendment to Medicaid). The Balanced Budget Act of 1997, following a predictable increase in spending, cut Medicaid reimbursements, and repealed the Boren amendment, giving states far greater freedom in setting nursing home payment rates, which they immediately lowered, triggering the bankruptcy and reorganization of several large, multistate nursing home chains.[8] That same year, scandal again erupted when *Time* magazine reported that California nursing home residents were being denied food and water and not being provided needed medical care. The Senate Special Committee on Aging held hearings on nursing homes; President Clinton, like President Nixon a quarter of a century previously, ordered a crackdown on nursing homes that abused patients or repeatedly violated federal standards. The president went so far as to order state officials to inspect nursing homes at night and on weekends "so there is no time to hide neglect and abuse" and directed federal officials to focus enforcement efforts on nursing home chains with a history of poor performance (Pear 1998). In 2001, a second IOM report, *Improving the Quality of Long-Term Care*, called for more data, more penalties, tougher standards and

[8] By 2000, the Clinton Administration estimated that 1,600 nursing homes were operating under Chapter 11 bankruptcy protection, most of them part of chains that had aggressively acquired new facilities and expanded rapidly for several years prior to the new enforcement and payment structures. These facilities were heavily leveraged, having paid top dollar for acquisitions and allowing debt-to-equity ratios to spiral precipitously. More for-profit nursing home operations were operating under Chapter 11 bankruptcy protection than were non-profits, consistent with the fact that approximately 65% of nursing homes were owned by for-profit companies nationally (Pelovitz 2000). As a legal and fiscal strategy, bankruptcy and reorganization allowed many of these firms to avoid paying fines to the government.

enforcement, and noted that low Medicaid reimbursement was (still) a potential source of quality problems (IOM 2001; Fleming et al. 2003). More recently, in response to continuing concerns about quality of care, the Centers for Medicare and Medicare Services (CMS) launched "Nursing Home Compare," an online tool "to provide detailed information about the past performance of every Medicare and Medicaid certified nursing home in the country and another rating tool that gives consumers "a detailed checklist for rating different nursing homes visited based upon Quality of Life, Quality of Care, Nutrition and Hydration, and Safety" (CMS 2008).

FROM POORHOUSE TO WAREHOUSE

Despite the repetitious cycle of scandal, political attention, new or altered regulations, and changes in financing, the essential nature of nursing home care has not changed much. The 2001 IOM report characterized the quality of care in nursing homes as "a major concern for local, state, and national policy makers" (IOM 2001, 21). Regulation continues to be highly fragmented; federal certification and state licensure systems overlap, resulting in duplication, conflicts, and confusion (Walshe 2001).

Long-term care coverage is inconsistent: Medicaid is "far less uniform than Medicare, and the differences in coverage are particularly sharp" (Coughlin et al. 1994, 79). Spending for Medicaid-covered long-term care varies widely, from $709 per capita in New York to $147 per capita in California. In theory, strict federal guidelines govern financial eligibility for Medicaid, but, in practice, states have great flexibility in determining how income and assets are counted, and they control functional standards governing disability eligibility for optional long-term care, nursing home care, and services offered under waivers (Wiener and Tilly 2003).[9] Services also

[9] Financial qualifications for Medicaid are often tied to the Supplemental Security Income (SSI) program ($623 per month in 2007), but states can and do set higher limits. In addition, to qualify elders must have few assets, typically $2,000 for an individual and $3,000 for a couple in most states. Those who become impoverished as a consequence of disabling injury or illness (the "medically needy") can spend down to state eligibility levels. In 38 states, this is set at income of up to 300% of SSI, or $1,869 per month in 2007. However, individuals who qualify for nursing

vary considerably. The system of Medicaid waivers, which allows states enormous flexibility in program design and increases fiscal control, has exacerbated variations in access and services. Some waivers permit beneficiaries to select and manage home-based caregivers and to secure care in assisted living facilities (Holahan, Weil, and Wiener 2003). Recent changes in the long-term care market raise concerns about who is being cared for in nursing homes. With the expansion in assisted living, mean nursing home occupancy rates have fallen and the share of residents who rely on Medicaid has concentrated (Grabowski and Stevenson 2008).

There continue to be wide disparities in nursing home deficiency rates across states. The federal government sets quality and safety regulations, and states determine compliance through survey and certification programs. But both the federal government and states have been criticized for ongoing quality problems and laxity in regulatory oversight (Wiener and Tilly 2003). A recent analysis found that disparate payment rates for public- and private-pay patients, as well as long-standing differences in the populations of for-profit and not-for-profit facilities, along with residential segregation in municipal areas, combine to result in a high degree of racial segregation as well as racial disparities in nursing home quality of care. Black clients are much more likely to be in nursing homes with serious deficiencies, lower staffing ratios, and greater financial vulnerability – the net result being separate and unequal care (Smith et al. 2007). Troubling racial disparities in care range from appropriate pharmacologic management and physical therapy to higher rates of hospitalization from nursing homes for black residents (Gruneir et al. 2007).

Nursing home care is expensive. In 2007, the average annual cost for a private room in a Medicare-certified nursing home was $74,806 ($204.95/day); a semi-private (double occupancy) room averaged $65,985 annually ($180.76/day). These rates were 5.5% higher than the previous year (Genworth Financial 2007). Although governments are carrying a large share of the financial

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home care through Medicaid are subject to a five-year review of their finances, intended to prevent people from divesting themselves of assets in order to qualify for Medicaid assistance (Kaiser Commission on Medicaid and the Uninsured 2007).

burden, the average family has little security from financial risk, given that more than a quarter of the annual costs of long-term care are now paid for out of pocket. Reinhardt, most prominently among health economists, has decried "pauperised Medicare beneficiaries" required to spend down sufficiently to be eligible for means-tested Medicaid-covered long-term care (Reinhardt 2005, 87). Their forced impecuniosity is exacerbated by the stigma, emotional pain, and administrative burdens they endure in applying for what is viewed as welfare coverage (Oberlander 2003). By these critical criteria, more than two centuries of public policy haven't moved us much beyond the almshouse.

WHY NOT MEDICARE?

Expenditures for nursing home care in 2006 were $125 million, about 6% of total health expenditures. Public spending for nursing home care was $78 million; the federal/state-local split was $69 million/$31 million. Private spending was $47 million (38% of overall spending), with nearly $33 million coming out of pocket. Only a little over $9 million of nursing home expenditures (7% of the total) was covered by private insurance. State governments are currently encouraging elders to purchase long-term care insurance on the private market in an attempt to reduce the public financial burden now and going forward (Levitz and Greene 2008). But private long-term care insurance covers a very small portion of those at risk for catastrophic financial losses; the market is not predicted to grow and likely will never play more than a small role in total nursing home care spending (Wiener, Illston, and Hanley 1994). Only about 10% of the elderly have private long-term care insurance, and private insurance currently pays for less than 10% of nursing home expenditures.

As a policy fix, experts have advocated tax incentives for individuals to purchase long-term care insurance (The Commonwealth Fund 2005, 2008). In the current environment, however, Medicaid coverage crowds out private long-term care insurance (Brown and Finkelstein 2004b), insurance costs are prohibitive for seniors, and coverage often does not adjust for medical

care cost inflation (Oberlander 2003; also Brown and Finkelstein 2004a). Limited insurance coverage for long-term care expenditures has important implications for elders' welfare, and that will only become more pronounced as the population continues to age and as medical care costs continue to rise. Long-term care spending for elders is estimated to increase to $379 billion in 2050 (Walker 2002).

Why hasn't Medicare expanded to cover long-term care, when elders are its chief consumers? According to Oberlander, the Medicare legislative framers' concern about costs spiraling out of control has been an ongoing, politically limiting factor. Also, many elders and younger workers paying into the system mistakenly think Medicare does cover long-term care, which undercuts the ability of advocacy groups to mobilize them for benefits expansion. There have been calls to finance a long-term benefit through a premium (The Commonwealth Fund 2005, 2008), but beneficiaries (and, thus, many politicians) have strenuously rejected attempts to self-finance expansions through either means-testing or greater cost-sharing (e.g., the 1988 Medicare Catastrophic Coverage Act's passage and subsequent repeal). Most importantly, however, Medicaid, even with its imperfections, has reduced pressure for expansion in Medicare.

At the state level, political, institutional, logistical, and philosophical obstacles impede long-term care policy change – and all, at bottom, are financial (Kane, Kane, and Ladd 1998). Medicaid has been steadily growing as a share of state spending, and long-term care accounts for a significant portion – more than $24 billion in 2006. The nursing home industry has become a powerful political influence in each state; other providers as well as consumers influence legislators and governors. States operate under the imperative of maximizing federal money in the face of limited state funding, both for service payment as well as capacity for program oversight and management. State efforts to shift nursing home costs to the federal government[10] are part of

[10] States use several mechanisms to widen that separation, shifting costs onto the federal side of the ledger. Medicare is the first payer of services covered by both that program and Medicaid, and states strive to ensure that Medicare is billed first. Additionally, many states have shifted state-funded home care programs into Medicaid, thus obtaining a federal match for at least half of the

a larger pattern of tension between state and federal governments over Medicaid (Coughlin et al. 1994), which also contributes significantly to policy confusion.

The longstanding debate over the proper locus of finance, design, and administration of long-term care programs remains. Federalizing long-term care might promote cross-program coordination of beneficiary services and better care coordination between acute and long-term or post-acute facilities, and the federal government would likely be better able to finance the predicted growth in service need. Federalizing nursing home care would arguably reduce interstate variations in access and care. But there remains the notion that state and local governments are closer to the people, and thus better suited to design, deliver, oversee, and regulate programs to best meet local needs and preferences (Wiener and Tilly 2003).

According to Grogan and Patashnik (2003, 66), policymakers are further constrained by a normative and practical dilemma: the real need for nursing home care encourages politicians to expand access, but providing care – especially through Medicaid, a program designed for the poor – to middle class elders is difficult to justify. "The practical result … is to produce a vacillating political dynamic, prone to controversy and uncertainty."

Opinion strongly differs regarding the relative strength of national versus state governments in the recent era of federalism, and the structure of federal-state relationships (Krane 2007). Within the realm of social policy, although "states have recaptured a great deal of policy

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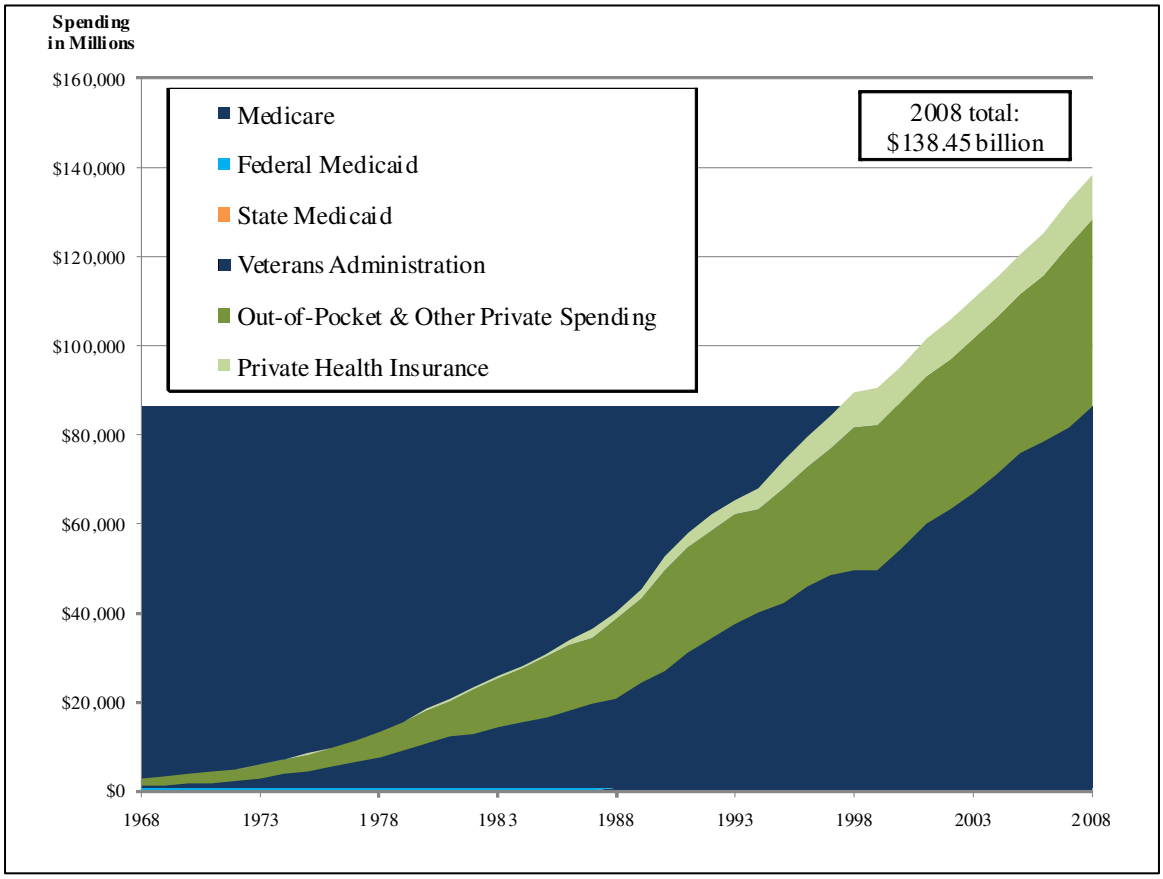
costs. Some states use county-run nursing homes as a way to increase federal cost sharing, though the upper payment limit (UPL) rule. Federal law requires that Medicaid payments cannot be higher than what Medicare would have paid for the same service (the UPL). Until 2001, federal regulations allowed states to pay much higher rates at public facilities, and states exploited this loophole to make the higher UPL payment to publicly run nursing homes, which then returned much if not all the payment to the state, which at the same time collected the federal share. "So, at the end of the transaction, the federal government [had] made additional nursing home payments without any real state spending and usually with very little of the UPL funds being kept by nursing homes" (Wiener and Tilly 2003, 257). Most of these funds were recycled in state Medicaid programs, spent for other services, thereby earning yet another federal match (a so-called match-on-match payment). In 2000, 28 states had one or more UPL programs, and combined federal-state spending reached an estimated $10 billion nationwide (Coughlin and Zuckerman 2003). That same year, Congress passed the Benefits Improvement and Protection Act, which phases out UPL schemes, in order to limit federal liability.

authority in recent years, it is unlikely the federal role will be significantly diminished in the near future" (Arsneault 2000, 50; Peterson 1995, Derthick 1996, Posner and Wrightson 1996). The federal government has influenced state health policy through financing, regulation, and oversight. The federal-state relationship has also affected policy diffusion and program innovation, with bidirectional adoptions of change (Arsneault 2000). In the realm of nursing home policy, the middle-tier is clearly not dominated by the federal government, and "the persistence of state discretion," in Derthick's words (1987, 68), in both tenacity and tenure is clear. States establish their own Medicaid eligibility rules, payment policies, and nursing home payment rates, and regulate the number of beds, limiting supply in order to limit Medicaid budgets. Medicaid waivers and demonstration programs further extend state discretion.

With neither government tier dominant, federalism's complexities offer multiple points of access for influencing public decision-making on long-term care, benefiting a range of actors and stakeholders (Elazar 1972). Shared responsibility increases opportunities for politicians to claim credit (and avoid blame); it allows the national government to expand or launch programs without increasing its workforce, while permitting states to offer otherwise unaffordable services and to replace local tax dollars with federal funds. All in all, stasis is a win-win for governments (Anton 1997). Collectively, these constraints impede long-term care policy change. They impose on state and federal policymakers the need to supervise an industry within a financial system limited by local tax payers and strained by the needs of elders as well as poor and near-poor families and lead to policy indecision and inaction. Fiscal and demographic pressures may combine to break the policy logjam.

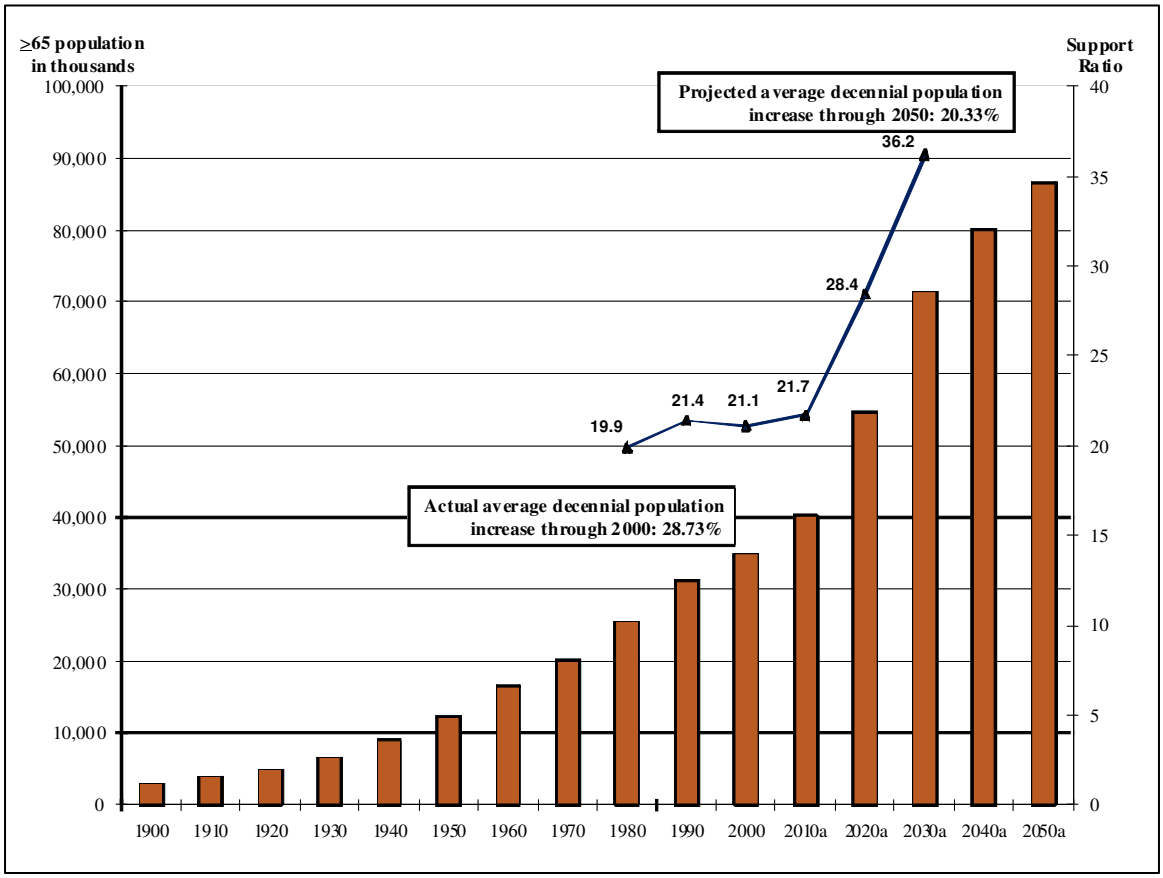
EXHIBITS

Exhibit 1: Nursing Home Expenditures by Payer (in Millions of Dollars), 1968-2008



Source: Centers for Medicare and Medicaid Services, National Health Expenditures Accounts, 1960-2008. http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage.

Exhibit 2: Growth in the Over-65 Population 1900-2050, with Support Ratios



Note: a denotes projections.

Sources: U.S. Census Bureau. 2005. No. HS-3: Population by Age: 1900-2002. http://www.census.gov/statab/hist/02HS0003.xls. U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin, Table 2a. Projected Population of the United States, by Age and Sex: 2000 to 2050. http://www.census.gov/ipc/www/usinterimproj/; 65+ in the United States.

Table 1: Federal Legislative Milestones in Nursing Home Care

Federal Legislative Milestones in Nursing Home Care		
Year	**Legislation**	**Major Policy Components**
1935	Social Security	Provided 50% matching grants to states for Old Age Assistance; persons in public institutions excluded, thus creating private nursing homes
1939	Social Security Amendments	Required states to consider other income and resources of OAA applicants
1946	The Hospital Survey and Construction Act, commonly known as Hill-Burton	Construction grants for public and nonprofit nursing homes
1950	Social Security Amendments	Permitted federal matching of vendor medical payments and removed the ban on payments to public long-term care facilities Required state licensure programs for nursing homes
1954	Hill-Burton Amendments	Construction grants to public and nonprofit providers for long-term care facilities built in conjunction with hospitals to raise the quality of care. Physical construction of nursing homes modeled on hospitals; moved nursing homes from the welfare system to the health care system
1959	Small Business Administration and Federal Housing Authority authorizations and appropriations	Funds for proprietary facility construction (SBA) and public (FHA)
1960	Kerr-Mills	Expanded to cover medically indigent elders
1965	Medicare and Medicaid	Provided for long-term institutional care for impoverished individuals in Medicaid; provided short-term care for seniors through Medicare
1968	Moss Amendments	Improve nursing home care and raise institutional standards
1971	The Miller Amendment	Established “intermediate-care facilities” eligible for federal reimbursement that did not require the same amount of skilled nursing or resources as nursing homes, thereby costing the government less
1972	Social Security Amendments	Reforms for nursing homes, including a new policy that Medicaid would reimburse nursing homes on a "reasonable cost-related basis," with the hope that the facilities would provide better care. Previously, most states used relatively arbitrary fee schedules.
1980	Civil Rights of Institutionalized Persons Act 42 USC § 1997a et seq.	Authorizes the Attorney General to conduct investigations and litigation relating to conditions of confinement in state or locally operated institutions (does not cover private facilities).

Year	Legislation	Major Policy Components
1981	The Boren Amendment	Required states to ensure "reasonable and adequate" provider reimbursement rates.
1987	Omnibus Budget Reconciliation Act (OBRA), also known as the Nursing Home Reform Act	To participate in the Medicare and Medicaid programs, nursing homes must be in compliance with the federal requirements for long term care facilities as prescribed in the U.S. Code of Federal Regulations: 42 CFR Part 483. These regulations cover staffing levels, prescribe patient care standards, require record-keeping and efficient operation. Also compels nursing home certification that requires states to conduct unannounced surveys, including resident interviews, at irregular intervals at least once every 15 months. The federal government did not issue regulations to implement the new survey process until 1995.
1997	The Balanced Budget Act (BBA)	Cut federal reimbursement rates to nursing homes; repealed the Boren Amendment
1997	Health Insurance Portability and Accountability Act (HIPAA)	Set standards for long-term care insurance plans to be considered federally qualified: established provider rules guaranteeing renewability, consumer protections, defining scope of coverage, and setting criteria individuals must meet before benefits can be paid. Also established the tax treatment of employer and employee expenditures on federally qualified plan premiums.

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PUBLIC HEALTH FUNDING FORMULAS: POLICY, POLITICAL, AND PRACTICE CONSIDERATIONS IN THE U.S. FEDERALIST SYSTEM

ABSTRACT

In the United States, fiscal and functional federalism strongly shape public health policy and programs. As a tool of fiscal federalism, formulas for funding grant-in-aid allocations are used widely in federal health and social welfare programs, but are generally limited in federal public health programs. Federalism has consequential implications for public health practice: it structures financing and disbursement options, including funding formula designs, which affect allocations and program goals, and affects how formulas are operationalized in a political context. For public health program managers, inherent challenges in designing funding formulas are heightened by the paucity of scholarly research and practice analysis. This paper addresses those gaps.

INTRODUCTION

The American public sector's role in protecting health (and enforcing that protection through inspectors and public safety officials if necessary) dates to the Colonial Era, preceding national government by more than a century. To limit contagious disease, the Massachusetts Bay Colony limited the number of each ship's passengers coming to settle the new colony in 1629, and in 1634 Boston officials precluded public garbage dumping (Parmet 1992). The primacy of colonies and, later, states in protecting public health is long-standing, and is central to American federalism. In the Framing Era, as understandings evolved of the proposed national government's interactions with the proposed states, *Federalist 17* firmly places "the domestic police of a State" in the middle-tier's hands and a "variety of more minute interests . . . under the superintendence of the local interests…." (Hamilton 1987). Among the states' retained powers under the new Constitution's Tenth Amendment, collectively known as the police powers, were those associated with protecting public health (Hodge 1997-98).

Yet the national government, in parallel, has also had an important role in protecting public health. The federal Marine Hospital Service, founded in 1798 to care for sick and disabled merchant seamen, evolved into the U.S. Public Health Service (PHS), which expanded its purview in the nineteenth century to include port closures and quarantines, food and drink inspections, and limited sanitary engineering projects (usually undertaken by state and local health departments). In the early twentieth century, the PHS supervised programs addressing contagions and parasites in the South (chiefly malaria), began investigating disease outbreaks, and coordinated epidemiological studies of both contagious and chronic illness (Engel 2006).[1]

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[1] PHS disease reports were influential in establishing the need for local social welfare services, including old-age assistance and relief. See, for example:

Sydenstricker E. (1928). The Incidence of Various Diseases According to Age: Hagerstown Morbidity Studies No. VIII. Public Health Reports (1896-1970) 43(19):1124-56.

Sydenstricker E. (1929). Economic Status and the Incidence of Illness: Hagerstown Morbidity Studies No. X: Gross and Specific Illness Rates by Age and Cause among Persons Classified According to Family Economic Status. Public Health Reports (1896-1970) 44(30):1821-33.

These basic public health activities were conducted in concert with state and local authorities and were not seen as a significant challenge to state powers under the Tenth Amendment.[2]

The equilibrium between federal, state, and local authority, however, is sometimes uneasy. The practice of public health, the problems it confronts, and American federalism have evolved over time. The Institute of Medicine (IOM) now defines public health as "what we as a society do collectively to assure the conditions in which people can be healthy" (IOM 2003b, xi) and includes public, private, and non-profit sector actors in the shared endeavor. This definition comprises personal health services, but, historically, public health has targeted populations rather than individuals (Novick, Morrow, and Mays 2008), and this paper adopts that frame. It focuses strictly on governmental public health actors: the Centers for Disease Control and Prevention (CDC) at the federal level, and its state, territorial, tribal, and local government analogs.[3] Although state and local governments continue to have the dominant role in population-based public health program planning, implementation, and evaluation, the federal government, through the power of the purse, exerts important influence on American lower jurisdictions' public health policy and practice.

This paper explores how American federalism, both fiscal and functional, structures public health funding, policy, and program options. It investigates the effects of intergovernmental transfers on public health finance and programs, and analyzes the policy and political contexts of a specific component of public health governance: funding formulas for federal grant-in-aid program allocations. It builds on previous research that examined allocative

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[2] The Supremacy Clause gives Congress the authority to preempt state public health regulations, even if the state is acting within its policy powers. See: *Gade v. National Solid Waste Management Association*, 505 U.S. 88, 98 (1992). Federal preemption occurs chiefly in regulation – for example, cigarette labeling and advertising, self-insured health plans through ERISA (the Employee Retirement Income Security Act of 1974), and occupational health and safety.

[3] Although some observers place other Department of Health and Human Services agencies, such as the Food and Drug Administration, the National Institutes of Health, the Health Resources and Services Administration, and the Centers for Medicare and Medicaid within the public health sphere, this paper excludes regulatory, biomedical research, and health insurance and health care provision from that category.

strategies and metrics for federal public health programming.[4] Federal grants-in-aid have varied purposes: to stimulate action, guarantee minimum service levels, target special needs or problems, promote interstate resource or service equalization, support economic stabilization, foster innovation, and motivate collaboration and coordination across government levels (Wright 1973). As a mechanism for allocating grant funds, formulas allocations are used widely in federally funded health care and social welfare programs. Their use is generally limited in federal public health, though prevalent at the state level. Funding formulas are implemented in a politicized authorizing and operating environment, and their designs affect public health program allocations and outputs, as well as the perceptions of policymakers and the public of program efficiency and effectiveness. Fundamental public health practice questions posed by funding structures include:

- Should funding mechanisms differ by problem? Federal grants-in-aid take many forms, some more restrictive than others. Should the federal government seek greater control over funds and programs that address problems with significant externalities?
- Regardless of grant structure, should formula allocations differ by targeted public health problem? For example, should the funding formula for preparedness functions differ fundamentally from those for chronic or communicable diseases? If so, in what ways?

[4] Research was supported by the Robert Wood Johnson Foundation's Health Care Financing & Organization (HCFO) program on Public Health Systems Research, Project ID # 63615. The principle investigator was James W. Buehler, MD, Department of Epidemiology, Rollins School of Public Health, Emory University. Patrick A. Bernet, PhD, Florida Atlantic University, and Lydia L. Ogden, MA, MPP, Department of Health Policy and Management, Rollins School of Public Health, Emory University, were the other two investigators. A draft of our research paper underwent expert panel review convened by HCFO in May 2009. Based on that review, our manuscript is undergoing final revisions and will be submitted to the *Journal of Policy Analysis and Management* in 2010.

- How reliable and available are various quantitative measures of need (e.g., poverty or disease incidence rates), risk (for example, the likelihood of a bioterrorist attack), and performance (such as reductions in disease prevalence)?
- Should funding formulas work to achieve overarching goals – e.g., promoting greater horizontal equity among jurisdictions – separate from specific public health targets?

For public health program managers, inherent challenges in designing funding formulas are heightened by the paucity of scholarly research and practice analysis. This paper addresses those gaps.

FEDERALISM AND PUBLIC HEALTH

Federalism unites separate polities within an overarching political system by distributing power among general and constituent governments so that the existence and authority of each are protected. In the American system, the states, "located between the powerful federal government and burgeoning local governments in a metropolitanizing nation, are the keystones of the American governmental arch" (Elazar 1972a, 1). The states are simultaneously an integral part of this overall system and separate entities pursuing varied agendas through sundry means. American federalism is a complicated, dynamic "system of systems" (Elazar 1972a, 3) that both presumes and facilitates differences among the states, leads to inconsistent policies between and among states, and frequently produces muddled policymaking and federal government policy directives (Derthick 1996). Historically, issues related to government roles, responsibilities, and relative preeminence revolve around both ideology and pragmatism, with strongly held views about federalism on either side of the political spectrum being moderated by a persistent pragmatism about efficient and effective government intervention, depending on the nature of the problem and the solution deemed best (Bovbjerg, Wiener, and Housman 2003). As a result, iterative, cyclical patterns of centralized and decentralized approaches to shared functions have characterized U.S. federalism (Nathan 1993).

Approaches to assuring the public health reflect these patterns. Shifts in public health threats over time – from naturally occurring infectious and communicable diseases to chronic illnesses chiefly associated with modifiable lifestyle risk factors to the potential for deliberate attacks with biological, chemical, radiologic, or other agents – color policymakers' and the public's notions of the appropriate level of government to address them. An intentional release of *Yersinia pestis* in an aerosol attack resulting in pneumonic plague requires a very different governmental reaction than does naturally occurring disease caused by the same bacterium. The former invokes a national response led by the Department of Homeland Security and coordinated with other federal agencies and state and local officials (Parmet 2002; Department of Homeland Security 2003); the latter is considered a local health matter involving environmental sanitation and public and health provider education (Centers for Disease Control and Prevention 2005).

Responsibility for many public health threats is not so clear cut. For example, the escalating problem of childhood obesity is addressed through national efforts spanning numerous cabinet agencies (e.g., the Department of Health and Human Services [HHS], the U.S. Department of Agriculture [USDA], and the Environmental Protection Agency [EPA]), independent national-level entities (the Federal Communications Commission [FCC]), and the White House. Exhibit 1 (pages 87-89) shows the breadth of central government department and agency activities. Childhood obesity is additionally addressed by diverse state efforts ranging from law and regulation (such as Body Mass Index screening and physical education requirements in public schools) to state health and education department health promotion programs (executed with federal funding). Finally, local government efforts variously address the problem through food regulation (for example, menu labeling requirements or school district-specific restrictions on vending machine contents), urban planning to address sprawl, developing walking and biking paths, and similar community-level approaches.

In most areas of public health, the national, state, and local governments all conduct activities. In theory, the federal government's public health responsibilities are to perform

research and provide assistance (fiscal, technical, and, with some regularity, staff) to lower government levels. State and local agencies are responsible for program planning, implementation, and evaluation, in partnership with other public sector entities, the private sector, and community organizations (IOM 2007). In practice, federal, state, and local governments' roles and responsibilities are not clearly delineated and overlap, even within a given governmental tier. In 2005, the IOM, noting the public health importance of childhood obesity prevention, the overarching nature of the problem, and the plethora of federal (as well as state and local) players, recommended a national government task force to "ensure coordinated budgets, policies, research efforts, and program requirements and establish effective interdepartmental collaboration and priorities for action" (IOM 2005). Four years later, despite visible attention from the White House[5] to the problem of childhood obesity, no task force has been created. The multitude of government players makes creating, managing, and evaluating the efforts of a single task force complex. Absent central coordination and oversight, the federal government's efforts are scattershot and likely less successful than synergistic programs would be. Unsystematic policies and programs at the federal level are reflected in disorganized state and local activities.

Childhood obesity is not the exception, but rather the rule. The governmental public health system is highly fractured, and systemic problems are amplified as the range of actors from

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[5] Both the President and First Lady have publicly addressed the problem of childhood obesity and the importance of good nutrition. The President has issued two proclamations (October 2, 2009, on child health day: http://www.whitehouse.gov/the_press_office/Presidential-Proclamation-Child-Health-Day; and October 9, for school lunch week: http://www.whitehouse.gov/the_press_office/Presidential-Proclamation-National-School-Lunch-Week). The First Lady has addressed the issue in public remarks (for example, at the Department of Health and Human Services on October 13, 2009: http://www.whitehouse.gov/the_press_office/Remarks-by-the-First-Lady-at-HHS-Agency-Event). The First Lady's May 7, 2009, appearance on "Sesame Street" supported the Healthy Habits For Life initiative: Mrs. Obama and Elmo talked about eating right, exercising, and being healthy (http://www.youtube.com/watch?v=GhGWSfraeyQ). Her subsequent appearance on September 29, 2009 (http://www.youtube.com/watch?v=tiXU_SDirRQ) focused on planting a vegetable garden and healthy eating. At the White House Halloween event, the President and First Lady doled out dried fruit and nuts (in addition to M&Ms and cookies) to visiting children: http://www.boston.com/news/nation/washington/articles/2009/11/01/white_house_a_special_stop_for_treats/?p1=Well_MostPop_Emailed4.

other sectors – nongovernmental organizations, academia, employers and businesses, and the health care delivery system – grows in number, initiatives, and influence (IOM 2003b). Fragmentation is, at least in part, due to America's federalist system and "a direct result of the way in which governmental roles and responsibilities at the federal, state, and local levels have evolved over U.S. history" (IOM 2003b, 97). Across public health, overlapping performance of key functions and periodic invasions of policy space occupied by one level of government by another force reactive changes that, in turn, induce additional change (Anton 1997). Ample opportunities exist for incursion: More than 89,500 government units exist in the United States, encompassing municipal, town, and township governments; county and special district governments; school districts; state governments; and the federal government, not counting subdivisions within the executive, legislative, and judicial branches at any level (U.S. Census Bureau 2009b). About 90% of these jurisdictions encompass fewer than 10,000 people and 80% have fewer than 5,000. At the same time, some city public health departments serve populations greater than those of many states: the Department of Health for Los Angeles serves a population of nearly 9.9 million county-wide, more than the states of Alaska, Alabama, Arkansas, and Maine combined. Public health policy-making and management capacities are highly variable, as are financial, human, and technical resources (IOM 2003b). Little wonder that confusion characterizes federal, state, and local government ambits, roles, and responsibilities.

Further complicating the public health policy environment are the long-standing ambivalence that characterizes the public's (and politicians') views of poverty and notions of deservingness for government services, including public health programs (Williams 1939; Katz 1996; Schneider and Ingram 1997), and persistent and difficult questions of equity, efficiency, affordability, accountability, and political sustainability (Schneider and Ingram 1997; IOM 1988; IOM 2003b). Concerns about government intrusions on individual liberty – particularly in response to contagious illness – add an additional layer of constitutional complexity in the federalist system (Hodge 1997-98; Parmet 1992). Governmental public health action often runs

counter to fundamental notions of individualism (as well as property rights and market-based competition, depending on the public health issue) that permeate American political culture (Oliver 2006).

Across this complex landscape, federalism's intricacies offer multiple points of access for influencing public decision-making, benefiting a range of actors and stakeholders (Elazar 1972a). Shared responsibility increases opportunities for politicians to claim credit (and avoid blame); it allows the national government to expand or launch programs without increasing its workforce, while permitting states to offer otherwise unaffordable services and the option of replacing local tax dollars with federal funds (Anton 1997). Scholarly opinion differs regarding the relative strength of national versus state governments in the current iteration of federalism and the structure of federal-state relationships (Krane 2007), but the general consensus is that the middle-tier is not dominated by the federal government, and "the persistence of state discretion" (Derthick 1987, 68) is clear (Arsneault 2000; Derthick 1996; Posner and Wrightson 1996; Peterson 1995).

Although the central government's direct reach and authority over public health have been fairly constrained, it has influenced state and local public health policy through financing, program requirements, regulation, and oversight, beginning in the Great Depression with the unprecedented expansion of federal involvement in social welfare and health. With the advent of a national income tax, the federal government gained the ability to influence state and local government health policy and programs through shared revenues, despite the national government's limited direct authority. The carrot of federal money was paired with the stick of central regulation, requirements, and reporting. Exhibit 2 (pages 90-91) summarizes the health provisions of the 1935 Social Security Act, formulas for initial grants; the initial appropriation, and grantee requirements.

From a political perspective, grants-in-aid are a function of at least three factors. First, the long-standing preference Americans hold for decentralized decision-making makes grants an

attractive compromise between national and subnational governmental interests and powers. Second, the national government has substantially greater tax and economic resources than do states and localities, but those governments are responsible for the majority of public services. The "revenue/responsibility gap" has promoted the growth of federal grants-in-aid. Third, interest groups – including state and local governments – exert additional pressure for grants (Wright 1973). The "iron triangle" – the durable alliance between interest groups, congressional committee members, and federal agency staff – is well established as a political explanation for the growth and persistence of federal grants-in-aid across a variety of administrative agencies and programs (Kingdon 1995).

Following the New Deal, over the next three decades, the central government's reach and influence grew, and federalism's dominant effect was expanding the scope and spending of social sector programs (Nathan 2005), including public health. Grants were typically categorical, directed at a specific problem such as health services infrastructure (e.g., Hill-Burton funding, which provided more than $2.5 billion to help support construction of roughly 6,000 hospitals with more than 350,000 beds nationwide[6]) or childhood vaccinations (the immunization grant program, established in 1963, which provided funds to states to purchase diphtheria, pertussis, tetanus, and polio vaccines and to support basic functions of an immunization program) (IOM

[6] Initially, the law required federal funds to be matched with state and local monies at a rate of 1:2, a provision poorer localities and states couldn't meet. In 1949, the federal share was increased to a maximum of 67%. State allocations were made by a formula that was determined by population, weighted by relative state wealth, and relative need for hospital beds (Brinker and Walker 1962). The federal funds had strings attached: Facilities were not allowed to discriminate based on race, color, national origin, or creed – except for the proviso that allowed for discrimination so long as separate, equal facilities were located in the same area. (The U.S. Supreme Court struck this provision in 1963.) Facilities receiving funding were also required to provide a "reasonable volume" (undefined) of free care each year. Hospitals were initially required to provide uncompensated care for twenty years after receiving funding. Federal oversight of this element of the legislation was, for many years, inadequate, until class action lawsuits on the part of needy clients forced the government to commit the resources necessary to determine compliance. States and localities were also required to prove the economic viability of the facility in question, effectively excluding the poorest and neediest municipalities from the program – though the obvious equity questions raised by this proviso were not invoked for decades.

2000). Given the cyclical nature of American federalism, a contraction followed during the 1970s, ‘80s and ’90s. “New federalism,” first promoted by President Nixon, promoted decentralization (or devolution) of government services and used block grants and revenue sharing as less restrictive funding mechanisms to facilitate greater state- and local-level control. At the same time, federal court decisions based on the Tenth Amendment placed greater restrictions on federal authority in public health than had existed since the New Deal. Following the September 11, 2001, terrorist attacks, scholars and government officials alike called for greater central government operating authority over public health, safety, and security, but statutory and case law have not granted substantial new or expanded national powers (Parmet 2002). Nearly three-quarters of a century on, fiscal federalism remains the national government’s greatest influence on public health operations across the United States (Turnock and Atchison 2002).

FISCAL FEDERALISM: INTERGOVERNMENTAL PUBLIC HEALTH-RELATED TRANSFERS

Fiscal federalism governs public sector functions and financing (revenue raising and spending), parceling each among multiple governments in order to maximize efficiency and welfare. Public health programs are funded through a combination of local, state, and federal dollars. Governments derive those dollars chiefly through taxation: Local governments generally rely on property taxes for revenues; state governments depend on sales and income taxes; and the federal government on income and payroll taxes. Intergovernmental transfers, typically grants, are characteristic of the U.S. system, including public health. Local governments rely very heavily on transfers from upper-level governments for financing; states also depend on large federal transfers (Bird 1999).

The appropriate level and design of these transfers is the subject of a large body of fiscal federalism study. Leading scholars – chiefly Musgrave (1959), Tiebout (1956), Oates (1972), and

Olson (1969) – were normative rather than positive in perspective (Oates 1999), and, in general, the fiscal federalism literature has agreed with their collective assertion that decentralization improves the efficiency of public service provision by allowing government services to vary according to local wants (Wallis and Oates 1988; King 1997; McGuire 1997). Public health, however, has been omitted from fiscal federalism analysis, with the exception of a 1996 examination of thirteen states conducted by the Urban Institute's "Assessing the New Federalism" project, which concluded that decentralization offered the promise of more creative and efficient use of public health resources, but also raised the concern that localities might not have the capacity (or inclination) to provide services equivalent to those previously supported by state and federal public health agencies (Wall 1998). The tension between local government autonomy and the competing obligation for funders (federal and state agencies) to assure equity and efficiency in service provision is not unique to public health; it characterizes all intergovernmental transfers.

In general, four arguments for intergovernmental grants are made in the literature, three based on efficiency and one on equity (Inman 1988). By inference, health, and specifically public health, may be subsumed by these arguments: First, to achieve efficiency, intergovernmental grants may be required to induce state and local governments to provide the appropriate level of a national public good, such as public infrastructures. The Institute of Medicine asserts that population health *per se* – not only the means to that end (e.g., infrastructures such as surveillance or laboratory systems) – is a public good, having both local and national dimensions (IOM 2003b). Second, federal funding may be necessary to encourage the efficient level of local public goods when those goods have significant positive or negative spillovers. To the degree that public health programs improve health across local populations, they may have significant positive spillover effects – e.g., reducing direct costs of illness to individuals and the private sector and increasing school and work productivity. Third, federal aid can encourage the preferred level of a locally provided public good to achieve within-community allocative efficiency. Given local

jurisdictions' widely varying tax bases, it could reasonably be assumed the public health programs supported with federal dollars work to achieve state and health district-level allocative efficiency and reduce inequalities in access to satisfactory levels of public services. Fourth, federal aid can be a mechanism to ensure more equitable distribution of merit goods, such as education. If population health is seen as a merit or public good, with both national and local benefits, public health service provision meets this test.

Exhibit 3 (page 92) shows trends in federal grants to state and local governments by budget function, category (discretionary or mandatory), and as a percentage of total intergovernmental transfers. Overall, federal grants to state and local governments now account for 16% of federal outlays and more than 3% of gross domestic product (GDP). Health-related grants-in-aid now account for the largest share of federal grants to subnational governments, rising to $219 billion (estimated) in federal fiscal year 2008 (FY2008). HHS administers more grant dollars than all other federal agencies combined and awards approximately 60% of the federal government's total grant dollars. In FY2008, HHS awarded nearly $265 billion in grants via two grant mechanisms, mandatory and discretionary grants (Moulds 2009).

Mandatory grants are those a federal agency is required by statute to award if the recipient (usually a state, but also territorial and tribal governments and large local jurisdictions[7]) submits an acceptable plan or application, and if it meets the eligibility or compliance requirements of the program's statutory and regulatory provisions. They may or may not require state matching funds, and they may or may not be distributed by formula allocation, although the largest in HHS are. Mandatory programs are often viewed as synonymous with entitlement programs, but they are not. Entitlement programs confer benefits to individuals who meet specific eligibility criteria set by law. Congress may also mandate programs that are not directed to individuals (and thus not considered entitlement programs); examples include CDC's tuberculosis

[7] Directly funded localities differ by grant type (mandatory or discretionary) and by program, as detailed later. This variability further complicates federal-state-local government interactions and cross-program collaboration.

program and the Preventive Health and Health Services (PHHS) block grant. Over three quarters of HHS's budget comprises mandatory programs, a share considerably higher than the overall federal government proportion (60%, as shown in Exhibit 4, pages 93-94). Mandatory grants account for 86% of all grants funded by the department. Medicaid, the State Children's Health Insurance Program (SCHIP), and Temporary Assistance for Needy Families (TANF) are the largest, providing a total of approximately $198 billion annually (Department of Health and Human Services 2009). Mandatory grant-in-aid funds are typically allocated by legislatively specified formulas, such as the Federal Medical Assistance Percentage (FMAP), which structures the federal portion of Medicaid and SCHIP expenditures.

Discretionary grants permit the federal government, according to specific authorizing legislation, to exercise judgment (discretion) in selecting the applicant or recipient organization through a competitive grant process. They may or may not use formulas to guide program allocations and may or may not require cost sharing by grantees. Approximately 16% of the grant dollars HHS agencies collectively award are in the form of discretionary grants, the majority (73.43% of total discretionary grant funds) by the National Institutes of Health. In the realm of public health, CDC's total grant dollars amount to 1.67% of HHS's overall budget and around 5% of the total number of grants awarded (Department of Health and Human Services 2009). CDC distributes approximately 75% of its budget to states, localities, and other public and private partners (Levi, Laurent, et al. 2009). Of the $4.4 billion the agency awarded in FY2008, $4.3 billion (97.9%) was given in 3,425 categorical discretionary grants and cooperative agreements. The remaining $91.4 million was awarded through the PHHS block grant to 61 governmental entities (50 states and the District of Columbia, two American Indian tribes, and eight U.S. territories) (Department of Health and Human Services 2009; Centers for Disease Control and Prevention 2009).

DISTORTING EFFECTS OF FEDERAL GRANTS

Like Willie Sutton, states go where the money is, and what that means in practice is that national priorities may predominate over state and local public health goals, policy preferences, program foci and structures, and decision-making hierarchies (Hodge 1997-98; Wright 1973). By 2005, federal grants accounted for 17% of total state and local government revenue (excluding duplicative transactions between state and local governments) and 25% of expenditures (U.S. Census Bureau 2008). Public health, though, differs from other government functions. The average state public health agency receives 49% of its funding from federal grants, contracts, and cooperative agreements.[8] The range of the proportion of state health department budgets derived from federal grants, cooperative agreements, contracts, and indirect funding (excluding Medicaid and Medicare) is wide: from 6% in Utah to 83% in North Dakota.

As financing for public service provision has centralized, so has the federal government's influence over those services, despite the fact that state and local governments are the service providers. The national government structures both the substantive aspects of policy design as well as the procedural elements by identifying problems and goals; appropriating and disbursing funds to selected agents; delineating program implementation structures; and defining targets, rules, and tools for problem solutions. It is important to note that influence is not control. Intergovernmental transfers do not guarantee that goals, objectives, and outcomes desired by the

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[8] United States Code (U.S.C.), Title 31, Sections 6301-08 govern the use of grants, contracts, and cooperative agreements. The law specifies that a grant or cooperative agreement is used only when the principal purpose of a transaction is "to accomplish a public purpose of support or stimulation authorized by Federal statute." Contracts are used when the principal purpose is acquisition of property or services for the direct benefit or use of the federal government. The statutory criterion for choosing between grants and cooperative agreements is that for the latter, "substantial involvement is expected between the executive agency and the State, local government, or other recipient when carrying out the activity contemplated in the agreement." See U.S.C. at http://www.gpoaccess.gov/uscode/. In addition to the U.S.C. specifications for these fiscal instruments, the White House Office of Management and Budget (OMB) issues circulars, or directives to federal agencies. OMB Circular A-102 governs grants and cooperative agreements with state and local governments; Circular A-133 specifies the rules and conditions for audits of states, local governments, and non-profit organizations expending federal awards. See both at http://www.whitehouse.gov/omb/circulars_index-slg/.

federal government are achieved. Much depends on lower governments' capacity, including human and technical resources. Even a fundamental objective, such as a more equitable distribution of fiscal resources, may not be achieved simply by the transfer of money from the central government to state and local jurisdictions (Martinez-Vazquez and Searle 2007).

As early as 1940, concerns were raised regarding federal monies' distorting effects on state and local budgets (supporting spending that might not otherwise occur for policy initiatives that might not be priorities) and the shifting emphasis from economic stimulation to support, fostering state dependency on the federal government and diminished standing within the federalist system (Harris 1940). A more positive assessment was offered by Assistant Surgeon General Joseph Mountin the following year in his report of state-level public health activities: "Federal grants-in-aid … have made possible expansion of health activities long engaged in by some States and initiation of new services by others. Furthermore, during the past ten years there has been envisioned a broader scope of public responsibility for health measures than had previously prevailed. Many health departments are now participating in programs which in 1930 would have been regarded as outside the realm of public health concern." Mountin was careful to clarify that the "tremendous increase in Federal grants and the substantial augmentation of State and local budgets" had not altered public health focus: "These newer lines of activity are not substitutes for such services as control of communicable diseases, maintenance of vital statistics, regulation of water supplies and sewage disposal facilities, or sanitation of milk and other food supplies which have been recognized as bona fide public health measures throughout the years. Rather, they are a supplement to or enrichment of those earlier functions" (Mountin and Flook 1941, 1674-75).

In 1961, the federal Advisory Commission on Intergovernmental Relations (ACIR) noted that categorical public health grants for general health; control of heart disease, cancer, sexually transmitted disease (STDs), and tuberculosis (TB); mental health; maternal and child health services; and physically disabled children's services had become a stable source of public health

program support. Once stimulative of subnational governments' health programs, these grants had evolved to "serve as a permanent contribution by the National Government to the support of the respective State and local activities" and states, in turn, by "providing funds for these categories, considerably in excess of matching requirements, have shown that they visualize the provision of health services in general, and in each of the categories to be a continuing responsibility of State government" (Advisory Commission on Intergovernmental Relations 1961, 16-17), whether or not they were originally so conceived.

To reduce the distorting effects of national government money and program requirements, ACIR recommended that states be given greater flexibility through a consolidated block grant, with a uniform allotment and a formula to determine required matching fund levels. The move to block grants was supported by the National Commission on Community Health Services[9] and the Association for State and Territorial Health Officials (ASTHO). The switch was also supported by federal health officials, who saw it as consistent with a preventive and holistic approach to health (Robins 1976).

Responding to subnational governments' calls for greater flexibility, Congress passed the Comprehensive Health Planning and Public Health Services Amendments of 1966 (P.L. 89-749, commonly known as the Partnership for Health Act), which combined nine categorical grants spanning both public health and personal health services into one health block grant as part of the overall strategy known as "Creative Federalism." Its general goals were to encourage program innovation, promote greater state budgetary flexibility, and achieve administrative efficiencies. Section 314(d) consolidated categorical grants in general health, TB control, cancer control, mental health, heart disease, chronic illness and services for the aged, home health services, and radiological health. Section 314(e) combined into one project grant programs in community health services, TB control, cancer control, mental health, mental retardation, STD control, and

[9] The National Commission on Community Health Services was a private, nonprofit study group established in 1962 jointly by the National Health Council and the American Public Health Association. Its final report, *Health Is a Community Affair*, was issued in April 1966.

neurological and sensory diseases (Robins 1976). Although the block grant offered states greater spending flexibility, it did contain some constraints: funds could not be used for air pollution, inpatient hospital care, research, or capital expenditures, and 15% of the total was earmarked for mental health. In 1967, a requirement was added that 70% of all 314(d) expenditures had to support direct service delivery. States were not required to submit annual reports, but had to assure their records would be available for audit if necessary. The unintended consequence of this requirement was that, in order to limit federal scrutiny of their budgets, states moved to concentrate 314(d) funds, which served administrative simplification as well as political precedences rather than program priorities (Greenberg 1981), particularly infrastructure funding. "Political support for categorical health programs where beneficiaries can be specifically identified is much greater than the support for less visible general health services which benefit the entire population" (Greenberg 1981, 155). Absent public and political support, funding contracted and new categorical programs were passed by Congress rather than expanding the 314(d) program.

Block grants offer grantees greater discretion in use of funds; states report they increase administrative efficiency and cross-program integration (IOM 2003b). Grantees strongly prefer block grant funds; categorical grants restrict their use of funds and are widely perceived to add administrative costs and complexities, reduce cross-program services, contribute to gaps in services, and make program evaluation difficult (IOM 2003b). However, the capacity and will of state and local governments to target federal funds vary widely, raising questions about the efficiency of nontargeted transfers to achieve specific federal health objectives. Block grants like the Partnership for Health funds are predicated on the idea that states will act as instruments of the federal government in achieving national goals, whether those are general, such as sparking innovation and experimentation, or specific, such as reducing the burden of TB. The potentially conflicting objectives of increasing state and local flexibility while simultaneously attaining federal objectives raises particular accountability concerns, and the history of block grants

suggests that the balance struck between federal control and state discretion has often been unstable. The resolution of these issues invariably reflects a political decision properly decided through the democratic process (General Accounting Office 1995b).

A review of block grants – including CDC's PHHS block grant – mandated by the 1981 Omnibus Budget Reconciliation Act (OBRA) by the General Accounting Office (GAO, now the Government Accountability Office) concluded that several concerns emerged. First, because initial block grant distributions were based on prior categorical grants, they were not necessarily equitable or directed to the jurisdictions with greatest need. Second, because block grants carry fewer reporting requirements than do categorical grants, there are important information gaps, affecting the ability of Congress, executive branch agencies, and state and local program managers to effectively oversee block grants and evaluate performance. Third, the transition to block grants resulted initially in reduced funding to states and, over time, reduced state flexibility as additional constraints were placed on recipients, imposed because of congressional concern that states were not adequately meeting national needs. Constraints often took the form of set-asides, requiring a minimum portion of funds to be used for a specific purpose, and cost-ceilings, specifying a maximum portion of funds that could be used for other purposes; the effect was essentially to "recategorize" programs (General Accounting Office 1995a).

Research by Rich on the Community Development Block Grant program (analogous to many public health programs because it explicitly targets the poor) concludes that strong local coalitions are effective in influencing federal program decisions, including targeting decisions, but require strong national government partnership to make targeting more acceptable and effective locally (Rich 1993). GAO has noted that the effectiveness of unrestricted aid specifically for the purpose of stabilizing state finances during economic downturns can be limited if aid is not timely and not targeted to those most affected and with the fewest available resources. Additionally, accountability concerns are raised by the fungibility of unrestricted federal funds that are substituted for state funds, making their use difficult or impossible to track.

Finally, states could come to rely on federal aid in order to close budget gaps during economic downturns instead of taking actions to stabilize their own finances (General Accounting Office 2004b).

In the realm of public health, the congressional decision to switch from targeted grants for TB prevention and control to general public health block grants in 1970 has been blamed for disease resurgence: "Predictably, with each passing year, the devastating impact of the new block-grant policy on tuberculosis control became more apparent. And by the end of 1984 the incidence of tuberculosis had begun to rise, marking the start of a vicious tuberculosis resurgence that is *unparalleled by any industrialised nation in modern times*. This catastrophe was, without doubt, a direct result of the national switch from targeted categorical grants to block grants for tuberculosis control a decade earlier" (Reichman 1996, 176).

With iterations of federalism favoring either decentralized or centralized approaches, block grants have waxed and waned in popularity. The Nixon, Reagan, and George W. Bush administrations identified grant reform as a priority with the objective of increasing state discretion (Conlan 1984). Each block grant expansion increased the share of federal aid in block grant form, but was then followed by a contraction in block grant funding as Congress sought greater control and funded categorical or entitlement programs instead. The share of overall federal aid provided by block grants has never risen above 20% (Finegold, Wherry, and Schardin 2004). In public health, CDC's PHHS block grant represents a little over 3% of CDC's FY09 funding to grantees.

More recently, economists have examined the "flypaper effect" – the tendency of federal or state grant money to stick where it hits, resulting in greater local spending than theory would predict. Low-end estimates are that a $1 intergovernmental transfer increases local spending by 25 cents; the high-end rises to more than a dollar (Hines and Thaler 1995). Public health, despite relatively modest grant monies, has not been immune from this tendency: a 2007 study of one state (Missouri) found that local agencies receiving more funds from federal and state sources

also raise more at the local level (Bernet 2007). Although unrestricted block grants may change the composition of spending, they do not obviate the flypaper effect of intergovernmental transfers (Hines and Thaler 1995). Recent economic research concludes that flypaper is a response by elected officials at all levels acting on rational incentives (Inman 2008). For better or worse, intergovernmental transfers are now a reality of American fiscal politics. Understanding how (and why) grants are constructed as they are and spent as they are is essential for the appropriate design of central government transfer policies and evaluating the allocative performance of intergovernmental transfers.

FUNDING FORMULAS IN FEDERAL PUBLIC HEALTH PROGRAM ALLOCATIONS

In 2009, funding formulas were used to allocate nearly $480 billion across the federal government (including one-time funds distributed from the American Recovery and Reinvestment Act of 2009) (Government Accountability Office 2009a). For most, data elements and the formula itself are specified in statute. Public health is the exception; only the PHHS block grant and one categorical formula-based grant are specified in law. The PHHS block grant is distributed by population. In contrast, the Comprehensive Tuberculosis Elimination Act of 2008 (P.L. 110-392) requires funds to be allocated by a formula that "take[s] into account the level of tuberculosis morbidity and case complexity in the respective geographic area and may consider other factors relevant to tuberculosis in such area."[10]

The specifics of funding formula design options in public health have received less scrutiny than those used in other government sectors, particularly health services (e.g., HRSA's Ryan White HIV CARE program) and public health insurance (Medicaid and SCHIP). As a result, public health managers have relatively few resources to draw upon in designing a funding formula or assessing the impact on allocations of alternative formula designs. The allocation

[10] The Comprehensive Tuberculosis Elimination Act of 2008 is available at http://www.gpo.gov/fdsys/pkg/PLAW-110publ392/pdf/PLAW-110publ392.pdf.

formula used in the Ryan White program has been examined extensively by a congressionally-mandated Institute of Medicine report (Institute of Medicine 2004), GAO analyses (1995c, 1995d, 2006, 2009d), congressional hearings (e.g., Government Accountability Office 2005), and scholarly analysis (Buehler and Holtgrave 2007a, 2007b). Attention focused almost exclusively on the specific question of whether these allocations should be based on counts of people with AIDS versus those with all stages of HIV infection. Medicaid and SCHIP formulas and inputs have had even more scrutiny, including more than fifty GAO reviews (Government Accountability Office 2003, 2004a, 2008b, 2009b, 2009c), numerous IOM reports (e.g., Institute of Medicine 2003a), and hundreds of academic articles. Unlike Ryan White and Medicaid, public health programs have generally not employed adjustments to account for differences among states and localities in the cost of providing program services or the potential availability of local resources that could offset the need for federal funding.

No standard model or method exists for choosing public health funding formula indicators, but fundamental planning principles dictate that inputs be simple, stable, available and timely, logical, and broadly and equitably representative of need (Peterson and Alexander 2001). Formulas (in public health and other programs) typically use one or more of the following components:

- *A measure of need*. In public health, this may be based on a population considered at risk for a disease or condition (e.g., the percentage of the population that is obese, as proxy for diabetes), incident or prevalent disease (e.g., yearly HIV infections or total AIDS prevalence as a proxy for the number of persons eligible for HIV-related services).
- *A measure of jurisdictional fiscal capacity*, such as per capita income or total taxable resources (TTR).
- *A measure of effort*, such as matching funds or in-kind contributions of staff time.
- *An index of costs*, such as wages paid to health care workers.

In addition, some formulas include one or more of these features:

- A *threshold*, which establishes a minimum level of need (such as cases) before a jurisdiction is eligible for funding.
- A *base or minimum amount* to be received by each jurisdiction, which may be supplemented with additional funds.
- A *hold-harmless provision*, which limits funding decrements from year to year.

Many of these components existed in funding formulas in the 1935 Social Security Act. From the outset, however, public health funding determinations have been less structured than those of other health programs, a financial policy that remains largely in effect. As shown in Exhibit 2 (pages 90-91), funding for maternal and child health in the act was distributed according to a formula that included a base amount ($20,000), additional funding in proportion to each state's live births ($1,800,000), and state financial need ($980,000), taking into consideration live births. States were expected to match the federal grant, with the exception of funds based on need. In contrast, public health funding was distributed on a per capita basis, combined with a measure of "special health problems" unspecified in the statute, and state financial needs, also unspecified.

In FY2009, CDC expects to distribute approximately $1.95 billion in formula-based grants and cooperative agreements (Kotch 2009), as shown in Exhibit 4 (pages 93-94). This represents approximately 43% of the total amount the agency awards extramurally. Population-wide programs, such as the PHHS block grant, the Public Health Emergency Response (PHER) cooperative agreement, and the rape prevention and education cooperative agreement are straight per capita allocations using Census data. Supplemental funding from the American Recovery and Reinvestment Act is similarly allocated, but incorporates a base amount for each jurisdiction. The Cities Readiness Initiative does as well, but includes a hold-harmless provision to protect grantees from significant reductions in funding for the current fiscal year. In contrast, disease-specific

programs – TB and STDs – integrate measures of need (incidence and case complexity) as well as thresholds (diagnosed cases or case rates).

In considering inputs for public health formulas, a per capita metric may be an appropriate referent when public health programs provide population-wide services that are not based on the needs of selected groups (e.g., those with a particular health risk). However, it is arguable that special needs should be considered in any population-wide public health programming. Population size alone does not take into consideration the distribution of special health needs, such as disability or vulnerabilities arising from social or economic disparities that might affect capacities to take self-protective measures or needs for public health services during crises. Similarly, it does not account for differences in existing medical and public health capacities to cope with potential crises – though, in general, more densely inhabited areas have stronger public services infrastructures than do less populous areas. A per capita allocation may simply be a convenient, expedient, and reasonable choice when factors that affect the need for programs vary markedly across states, as is the case in the CDC Public Health Emergency Preparedness (PHEP) program, or when a program itself is highly salient, visible, and, thus, inherently "political," as preparedness was post-9/11. Alternatively, a per-person-in-poverty allocation (which CDC does not employ) may be an appropriate referent when programs address health problems that affect socioeconomic groups differentially, resulting in health disparities. Disparities that manifest as differences in health status when measured by race/ethnicity or by social/economic status are substantial and have been explicitly targeted for reduction in national health objectives.[11]

"Base-plus" programs – those that dedicate a proportion of total funding to equal minimum funding for all grantees – result in allocation distributions that are more disproportionate than either the per-capita or per-person-in-poverty referents, an effect that

[11] The federal government's Healthy People 2010 plan has two overarching goals: 1) increase quality and years of life; 2) eliminate health disparities. For additional information, see: (http://www.healthypeople.gov/Document/html/uih/uih_2.htm).

increases as the proportion of total funding dedicated to equal minimum allotments increases. Because set-asides for minimum funding result in lower per-capita allocations for states with larger populations, advocates for grantees with large populations may view the resulting distribution as unfair. Formulas that incorporate disease trends (at-risk, diagnosed incidence, prevalence, or case rates, for example) are logical given disparate per-state burdens of illness; however, funding distributions may not mirror state populations, resulting in more populous states viewing the allocations as inequitable.

THE POLITICS OF NUMBERS

Because funding formulas are quantitative, they are considered to be more objective, transparent, and rational than other allocation schemes. These qualities are presumed to facilitate public and political understanding, deliberation, and acceptance. The National Academy of Sciences (NAS) Panel on Formula Allocations asserted that using formulas "as opposed to arbitrary specification of the amount to be given to each recipient jurisdiction" facilitates informed debate about the allocation process by providing documentation of assumptions and computations and offers legislators an effective way of explaining the allocation process to their constituents (National Research Council 2001, xiii).

The panel's assumption is that formulas are not subjective. But formulas are without exception subject to the indicators selected, the quality of data sources, the statistical procedures used to determine indicators and allocations, and the vagaries of the political process, which can produce unexpected and unintended effects (National Research Council 2001). Statistics are always subjective. They are sensitive to organizations' internal forces, mostly methodological decisions that arise from human, technical, and fiscal capital capacities, and to external forces. Statistics "are products of social, political, and economic interests that are often in conflict with each other," and they "reflect presuppositions and theories about the nature of society" (Alonso and Starr 1986, 1). This is why formulas are developed in the context of a complex political

process. Statistics are inherently political, and thus formulas are as well. “The politics of printouts” – the statistics used in formulas for federal grantmaking – has engendered a new politics of statistics and statistical geography. “No member of Congress … would vote on an important grant-in-aid formula without a printout to see who wins and who loses” (Nathan 1986, 341). Recognizing the political implications of allocation decisions, participants in the NAS Panel on Formula Allocations proposed “Senate” and “House” indices to describe the number of states or the size of populations in states with substantial changes in funding under alternate formula designs, respectively, anticipating the number of U.S. Senators or Members of the House of Representatives who may be pleased or displeased by alternative allocations (National Research Council 2001).

Data quality is a concern for any funding decision, but particularly so for formula-driven allocations, because of presumptions about their quantitative accuracy and fairness. Timely and available data are inevitably imperfect proxies for program goals or grantees’ funding needs, and the selection of various data sources or weighting strategies reflects the spectrum of values or priorities that converge in the political process of designing an allocation formula. Additional concerns about data reliability arise when grantees themselves provide the data used to make allocations, significant funding is at stake, and economic constriction reduces budgets. These and other methodological and policy challenges were documented in 2001 and 2003 by the NAS (National Research Council 2001, 2003). Recent reviews of commonly used data components commissioned by the HHS Assistant Secretary for Planning and Evaluation concluded that income, poverty, and health insurance estimates from major national surveys were unstable and, in the case of all-year insurance reports in the Current Population Survey (the gold standard), unreliable (Czajka and Denmead 2008; Davern 2009; Czajka 2009). A 2007 assessment of state electronic disease surveillance systems found that 40 states had an operational electronic surveillance system (i.e., fully functional and currently in use) for general communicable disease surveillance but that just 13 reported achieving interoperability among two or more surveillance

modules (that is, surveillance systems for different conditions or events, such as HIV/AIDS and TB or outbreak management and laboratory reporting) (Dwyer, Foster, and Safranek 2009). A 2009 assessment of epidemiology capacity in state health departments documented the decrease in state-level epidemiologists since 2004 and a resulting decrease in functional epidemiology capacity, and noted that most states lack technical capacity (e.g., automated laboratory reporting, web-based provider reporting, cluster-detection software) as well. "[M]ajor gaps in capacity" result in less timely and complete reporting, reduced ability to rapidly detect disease outbreaks, and diminished capability to monitor treatment for conditions including diabetes and HIV and respond to health disparities (Boulton, Hadler, et al. 2009).

Intergovernmental transfers for preparedness are a vivid example of the politicization of formula-based funding. Since 2002, the Department of Homeland Security (DHS) has distributed almost $20 billion in funding to enhance the nation's capabilities to prevent, protect against, respond to, and recover from acts of terrorism or other catastrophic events (Government Accountability Office 2008a). Concerns about the allocation strategy date from the beginning of the program. In 2004, the 9/11 Commission noted that funding decisions were questionable: "Throughout the government, nothing has been harder for officials – executive or legislative – than to set priorities, making hard choices in allocating limited resources. These difficulties have certainly afflicted the Department of Homeland Security, hamstrung by its many congressional overseers. In delivering assistance to state and local governments, we heard – especially in New York – about imbalances in the allocation of money" (The National Commission on Terrorist Attacks Upon the United States 2004, 395-396). The committee went on to state that concerns revolved around two questions:

- *How much money should be set aside for criteria not directly related to risk?* "Currently a major portion of the billions of dollars appropriated for state and local assistance is allocated so that each state gets a certain amount, or an allocation based on its population – wherever they live." As discussed in the section on states' use of

funding formulas (beginning on page 73), program managers report struggling to determine "the right" public health program allocation, particularly for very sparsely populated jurisdictions.

- *Can useful criteria to measure risk and vulnerability be developed that assess all the many variables?* "The allocation of funds should be based on an assessment of threats and vulnerabilities. That assessment should consider such factors as population, population density, vulnerability, and the presence of critical infrastructure within each state. In addition, the federal government should require each state receiving federal emergency preparedness funds to provide an analysis based on the same criteria to justify the distribution of funds in that state." The threadbare condition of surveillance and epidemiologic capacity at the state level makes accurate assessments of risk or need difficult; states also report laboring to establish verifiable metrics for program effectiveness.

In sum, the Commission wrote: "In a free-for-all over money, it is understandable that representatives will work to protect the interests of their home states or districts. But this issue is too important for politics as usual to prevail…. [F]ederal homeland security assistance should not remain a program for general revenue sharing. It should supplement state and local resources based on the risks or vulnerabilities that merit additional support. Congress should not use this money as a pork barrel." In response, DHS developed an empirically based formula that incorporated quantitative components of three elements: threat, vulnerability, and risk (Government Accountability Office 2008a).

Complaints, scathing media reports (Lipton 2006), and congressional scrutiny continued (Coburn 2007), and as part of the Omnibus Appropriations Act of 2007, GAO was mandated to review DHS's formula methodology. GAO found that the formula did not measure vulnerability for each state and urban area. "Rather, DHS considered all states and urban areas equally vulnerable to a successful attack and assigned every state and urban area a vulnerability score of

1.0 in the risk analysis model, which does not take into account any geographic differences. Thus, as a practical matter, the final risk scores are determined by the threat and consequences scores" (Government Accountability Office 2008a). In FY08, DHS provided approximately $1.8 billion to states and urban areas through its Homeland Security Grant Program (HSGP) (Department of Homeland Security 2008). To cover its political bases, the department uses a combination of base-plus, set-asides, and competitive awards to allocate funds in seven different preparedness programs under the HSGP.

CDC's preparedness funding, though far smaller than DHS amounts, faced similar questions about risk-based allocation strategies and equity. CDC's PHEP cooperative agreement uses state population as a basis for funding decisions; it supports states' efforts to prepare for potential bioterrorism, natural disasters, epidemic diseases, pandemic influenza, and other public health emergencies. The likelihood and impact of these diverse threats to public health would be difficult to reliably or consistently quantify across states, given the challenge in identifying standard, numeric measures that could summarize the variable mix of potential public health emergencies across states. Thus, CDC elected to provide all states with a standard minimum level of funding to support functions that would be necessary regardless of population size and allocated the balance of funds proportionate to each state's share of the national population, with separate set-aside funding for the District of Columbia, the City of Chicago, Los Angeles County, and New York City. For example, of the $699 million in "base program" funds allocated in 2006, $196 million was used to provide each of the 50 states with a minimum of $3.91 million, to which their population-based allotment was added (Centers for Disease Control and Prevention 2006a). Similarly, the CDC Pandemic Influenza Planning (PIP) program, which was a separately funded supplement to the PHEP for several years, also provided an equal minimum base funding to each state and a per-capita-based allocation of the balance (Centers for Disease Control and Prevention 2006b; Buehler and Holtgrave 2007). In 2006, the PHEP and PIP grants dedicated approximately 29%, and 26% of program funds, respectively, to the minimum baseline funding to states. For the

remainder of the allocations under these two programs, each state's population size serves as an accessible and simple proxy for its aggregate mix of potential public health crises and requisite emergency preparedness capacities.

TESTING ALLOCATIVE STRATEGIES AND THE EFFECTS OF MEASURES OF NEED AND ADJUSTORS

Because of the absence of analysis of public health formula-based allocations, our prior research identified allocation assessment metrics, which we applied to comparisons of allocations based on various indicators of funding need; we then described the effects and evaluated them against program aims and explained the effects of adjustments across states (Buehler, Bernet, and Ogden, unpublished analysis). Categories of indicators examined included measures that reflect the extent of public health problems or threats and attendant needs for public health services (e.g., disease incidence and prevalence and persons living in poverty), differences among states in the cost of providing public health services (such as labor costs and geographic area), and the availability of in-state resources that may offset the need for federal funding (per capita income and other fiscal capacity measures).

In addition to comparisons of proportionate shifts in overall or state-specific funding under alternative allocations, we adapted the Gini index of income inequality to provide a summary measure (proportionality of allocation) of the similarity or difference between a given allocation and two referent allocations, based either on equal per-capita or equal per-person-in-poverty funding across all states. These referents encompass two general considerations that shape deliberations of funding needs for state public health programs: the size of the population in need of program services, which is largely driven by a state's overall population size, and the modulating effect of the association between poverty and a broad spectrum of adverse health outcomes addressed by public health programs.

For four actual and four hypothetical federal program allocations, we compared current allocations to allocations based on alternate measures of service need and to allocations where state funding shares were adjusted up or down to account for differences in program costs, population income levels or disparities, and in-state capacities to generate revenues. Exhibit 5 (page 95) shows the existing and hypothetical program allocations we examined, alternative allocation strategies, and adjustors based on need. In general, current and adjusted current allocations had proportionality of allocation values that fell within the bounds of those for the two referent allocations. Adjustments for income and income disparities had the greatest effects on allocations, shifting allocation distributions away from the per-capita referent and towards the per-person-in-poverty referent. Exhibit 6 (page 96) shows two example results, for the CDC emergency preparedness program and a hypothetical program based on premature mortality.

Although our study involved a large number of comparisons, we considered only a fraction of potential measures that could be used to determine appropriate state funding shares across public health programs. Instead, we attempted to select programs or alternative models with representative allocation strategies, as well as representative indicators that may modulate the need for funding, such as differences among states in the cost of implementing programs, the potential access to local revenues that may offset the need for federal funding, and income disparity. The programs we considered represent a mix of likely approaches, including allocations based on population size, poverty-related measures, historical precedent, disease risk factors or antecedents, and premature mortality. As a measure of costs, we considered average salaries across all professions, which is likely to reflect the costs for the mix of staffing categories involved in public health programs and multiple measures of wealth, revenue-generating potential, and income disparity. Adjustments that increased allocations for areas with higher salary costs were variable across programs and, in some instances, had effects that opposed those of adjustments that increased funding for areas with lower income levels, when such income

indicators were used as a marker for an increased risk of disease and thus increased need for program funding.

When applied to a per capita allocation, the wealth and income-disparity adjustors generally had parallel effects of making allocations more dissimilar to a per-capita referent and more similar to a per-person-in-poverty referent, with the effect of the disparity adjustor being less than that of adjustments based on per capita income. By comparison to the income and disparity measures, adjustments for total taxable revenues had smaller impacts. Taken together, the effects of adjusting a per capita allocation using these measures could serve as referents for assessing the effects of other adjustors. However, when the various adjustors were applied to allocations based on other strategies, patterns of effects were less consistent or unapparent. While theoretically appealing, the notion that various indicators could be aggregated into categories that describe either universal dimensions of the need for funding or funding requirements within various types of public health programs, is probably not feasible, given the variability of effects we observed. Even for measures that are strongly correlated, small variations will result in different allocations, and these differences may be important for some states. Little is known, however, about the effects of shifts in program direction, funding levels, and funding formula allocations. We undertook additional research, described below, to examine states' use of funding formulas.

STATES' USE OF FORMULAS FOR PROGRAM FUNDING ALLOCATIONS

States use a variety of methods to finance local agencies, including: 1) a combination of per-capita funding and categorical grants specific to activity or staff; 2) contracts; 3) formulas that include need-based variables (such as health status) and financial resources of the local population (e.g., number living in poverty or tax receipts); 4) straight per-capita distributions based on local population statistics; 5) reimbursement for locally provided services; and 6) funding for local offices that are administratively part of the state health department (Leviss

2008). On average, state governments provide about a quarter (23%) of local health department funding, excluding federal pass-throughs (Leep 2006).

The degree of centralized operations and control varies considerably across the nation: six states have no local health departments; ten states use a centralized organizational control arrangement (state health agencies provide local public health services); 18 are decentralized (local health departments often collaborate with but are organizationally independent of the state health agency); 17 function with some combination of these arrangements (hybrid states). There are more than 3,000 local, county, city, district, and regional public health departments across the United States (Tilson and Berkowitz 2006), but the number widely varies across states. About half of states (23) have 49 or fewer local health departments, another 21 have 50-99, and six have 100-199 local health departments. Massachusetts has 351 (ASTHO 2009). Because of the variability in administrative structures, the division of labor between state and local health departments is inconsistent across the nation; a general typology of public health activities state health agencies perform directly and those chiefly provided by grantees or contractors, including local health departments, appears in Exhibit 7 (page 97).

The relationship between state administrative structures and funding approaches is largely unexplored in the practice literature. Qualitative research conducted by Potter and Fitzpatrick (2007) examined administrative arrangements between six state and local health departments (e.g., centralized or decentralized), state legal structures (whether local health departments are required or optional under state law, for example, and the degree of autonomy or independence from the state agency), the proportion of state funding in local health departments' budgets, and funding mechanisms. In this analysis, administrative structures were determined to be unrelated to funding approaches. Funding schemes were essentially idiosyncratic, but, in general, there was a positive correlation between service mandates, the level of funding, and state oversight. The state contribution to local health departments' budgets ranged from 0%-25% (in Missouri, where health departments are funded locally and are independent of the state) to

76%-100% (in Florida and New Mexico, where the state health departments operate local offices). Given the dearth of information on state health departments' use of formulas to determine funding allocations, we undertook a survey in collaboration with the Association of State and Territorial Health Officials, the national non-profit professional organization representing the public health agencies of the 50 states, the U.S. territories, and the District of Columbia. The description of methods and the survey instrument appears in the Appendix, beginning on page 102.

In our final sample (39 states and the District of Columbia)[12] most states reported using formulas for program allocations: 67% use formulas currently, another 7% intermittently, and 2% are actively planning for formula-driven allocations. Nine responding states and the District of Columbia do not use funding formulas, and the primary reason is the absence of local health agencies to receive funds in centralized health departments; other reasons listed were: allocations are based on historical distributions or a straight pro rata distribution, a lack of robust data for decision-making, and formulas are perceived as inflexible.

Top federal public health initiatives carried out by state health agencies are activities funded by CDC's PHHS block grant, vital statistics, all-hazards preparedness, Healthy People prevention programs, and the National Cancer Prevention and Control Program grant (ASTHO 2009). Of those, only CDC's preparedness funding is formula-driven. States, however, use formulas to allocate funds across a range of federally funded programs, as shown in Exhibit 8 (page 98). Interestingly, many states using formulas employ them to distribute funds for core (noncategorical) public health activities; as well as untargeted epidemiology and surveillance; regulation, inspection, licensing, and other environmental health functions. Categorical programs

[12] Notes: The Northern Mariana Islands territory was excluded from the final analysis. The 11 nonparticipating states were, unfortunately, significant in both population (38% of the U.S. total for 2008) and federal funding (more than $2 billion in CDC dollars): California, Connecticut, Hawaii, Iowa, Louisiana, Nevada, New Hampshire, New Jersey, New York, North Carolina, and Texas.

funded via formula allocations include maternal and child health services, immunizations, and population-based primary prevention (e.g., tobacco prevention and cessation).

In a correlation analysis, we found that states' use of funding formulas is positively associated with the presence of local health agencies, the level of state public health funding, the number of state health agency full-time equivalent employees (FTEs), and total CDC funding. Funding formula use is negatively correlated with per capita public health funding. In more complex multivariate binary probit regression modeling[13] we found that the use of funding formulas is associated with the number of local health departments and with the percentage of public health funding provided by the federal government, but not with overall funding level (federal and state funding combined or either one in isolation), state health department FTEs, or per capita public health spending, as we hypothesized. As shown in Exhibit 9 (page 99), states' use of funding formulas is first and foremost predicated on the presence of local health departments to which monies would need to be granted. In our sample, the probability of funding formula use was most strongly correlated with the presence of 1-49 local health departments in a state (z-value = 3.12, $p<.01$); 50-99 local health agencies had a z-value of 3.12 and was significant at the .10 level and more than 100 local health agencies had a z-value of 1.79 and was similarly significant at the .10 level. The percentage of federal funding in a state's public health budget was also associated with funding formula use, though our results were not significant. We theorized that that states receiving a greater portion of their overall public health funding from the federal government might be relatively poorer, smaller in population, and perhaps lack local health departments, explaining the absence of funding formula allocations. However, we found

[13] Because the dependent variable was dichotomous, we chose probit over ordinary least squares. This allowed us to make the following assumptions: There is no assumption that the dependent variable (formula use) and the independent variables are related linearly and no assumption of homoscedasticity. We did not assume that formula use was normally distributed; in fact, we hypothesized that the distribution would likely be skewed, though we were unsure in what direction. A limitation of our modeling is the small sample size. Therefore, we present our statistical results with the caveats that the overall sample size is small, and that some cell sizes are likely too small to be reliably interpreted.

that the probability of funding formula use was essentially the same irrespective of the proportion of federal funding.

The most common data sources reported for formulas were Census data, disease incidence, risk or disease prevalence, and utilization rates (e.g., eligibility and uptake for USDA's Women, Infants, and Children program). States reported that formulas are not static: 27 respondents indicated formulas have changed over time, as program needs changed, funding grew or shrank, and in response to population shifts. However, allocation changes are modulated by hold-harmless provisions and shifting funds across programs. Respondents noted that they "had to make sure no single public health region 'lost' more than they 'gained'" and "Over time we have added provisions to make sure no region loses a significant amount of money in a single year – because most of the funds are behind FTEs."

Parallel to federal distributional challenges, states noted that finding the "right" or "equitable" formula-based allocation is difficult. Base-plus allocations are common as a way to balance the pressures of fiscal capacity, disease burden, and population: "The main challenge we face related to funding formulas boils down to rates vs numbers.… [W]e struggle with the issue of how much do we base the formula on the disease rates per district versus the population numbers. The areas with the highest rates of diseases are rural and have very small numbers of people. The more populated areas of the state have lower rates of chronic diseases but much higher numbers of people with the diseases. Rural areas are also faced with less overall infrastructure – fewer hospitals, health departments, YMCAs, and often social capital. We generally give a much higher per capita funding level for rural areas, but even that has generated problems since it doesn't seem to be sufficient." Similarly, "The formula [for primary prevention activities] has always been hotly contested.… The larger health departments want the formula to be 100% population based with no minimums and the smaller health departments feel they need a minimum grant in order to maintain an adequate level of service given the fiscal constraints of

their respective counties." In summary, one state wrote, "It's a classic dual between 'voting' your pocketbook (what's good for your individual county) and a broader view of statewide funding."

ACCOUNTABILITY AND FUNDING FORMULAS

As demands for greater transparency and accountability across all levels of government have increased, the policy focus of intergovernmental transfers has been increasingly directed to outcomes. The federal government's attempts to assure that grantees make progress toward goals and objectives and abide by program regulations has a very long history, dating to the Morrill Act of 1862, which established land-grants for colleges. The act precluded the use of funds for buildings or equipment, thus requiring state financial participation. Annual reports were required, although there was no provision for federal action if deficiencies occurred, a situation remedied in 1890 by a subsequent act permitting the Secretary of the Interior to withhold funding from grantees not meeting standards.

Subsequently, Social Security Act health provisions required grantees to submit a state plan for federal approval and, in the case of the maternal and child health grants (but not those for public health), states deemed out of compliance could have their grants rescinded. As early as 1939, the potential for withholding grant funds had become "one of the more potent means of securing state acquiescence," and Congress regularly used this statutory device to enforce federal standards (Williams 1939). Other mechanisms for assurance used at the inception of the federal grants-in-aid system included the requirement that the state legislature accept the federal act (and funding) and create a state agency with sufficient power to execute the federal mandate; a state-developed plan subject to federal approval; and state matching funds. Public health grants and cooperative agreements typically specify recipient requirements, such as demonstrating viable cross-sector partnerships or community involvement in planning, but not outcome or even process measures. The ongoing inability to link establish agreed-upon performance measures and, fundamentally, to link spending for public health activities to tangible desired outcomes "limits

efforts to demonstrate the value of the governmental public health enterprise" and diminishes public and political support for public health programming (Turnock and Atchison 2002).

Federal grants-in-aid have three principle goals: delivering support to the right areas (the definition of "right" depending on specific program goals as well as political objectives); implementing programs and delivering services; and producing desired outcomes, such as improvements in health. "Formulas have a major, direct role in achieving the first goal; a substantially smaller, indirect role in achieving the second goal; and essentially no role in achieving the third goal, except through the first two goals" (National Research Council 2001, 55) Ascertaining program goals, however, is not straightforward. The stated goals of an allocation program may be fiscal equalization or addressing needs, but "the real goals of an allocation program usually differ from the stated goals," and are revealed only through the political process, the selection of indicators, and the application of the formula in practice (Spencer 1982). Formulas that emerge from the legislative process reflect compromises between substantive program goals and the need to secure the necessary votes at each stage (National Research Council 2001). Public health funding formulas could conceivably take into account performance, although incorporating outcome or quality metrics would inevitably ratchet up the already intense political process and layer on additional intricacies in implementation.

Determining the association between funding and performance is always difficult. Linking funding, public health activities, and health outcomes is especially complex. Rising or falling disease incidence and prevalence may be inferentially associated with program performance, but, as the IOM has noted, health is ultimately a function of individual traits and behavior; social, family, and community networks; living and working conditions; broad social, economic, cultural, health, and environmental conditions; and global, national, state, and local policies (Institute of Medicine 2003b). The attention focused on pay-for-performance in health care has not had parallels in population-based public health. A conceptual framework for evaluating public health system performance includes five components – macro context, mission,

structural capacity, processes, and outcomes. In this model, fiscal capacity is considered a component of overall structural capacity, but is not linked explicitly to health results (Handler, Issel, and Turnock 2001). No consensus exists regarding performance standards or measures, reporting systems, or the definition of quality improvement in public health (Landrum, Beitsch, et al. 2008). From a management standpoint, incorporating performance measures into funding formulas raises a number of underlying questions, among them:

- Is performance assessment for prevention somehow fundamentally different than for positive outputs? When prevention is successful, disease is averted; counting non-occurrences is difficult at best, and even a metric like net improvement (a percentage decrease in prevalence, for example) is subject to a number of nontrivial methodological concerns.
- Should "poor" performers have funds withheld, or do they require additional funds (or technical assistance or human capital) to achieve program objectives? Are the contributors to poor performance within the control of the public health system?
- Should "high" performers receive bonuses, or do they need less monetary assistance? Tuberculosis funding is a cautionary tale in this regard: Following declines in illness in the first half of the 20th century, TB research and program funds were reduced as unrestricted block grant funding was redirected to other public health threats; a resurgence of the disease, fueled by the HIV/AIDS epidemic, followed (Reichman 1996; Kaufman and Parida 2007). Because well-performing states and localities tend to be those that are already better funded, with stronger infrastructures, and more developed programs, in practice, incorporating performance measures into formulas results in money begetting money, with rich states getting richer and poorer states getting poorer. To the degree that horizontal equity is an objective of intergovernmental transfers, this result is at odds with that goal, which has been seen as a fundamental objective for public spending.

From the perspective of grantees, public health funding formulas contribute to existing systemic complexities: A recent Washington state public health improvement plan identified three critical problems for the state's public health system: the lack of established financing principles and the wide variation in local-level public health investment; the complexity of funding formulas and the lack of financing flexibility in addressing changing public health priorities; and the absence of information about outcomes from public health investment (Leviss 2008). As reported by the state health department in the survey we conducted, one of the principles the review panel recommended and the state plan incorporates is that funding should have as few restrictions as possible while still maintaining accountability, specifically, "a results-based accountability system, with meaningful performance measures and program evaluation." The Washington Department of Health and each local public health agency develop a consolidated contract every five years that includes program requirements and deliverables and is amended as needed (Washington Department of Health 2008).

IMPLICATIONS FOR PUBLIC HEALTH PRACTICE

Public health spending remains an exceedingly small portion of overall U.S. health spending, as shown in Exhibit 10 (page 100). Around 3% of national health expenditures are directed to public health (Centers for Medicare and Medicaid Services 2009; Beitsch, Brooks, et al. 2006). But, on average, federal dollars make up half of state public health funding and, as a result of their prominence in state and local budgets, exert *de facto* control over priorities, programs, and policies. Congressional mandates and funding agency regulations exert *de jure* control over state and local grantees. The majority of federal funding is categorical, impelling states and localities to organize programs around funding streams, and, in the views of some, causing service fragmentation and rescissions of funding for noncategorical activities (Leviss 2008). The goals of federal public health grants-in-aid are diverse, and include targeting specific health concerns, promoting interstate resource or service equalization, fostering program

innovation, and motivating collaboration and coordination among jurisdictions and vertically through governmental tiers. The proportion of federal funds in state and local budgets does not by itself guarantee national control over programs and the achievement of either overarching goals such as equity or even program-specific goals such as reduction in disease incidence. But the presence of federal funding serves to shift public and political attention and expectations to the national level, and may reinforce federal control as a result (Elazar 1972b).

The link between federal aid and state fiscal capacity continues to be weak. Often, money begets money, and horizontal disparities can be exacerbated by intergovernmental transfers, a concern if equity is an objective. The difference between the richest and poorest states by any number of measures is significant: In 2007, per capita income in Connecticut was $54,117; in Mississippi, $28,845 (U.S. Census Bureau 2009b). The discrepancy between the two-year (2007-2008) average median family income was even greater: $65,644 in Connecticut; $37,579 in Mississippi (U.S. Census Bureau 2009a). Not surprisingly, state public health fiscal capacity is similarly skewed: In FY2007-08, Connecticut allocated $82.10 million in state funds to public health and per capita public health spending was $23.44; Mississippi allocated $36.90 million and spent $12.64 per capita (Levi, Laurent, et al. 2009). Mississippi was 50th in national health rankings, with a high prevalence of obesity (33% of the population), a high percentage of children in poverty (24% of persons under age 18), a low high school graduation rate (36% of incoming ninth graders do not graduate within four years), a high infant mortality rate (11 deaths per 1,000 live births) and a high rate of deaths from cardiovascular disease (379 deaths per 100,000 population). In contrast, Connecticut ranked second among the 50 states for overall health, with 21% of the population obese, 10% of children in poverty, an 81% high school graduation rate, low infant mortality (6 deaths per 1,000 live births), and a cardiovascular disease death rate of 251 per 100,000 (United Health Foundation, American Public Health Association, and Partnership for Prevention 2009). Yet in FY2008 CDC provided $65.23 million to Connecticut and $58.88 million to Mississippi.

The reasons for lopsided allocations include population (Mississippi's population was 2,938,618 and Connecticut's was 3,501,252, a difference of more than 562,000, significant in Census-based formulas) but, more importantly, they result from considerable differences in funding for competitive grants and cooperative agreements. CDC directed $144,718 to Mississippi for chronic disease prevention and health promotion (aside from the PHHS block grant) but $1,825,888 to Connecticut. For infectious diseases, Mississippi was awarded $716,031 and Connecticut, $3,501,839; for injury and violence prevention, Mississippi was awarded $533,290 and Connecticut received $1,015,488 (Levi, Laurent, et al. 2009).

In the assessment of Assistant Surgeon General Joseph Mountin, federal public health grants-in-aid authorized by the Social Security Act worked toward four purposes: establishing a working partnership of federal, state, and local governments; enabling concentrated attacks on specific health problems; preserving local autonomy and initiative while strengthening local services; and equalizing state and local governments' ability to provide services. Writing in 1952, Mountin was able to cite positive examples of each of these outcomes, just seventeen years after passage of the act – with the notable exception of equalization across jurisdictions. Many small political subdivisions served areas too small for economical administration or comprehensive services and had serious staffing deficiencies, even with the infusion of federal cash to support programs (Mountin 1952). More than half a century later and billions of federal dollars later, fiscal equalization has not been realized and service equity remains elusive. According to the IOM, the variability of access to and type of public health services across states, coupled with the inconsistency of organizational arrangements, suggest that "public health is defined less by what public health professionals know how to do than by what the political system in a given area decides is appropriate or feasible" (Institute of Medicine 1988, 4)

One of the most vexing equity questions about any intergovernmental transfer is "Whose equity?" Because public health services are government financed, a tension exists between beneficiary equity and taxpayer equity. The recipients of many categorical public health services

are often lower income populations. Even those public health services that are truly population-based, for example, environmental health and sanitation services or general health promotion campaigns, may disproportionately benefit lower income populations. For example, environmental and sanitation campaigns directed at mosquito control benefit the overall population, but because poor populations typically suffer disproportionate impacts of health effects seen across populations, lower income residents may benefit disproportionately. Allocating funds according to beneficiary equity requires dollars to be distributed so that each grantee is able to purchase a comparable level of services for the target population – e.g., the number of cases and the cost of providing services. Taxpayer equity, on the other hand, considers the degree to which grantees are able to finance a comparable level of services with comparable burdens on their taxpayers. Poor populations pay a disproportionately greater share of their income in federal, state, and local taxes than do taxpayers with higher incomes (Piketty and Saez 2007; Moore 2007). To the degree that poor populations disproportionately finance and benefit from governmental public health services, public health financing may be a classic case of robbing Peter to pay Paul. As GAO has concluded, "A formula for allocating funds could meet either the beneficiary equity criterion or the taxpayer equity criterion. No formula, however, is likely to completely satisfy both criteria simultaneously" (General Accounting Office 1995c). Stated or not, justice is seen as a central to, if not *the*, mission of public health (Gostin and Powers 2006). Justice requires a fair balancing of burdens and benefits. Thus, from the standpoint of both pragmatic politics and ethical practice, public health managers must strive to balance the impact of unequal burdens and benefits: the poor pay a larger share of their income in taxes, are disparately affected by disease and disability, and may disproportionately benefit from governmental public health programs. Relying on formulas to address those essential concerns demands too much of them.

Although funding formulas are thought to be more reasonable and fair than other allocation strategies, they are strongly shaped by social constructions of target populations and

beliefs about science and facts, by political dynamics, and by American federalism, both fiscal and functional, which structures public health financing choices, including how and how much revenue is raised, allocated, and transferred, and public health programs and outputs. Federalism fragments the public health infrastructure, explaining America's lack of a comprehensive health policy aligning health sector investment, governmental public health agency structure and function, and incentives for the private sector to work more effectively as part of a broader public health system (Institute of Medicine 2003b). And, as a consequence, public health – with the exception of specific risks, such as HIV/AIDS or novel influenza strains – has never been a public or political priority. Two factors chiefly determine whether and how public health problems are addressed: scientific knowledge and public opinion (and, thus, political support), which is shaped in varying degrees by evidence and values (Institute of Medicine 1988). Public perceptions of a problem, its severity, responsibility for it, potential solutions, and affected populations influence the acceptance of government action and political and fiscal support for government involvement.

Heightened public and political interest in and expectations for public health following 9/11 have not yet resulted in significantly greater congressional support or systematic reform of the nation's public health infrastructure. Public health has been slow to recognize that "[s]cience can identify solutions to pressing public health problems, but only politics can turn most of those solutions into reality" (Oliver 2006). The new challenges in public health, ranging from preparedness to chronic illness, require policies that reduce the constraints of our federalist system on public health financing and functioning (Salinsky and Gursky 2006).

Exhibits

Exhibit 1: Federal-Level Government Initiatives Addressing Childhood Obesity

Department	Agency	Program(s)
Agriculture	Food and Nutrition Service	Food Stamp Program or Supplemental Nutrition Assistance Program (SNAP)
		National School Lunch Program
		School Breakfast Program
		Child and Adult Care Food Program
		Special Supplemental Food Program for Women, Infants and Children (WIC)
		Commodity Distribution Programs
	U.S. Forest Service	Kids in the Woods funding
		National campaign targeting children 8 to 12 and their parents, includes TV, radio, outdoor and Web-based PSAs
Defense	TriCare (health insurance)	Web-based tool; mailers to members
	Education Activity (DoDEA)	Education programs for children of military and civilian personnel stationed at domestic and international bases
Education		Carol M. White Physical Education Program (PEP Grants)
		"Fueled and Fit: Ready to Learn" campaign to highlight the research-based connection between proper physical fitness, nutrition, and student achievement
		Surveillance, data collection on food in schools, physical activity
Environmental Protection Agency	National Ctr for Environmental Research	Growing Up Healthy in East Harlem (community-based participatory research)
		Inner City Toxicants and Neurodevelopment in Urban Children
		Research Project on Asthma: Prenatal and Postnatal Urban Pollutants and Childhood Asthma
		Children's Environmental Health Centers
		Pesticides, Endocrine Disruptors, Childhood Growth and Development
		Human Health Research Program: Long-Term Goals 2-09 and 3-07
	Urban Environmental Program in New England	Healthy Communities grant program

Health and Human Services	Administration for Children and Families	Head Start Improvement of Head Start Playgrounds
	Agency for Healthcare Research and Quality	Max's Magical Delivery: Fit for Kids an interactive DVD on obesity, nutrition, and physical activity targeted to children ages 5-9 and their families
		Sponsored research: poverty, diet, and poor growth
		Evidence reports: management of childhood obesity (various)
	CDC/National Center for Chronic Disease Prevention and Health Promotion	Division of Adult and Community Health/Healthy Communities Program
		Division of Adult and Community Health/REACH Program
		Division of Adult and Community Health/ACHIEVE Program
		Division of Adult and Community Health/Strategic Alliance for Health
		Division of Adult and Community Health/Steps Program
		Division of Adult and Community Health/Pioneering Healthier Communities
		Division of Nutrition, Physical Activity, and Obesity
		Division of Adolescent and School Health/Make a Difference at Your School
		Division of Adolescent and School Health/Data collection and surveillance
		Division of Adolescent and School Health/Physical activity promotion, including curriculum assessment tool (PECAT)
		Division of Adolescent and School Health/School Health Index: A Self-Assessment and Planning Guide
	CDC/National Center for Health Statistics	National data collection, surveillance, analysis
	Food and Drug Administration	Regulates food and dietary supplements
		Nutrition Facts Labels to Make Healthy Food Choices
		Make Your Calories Count initiative
	Health Resources & Services Administration	Maternal and Child Health Bureau/Funded study on state policies' effects on childhood obesity
		Focus of primary care; best practices dissemination
		Delta States Rural Development focus

	Indian Health Service	Division of Diabetes Treatment and Prevention/ Special Diabetes Program for Indians
		Training programs, best practices for prevention and mitigation
		Division of Health Promotion and Disease Prevention/ primary prevention special focus area
	National Institutes for Health	We Can! (Ways to Enhance Children's Activity and Nutrition)
		Media-Smart Youth: Eat, Think, and Be Active!
		Extramural Research – various
		National Collaborative on Childhood Obesity Research (NCCOR)
	President's Council on Physical Fitness and Sports	National Fitness Challenge in schools; awareness; promotion
	Surgeon General	Call to Action on Childhood Obesity
		Childhood Overweight and Obesity Prevention Initiative/ Healthy Youth for a Healthy Future
Interior	Bureau of Land Management	Take It Outside Initiative
	Fish and Wildlife Service	Various programs focused on "Nature Deficit Disorder"
	National Park Service	Blue Ridge Parkway childhood obesity initiative
		Technical assistance for funding through the Rivers, Trails, and Conservation Assistance Program
	National Park Foundation	Healthy Parks/Healthy Living
		Land and Water Conservation Fund (LWCF)
Transportation	Federal Highway Administration	Safe Routes to School program (SRTS)
		Transportation Enhancements (TE)
		Pedestrian Road Show
Federal Communications Commission*		Rules stipulate children's educational/informational programming and limit commercial messages
		Task Force on the Media and Childhood Obesity

Sources: Department and Agency websites [search term: childhood obesity]; November 2009.
*The Federal Communications Commission (FCC) is an independent U.S. government agency.

Exhibit 2: Health Provisions of the 1935 Social Security Act (Public Law 271)

PROVISION	**MATERNAL AND CHILD HEALTH (Sections 501-505)**
Federal definition of aid Conditions for approval of state plan	Services for promoting the health of mothers and children 1. A state plan (for each type of assistance, aid, or service) must be submitted by the state to the designated Federal administrative agency for approval. 2. For old-age assistance, aid to the blind, and aid to dependent children, each of the plans must be state-wide, and, if administered by political subdivisions must be mandatory upon them. 3. Financial participation by the state must be provided in the state plan (for each type of assistance, aid, or service.) 4. A single state agency must be established or designated to administer the state plan or established or designated to supervise the administration of the state plan. 5. Methods of administration (other than those relating to selection, tenure, and compensation of personnel) necessary for the efficient operation of the plan. 6. Reports must be submitted in such form and containing such information as may be from time to time required by the designated Federal administrative agency. 7. Provide for the extension and improvement of local maternal and child-health services administered by local child-health units. 8. Provide for cooperation with medical, nursing, and welfare groups and organizations. 9. Provide for development of demonstration services in needy areas and among groups in special need.
Amount of federal grant	$20,000 to each state; and $1,800,000 distributed to the states in proportion to live births; and $980,000 distributed on basis of state financial need, taking into consideration number of live births in state
State financial participation	Amount equal to federal payment to state exclusive of allotment on basis of need
Method for allotments	Allotments made for each quarter on the basis of estimated state expenditures and appropriations, and investigations by the appropriate federal agency. Payments made to the state (at time or times fixed by the designated federal agency) by the Secretary of the Treasury (through Disbursement Division) prior to audit or settlement by the General Accounting Office. Unspent funds could be carried over to the succeeding fiscal year, and states could not draw down funds until all preceding FY funds were spent.
Suspension of federal grant	In the case of an approved plan that the Secretary of Labor finds fails to comply substantially in the administration of the plan (after reasonable notice and opportunity for hearing) payments will be ended.
Federal appropriation (FY36)	$3,800,000
PROVISION	**PUBLIC HEALTH (Sections 601-603)**
Federal definition of aid	To assist states in establishing and maintaining adequate public health services (specified: disease investigations and sanitation problems), including training personnel for state and local health work; and for pay, allowances, and traveling expenses Public Health Service (PHS) personnel, including commissioned officers, engaged in such investigations or detailed to cooperate with the health authorities of any state with this provision: no PHS personnel shall be detailed to cooperate with state health authorities except at the request of the proper state authorities

Conditions for approval of state plan	Monies paid to any state must be used solely for establishing and maintaining adequate public health services as above and in accordance with plans presented by the state health authority to the PHS
Amount of federal grant	$8,000,000 distributed to the states on the basis of (1) population, (2) special health problems, (3) state financial needs
State financial participation	Not specified in act
Method of allotments	Allotments made each quarter after conference with state health authorities
Suspension of federal grant	Not specified in act
Federal appropriation (FY36)	$8,000,000

Source: Social Security Administration, http://www.socialsecurity.gov/history/1935table.html; http://www.socialsecurity.gov/history/35actv.html#Part1; and http://www.socialsecurity.gov/history/35actvi.html.

Notes: Shortly after enactment of the Social Security law, the Social Security Board published a set of three charts summarizing the major features of the new law. The first chart contained a summary of Titles II and VIII of the Act (the Social Security program and taxing provisions of the law intended to fund it). The second summarized the Title III Unemployment Compensation program and the corresponding taxing provisions for Unemployment Insurance (Title IX). The third summarized the remaining seven programs created under the act, all of which were in the form of grants to the states to provide these programs. This table is derived from the third chart, excerpting the health provisions in Title V (maternal and child health) and Title VI (public health).

Exhibit 3: Trends in Federal Grants to State and Local Governments for Non-Defense Services, Outlays in Billions of Dollars, Selected Years, 1965-2008

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2006	2007	2008
Function													
Natural res and env	0.1	0.2	0.4	2.4	5.4	4.1	3.7	4.0	4.6	5.9	6.1	5.9	5.6
Agriculture	0.2	0.5	0.6	0.4	0.6	2.4	1.3	0.8	0.7	0.9	0.7	0.8	0.8
Transport	3.0	4.1	4.6	5.9	13.0	17.0	19.2	25.8	32.2	43.4	46.7	49.6	52.5
Community and reg dev	0.1	0.6	1.8	2.8	6.5	5.2	5.0	7.2	8.7	20.2	21.3	18.9	16.5
Educ, trng, emplymt, & social svcs	0.5	1.1	6.4	12.1	21.9	17.1	21.8	30.9	36.7	57.2	60.5	61.6	56.7
Health	**0.2**	**0.6**	**3.8**	**8.8**	**15.8**	**24.5**	**43.9**	**93.6**	**124.8**	**197.8**	**197.3**	**208.9**	**219.0**
Income security	2.6	3.5	5.8	9.4	18.5	27.9	36.8	58.4	68.7	90.9	89.8	91.8	92.5
Adm of Justice	.....	.....	*	0.7	0.5	0.1	0.6	1.2	5.3	4.8	5.0	4.3	3.8
Genl govt	0.2	0.2	0.5	7.1	8.6	6.8	2.3	2.3	2.1	4.4	3.9	3.7	3.5
Other	*	0.1	0.1	0.2	0.7	0.8	0.8	0.8	2.1	2.6	2.8	3.3	3.1
Total	7.0	10.9	24.1	49.8	91.4	105.9	135.3	225.0	285.9	428.0	434.1	448.8	454.0
Discretionary													
amount	N/	2.9	10.2	21.0	53.3	55.5	63.3	94.0	116.7	181.7	186.1	185.8	182.2
percent^	A	27	42	42	58	52	47	42	41	42	43	41	40
Mandatory													
amount		8.0	13.9	28.8	38.1	50.4	72.0	131.0	169.2	246.3	248.0	263	271.8
percent^	N/A	73	58	58	42	48	53	58	59	58	57	59	60
Total	7.0	10.9	24.1	49.8	91.4	105.9	135.3	225.0	285.9	428.0	434.1	448.8	454.0
Grants as a percent of:													
Total Federal outlays	7.6	9.2	12.3	15.0	15.5	11.2	10.8	14.8	16.0	17.3	16.3	16.1	15.6
Domestic programs#	18.0	18.3	23.2	21.7	22.2	18.2	17.1	21.6	22.0	23.4	22.4	22.2	21.8
State & local expend	14.8	15.5	20.1	24.0	27.4	22.0	18.9	22.8	22.2	24.3	23.3	N/A	N/A
GDP	1.4	1.6	2.4	3.2	3.4	2.6	2.4	3.1	2.9	3.5	3.3	3.3	3.1

Source: Office of Management and Budget. Budget of the United States Government Fiscal Year 2009: Analytical Perspectives. 2008. Aid to State and Local Governments, Table 8-3, page 113.

Notes: Health category includes Medicare, Medicaid, SCHIP (CMS), Ryan White, Maternal Child Health, Community Health Centers (HRSA), and CDC; N/A: Not Available, *$50M or less; # Excludes national defense, international affairs, net interest, and undistributed offsetting receipts; ^author's calculation based on OMB data.

Exhibit 4: Centers for Disease Control and Prevention Formula-Based Grants, Fiscal Year 2009

Program	Amount	Description of Formula
Preventive Health and Health Services (PHHS) Block Grant*		Formula based on population using 2000 Census data per statute (PL 101-531).
PHHS Allotment	$84,651,300	
Sex Offense Set-Aside	$7,000,000	
PHHS Total	**$91,651,300**	
Public Health Emergency Preparedness (PHEP)		
Base	$396,683,835	Formula based on population and is derived using 2006 Census data.
Cities Readiness Initiative	$58,531,713	Formula for state awardees and 4 directly funded cities (Washington DC, Chicago, New York City, and Los Angeles): $0.3189 per capita using Census 2006 population estimates. Exceptions: 1) Project areas that would have received <$200,000 based on the formula were increased to at least $200,000; 2) Project areas that would have received a ≥25% reduction based on the formula were allocated ≥75% of previous funding levels.
PHEP Total	**$455,215,548**	
Public Health Emergency Response (PHER)		
Phase 1	$260,000,000	Formula is based on population and is derived using 2006 Census data.
Phase 2	$164,000,000	
Phase 3	$736,500,000	
PHER Total	**$1,160,500,000**	

Supplemental ARRA Funding		
Component 1: Statewide Policy and Environmental Change	$45,000,000	Awards range from $300,000 to $2,000,000 for the 24-month project period based on a formula that includes a base of $300,000 and a per capita amount of $0.11 using Census data as of July 2008.
Component 3: Tobacco Cessation	$44,500,000	State maximums calculated using a base of $400,000 plus a per-smoker amount of $0.548 based on data from the 2008 Behavioral Risk Factor Surveillance System (BRFSS).
ARRA Total	**$89,500,000**	
Tuberculosis Prevention and Control	$93,114,942	Formula mandated by statute (PL 110-392) includes incidence and case complexity.
Comprehensive STD Prevention Services	**$18,824,563**	For High Morbidity Areas, defined by case reports: If a jurisdiction reports >100 primary and secondary syphilis cases in a calendar year or has a P&S case rate of ≥2.2/100,000 population with a minimum of 60 P&S cases.
Rape Prevention and Education Program	**$39,000,000**	Formula derived by population in all states and territories.
Grand Total	**$1,947,806,353**	This represents approximately 43% of total funding for grants and cooperative agreements.

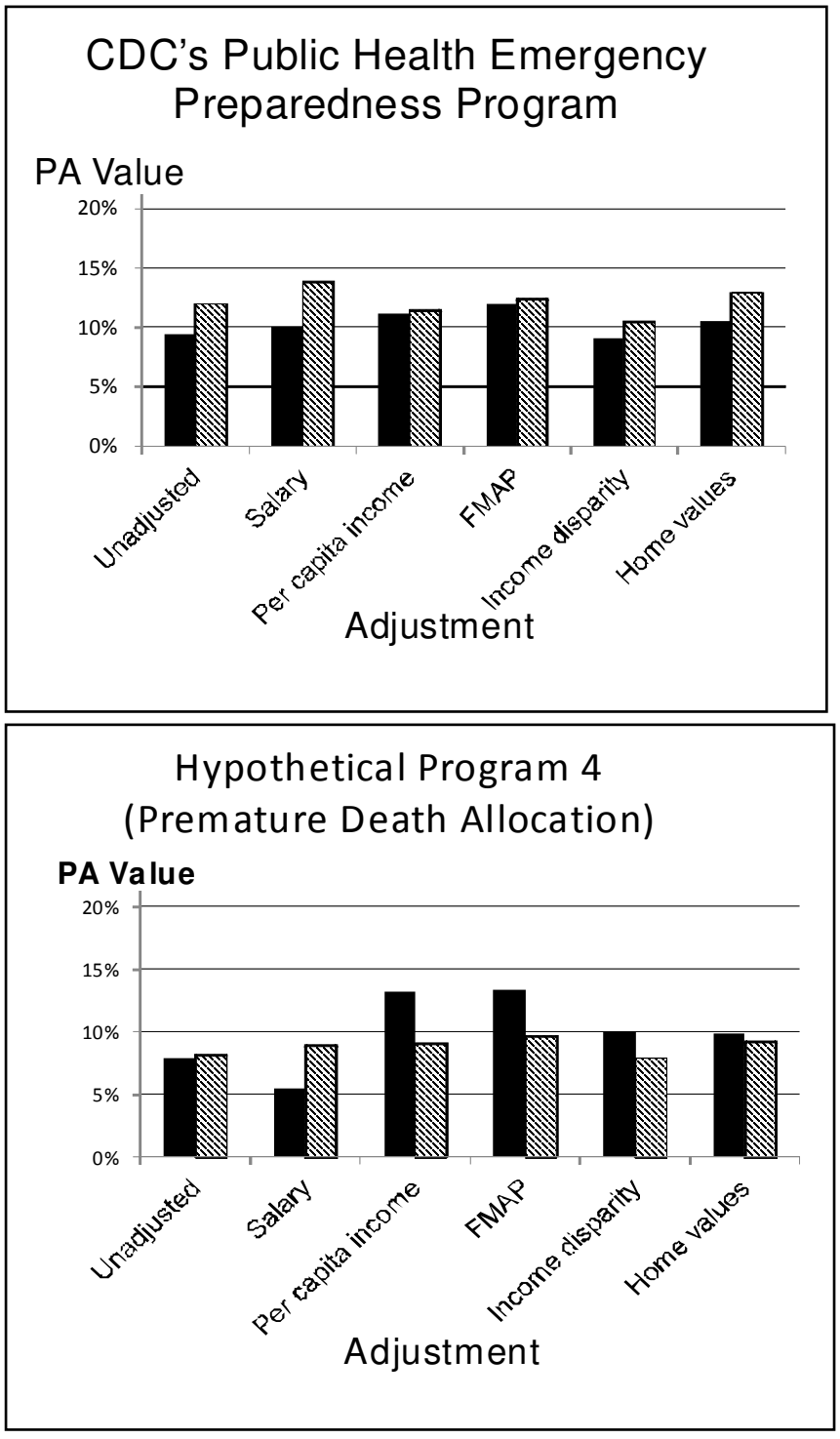
Source: Centers for Disease Control and Prevention, Procurement and Grants Office, November 18, 2009.
*PHHS Block Grant is mandatory; others are discretionary.

Exhibit 5: Example Adjustors and Effects on Proportionality of Allocation

Measures of Need Based on Each State's Percent of U.S. Total	Alternative Allocation Models Expressed as Each State's Percent of U.S. Total	Adjustors Based on Need Expressed as a Ratio of State value/U.S. value
Existing Programs • CDC's Public Health Emergency Preparedness (base plus per capita) • CDC's Pandemic Influenza Planning (base plus per capita) • CDC's Preventive Health & Health Services Block Grant (per capita) • HRSA: Title V MCH program (number of live births plus per capita) Hypothetical Programs • P1: Base-plus: 20% divided equally, 80% based on population • P2: Number of smokers • P3: Number with hypertension • P4: Number of deaths <65 years (premature mortality)	• 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)	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

Source: Buehler, J. W., P. M. Bernet, and L. L. Ogden [in revision]. Informing the Design of Allocation Funding Formulas in Public Health Programs. To be submitted to the *Journal of Policy Analysis and Management*, 2010.

Exhibit 6: Federal Public Health Funding Formula Allocations: An Examination of Current and Hypothetical Allocations and Adjustors



Source: Buehler J. W., P. M. Bernet, and L. L. Ogden [in revision]. Informing the Design of Allocation Funding Formulas in Public Health Programs. To be submitted to the *Journal of Policy Analysis and Management*, 2010.

Exhibit 7: State and Local Public Health Responsibilities

Services State Health Agencies Perform Directly	Services Overseen Through Grants and Contracts
• Childhood vaccine order management and inventory distribution • Maintenance of childhood immunization registry • Laboratory testing for likely bioterrorism agents • Data collection and analysis • Vital records and databases on morbidity and reportable diseases • Epidemiology and surveillance activities on injuries, chronic diseases, and communicable diseases • Perinatal events or risk factors • Tobacco control and prevention • Food safety education • Bioterrorism event response • Communicable disease outbreak response	• Screening and prevention for HIV/AIDS • Laboratory testing for foodborne illness • Newborn screening • Maintenance of cancer registries • Services for children with special health needs • Data collection and analysis for behavioral risk factors • Cancer epidemiology and surveillance • Environmental health epidemiology • Injury control and prevention • Obesity prevention • Sexually transmitted disease counseling and partner notification • Access to care for minority populations

Source: Association of State and Territorial Health Officials (ASTHO) (2009). ASTHO Profile of State Public Health, Volume 1. Washington, D.C.: ASTHO.

Exhibit 8: State Public Health Program Areas Funded Through Formula Allocations

Program Area	Responses (N)	%
Maternal and child health services	21	66
Core (noncategorical) public health funding	19	59
Immunizations	15	47
Treatment for communicable diseases	10	31
Other clinical services, including cancer screening and treatment, STDs, & TB	11	34
Population-based primary prevention services	11	34
Disease screening	9	28
Preparedness, including H1N1	9	28
Epidemiology and surveillance activities	6	19
Regulation, inspection, and licensing activities	6	19
Other environmental health activities	6	19
Treatment for chronic diseases	5	16

Notes:
Source: Survey of state health department chief financial officers conducted in collaboration with the Association of State and Territorial Health Officials (ASTHO), November 18-December 28, 2009. Sample: 39 states and the District of Columbia.

Exhibit 9: States' Use of Funding Formulas Is Associated with Federal Funding and Local Health Agencies

Variable	β-Coefficient	Std. Error	P>|z|	[95% CI]
Federal Funding (0-24.9%)	0.09	0.63	0.892	[-1.15, 1.32]
Federal Funding (25-49.9%)	-0.04	0.71	0.955	[-1.42, 1.34]
Local Health Agencies (1-49)	2.48	0.79	0.002***	[.92, 4.03]
Local Health Agencies (50-99)	1.73	0.74	.02*	[.29, 3.17]
Local Health Agencies (100+)	1.65	0.92	0.07*	[-.15, 3.44]

Notes: Probit regression model: dependent variable is funding formula use (0,1). Federal funding level of 0-25% (N = 10) and local health agencies (set at 0; N = 6) used as the reference points for each category.

***p<.10 **p<.05 ***p<.01**

Predicted probability of using a funding formula based on level of federal funding

		Probability for Outcome	
Ideal Type	**N**	**Use Formulas**	**No Formula Use**
Federal Funding (0-24.9%)	10	0.78	0.22
Federal Funding (25-49.9%)	20	0.81	0.09
Federal Funding (50-74.9%)	10	0.77	0.38
Federal Funding (75-100%)	0	0	0

Predicted probability of using a funding formula based on total number of local health agencies

		Probability for Outcome	
Ideal Type	**N**	**Use Formulas**	**No Formula Use**
Local Health Agencies (0)	6	0.17	0.87
Local Health Agencies (1-49)	16	0.94	0.02
Local Health Agencies (50-99)	14	0.78	0.17
Local Health Agencies (100+)	0	1.00	0

Source: Survey of state health department chief financial officers conducted in collaboration with the Association of State and Territorial Health Officials (ASTHO), November 18-December 28, 2009. Sample: 39 states and the District of Columbia.

Exhibit 10: Public Health Spending as a Portion of National Health Expenditures, Selected Years, 1960-2007 (Levels in Millions)

	1960	1970	1980	1990	2000	2005	2007
National Health Expenditures	27,534	74,894	253,373	714,127	1,353,187	1,980,603	2,241,208
Federal Public Health Expenditures	102	594	1,235	2,259	5,071	9,148	9,670
State and Local Public Health Expenditures	315	799	5,199	17,701	38,317	47,411	9,670
Public Health Expenditures as % of NHE*	1.51	1.86	2.54	2.80	3.21	2.86	0.86
Ratio of Federal to State and Local Public Health Expenditures*	1:3	1:1	1:4	1:8	1:8	1:5	1:1

Notes: As defined by CMS, the category of Government Public Health Activities encompasses publicly provided health services such as epidemiological surveillance, inoculations, immunization/vaccination services, disease prevention programs, the operation of public health laboratories, and other such functions. Funding for health research and government purchases of medical structures and equipment are reported in their respective categories. Government spending for public works, environmental functions (air and water pollution abatement, sanitation and sewage treatment, water supplies, and so on), emergency planning and other such functions are not included in the NHE, although these activities are commonly considered part of state and local public health responsibilities. Because of this, the numbers reported in the NHE understate actual public health spending in the United States. HHS agencies included in this category are CDC and FDA, as well as expenditures from The Public Health and Social Services Emergency Fund, a part of the HHS Departmental Management Budget; this category also includes the Department of Homeland Security. Federal payments to State and local governments are deducted to avoid double counting, as are expenditures made through the Maternal and Child Health Program and the Crippled Children's Program. Disbursements made by State and local government departments for environmental functions (water and sewer authorities, for example) are not included. *Author's calculations based on CMS data.

Source: Centers for Medicare and Medicaid Services, National Health Expenditures by Type and Source of Funds, CY1960-2007. (http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage).

Appendix:

Survey of State Health Department Chief Financial Officers: Methodology and Instrument

SURVEY OF STATE HEALTH DEPARTMENT CHIEF FINANCIAL OFFICERS: METHODS

With guidance from staff at the Association of State and Territorial Health Officials (ASTHO), we developed an online survey instrument to collect data on states' use of funding formulas for public health allocations. ASTHO is the national non-profit organization representing the public health agencies of the United States, the U.S. Territories, and the District of Columbia; its members are the chief health officials of these jurisdictions. ASTHO's mission is to assist state health agencies to develop and implement programs and policies in public health priority areas. ASTHO participates in a number of grants, contracts, and cooperative agreements with federal agencies and receives foundation support to collect information from jurisdictions and to identify and share best practices in public health. Public health financing and distributional mechanisms are a focus area.

We sought information on state health agencies' use of funding formulas for public health activities encompassing population-based primary prevention, immunizations, disease screening and treatment, maternal and child health, preparedness, and environmental and sanitation programs. Additionally, we asked about sources of funding, formula attributes (inputs, adjustors), and formula development (e.g., whether a formula was mandated in statute or regulation, developed by the health department, the role of stakeholders), and their assessments of political and policy considerations.

The online survey (a copy follows this section) was disseminated to state health departments' chief financial officers (CFOs) via an email message from ASTHO Executive Director Paul E. Jarris, MD, MBA, in hard copy with a link to an online survey site (Qualtrics) on November 9, 2009. Respondents were asked to complete the survey by November 24, 2009. On November 23, 2009, Dr. Jarris emailed a reminder and a deadline extension to December 1, 2009, along with another hard copy of the survey. In order to secure additional responses, on December 7, ASTHO's senior director of survey research, Katie Sellers, DrPH, sent an additional email

reminder, an offer to extend the survey deadline to December 14, and an invitation to provide survey information by phone. The online survey was conducted by structured phone interview with one state on December 14. Based on requests from several states, the survey deadline was extended to December 28. At that time, responses had been received from 39 states, the District of Columbia, and the Northern Mariana Islands territory. Preliminary results were shared with ASTHO and CFOs in a webinar held December 18, 2009.

FUNDING FORMULAS FOR PUBLIC HEALTH PROGRAM ALLOCATIONS

This survey asks about state health departments' experience with using funding formulas for public health program allocations. It is being conducted by researchers at Emory University's Rollins School of Public Health with support from the Robert Wood Johnson Foundation and with ASTHO's assistance.

Your anonymous responses will inform both research and public health practice. A written summary will be sent to you and an ASTHO-sponsored webinar is planned to discuss the results. In addition, a dedicated funding formulas website currently in development. The website will feature a formula tool that will allow users to plug in their own data and develop formulas they can test for sensitivity and usability in their jurisdictions.

This survey could take as little as 5 minutes (if your department does not use funding formulas) or possibly as long as 60 minutes (estimated), if your department uses formulas extensively and if you choose to answer all the open-ended questions. Please note that study staff are happy to follow up this survey with a phone call if that is more convenient for you than answering open-ended questions online. The survey is designed to eliminate questions that are unnecessary, depending on your state's experience with funding formulas. Any feedback you have on the survey content or construction is very welcome, and we have left space at the end for your comments.

Thank you for your candid answers to our questions.

1. Does your health department currently use formulas to allocate funds among areas (e.g., counties, regions) within the state for any public health programs– for example, to make determinations regarding what share of funds different regions should receive for activities such as core public health services, maternal and child health, STD/HIV prevention, TB control, obesity and tobacco use prevention? Check one:

1	Yes, currently use for ongoing programs
2	Yes, but intermittently (for example, used recently but discontinued; would use if we had one-time funding)
3	Not now, but we are actively planning to use for specific program(s)
4	No (and do not plan to)

2. If yes or not now, for which programs or funding streams, with the exception of Medicaid and SCHIP? Check all that apply: For each program checked, you will be asked a series of clarifying questions about formula development and use.

1	Core (noncategorical) public health funding
2	Immunizations
3	Disease screening
4	Treatment for communicable diseases
5	Treatment for chronic diseases
6	Maternal and child health services
7	Other clinical services (enter below):
8	Epidemiology and surveillance activities
9	Population-based primary prevention services
10	Regulation, inspection, and licensing activities
11	Other environmental health activities
12	Other public health activities (enter below):

3. If your department does not use formulas now or plan to, have formulas been used in the past? Check one:

1	Yes
2	No

4. If formulas were used in the past, for which program(s). Check all that apply:

1	Core (noncategorical) public health funding
2	Immunizations
3	Disease screening
4	Treatment for communicable diseases
5	Treatment for chronic diseases
6	Maternal and child health services
7	Other clinical services (enter below):
8	Epidemiology and surveillance activities
9	Population-based primary prevention services
10	Regulation, inspection, and licensing activities
11	Other environmental health activities
12	Other public health activities (enter below):

5. Why did your department stop using formulas for funding decisions? Check all that apply.

1	Changes in scope of program (program contracted)
2	Changes in mandate for program (program redirected)
3	Changes in funding level (funding reduced or eliminated)
4	Other (enter below):

6. Why does your health department not use funding formulas? Check all that apply:

1	Robust data for formula development are not readily available
2	Formulas are perceived as inflexible, if program scope, funding, etc., change
3	Staff experience with formulas has been negative in the past
4	Staff inexperienced with formulas so we were reluctant to experiment
5	Other (enter below):

7. Has an existing public health funding allocation formula ever been changed?

1	Yes
2	No

8. If an existing funding formula was changed, why? Check all that apply.

1	Changes in scope of program (program need grew)
2	Changes in scope of program (program need shrank)
3	Changes in mandate for program (program redirected)
4	Changes in funding level (funding grew)
5	Changes in funding level (funding shrank)
6	Other (enter below):

9. If an existing funding formula was changed, please briefly describe the process of change (for example, whether you consulted with stakeholders) and how you coped with gains or losses for previously funded areas. IMPORTANT NOTE: If you prefer to answer this and/or any following open-ended questions by phone, please enter "call," and we will follow up at a convenient time.

10. For each program (1-12, above) funding source(s). Check all that apply.

1	State taxes
2	Fees
31	Voluntary contributions
50	Federal funds
59	Other (enter below):

11. Jurisdiction of funded areas. Check all that apply.

1	Statewide
2	County
3	Multicounty region or district
4	Metro area
5	Other (enter below)

12. Data Sources (describe below):

13. Description of calculation, including baseline funding (describe below):

14. Other formula attributes. Check all that apply.

1	Hold-harmless provision
2	Threshold to receive funding
3	Funding cap
4	Competitive award
5	Other (enter below):

15. Is this formula specified legally?

1	Yes
2	No

16. If the formula is specified legally, in what? Check all that apply.

1	State law
2	State regulation
3	Other (enter below)

17. If the funding formula was developed by the health department, please briefly describe the role of the state legislature below. IMPORTANT NOTE: If you prefer to answer this and/or the following open-ended questions by phone, please enter "call," and we will follow up at a convenient time.

18. If the funding formula was developed by the health department, please briefly describe the role of stakeholders below:

19. If the funding formula was developed by the health department, please briefly describe the role of department staff below:

20. Please briefly describe any past or current political or policy concerns:

21. What is your state? (drop down menu)

22. Please enter any comments you'd like to share anonymously about funding formulas or this survey below:

23. Please enter your contact information below in case we need to reach you for any clarifying questions. Your answers on the survey and any additional information you provide are not for attribution.

THANK YOU FOR PARTICIPATING IN THIS SURVEY!
YOUR INSIGHTS ARE INVALUABLE AS WE WORK TO BETTER UNDERSTAND HOW FUNDING FORMULAS ARE USED IN PUBLIC HEALTH.

Lydia Ogden is the lead Emory researcher for this survey. If you would like to contact her for any reason, she can be reached at the following:

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PUNCTUATION MARKS:
CAN PUNCTUATED EQUILIBRIUM EXPLAIN HEALTH ENTITLEMENT BUDGETING IN THE UNITED STATES?

ABSTRACT

In 2008, expenditures for Medicare totaled $469 billion and for Medicaid, $345 billion, with a federal-state split of 59-41. Health entitlements amounted to 21% of the president's fiscal year 2008 budget request. Medicaid is now the largest or second largest item in every state budget, accounting, on average, for nearly 21% of state spending. Explicating the policy and political inputs that drive such large expenditures is critical to understanding how they might be controlled. Punctuated equilibrium (PE) has been embraced by political scientists as an explanatory framework for governmental policy change, particularly budgetary variation. We applied PE to Medicare and Medicaid expenditures over four decades to test its explanatory power for entitlement programs. Our results provoke questions about PE's utility in explaining mandatory spending.

INTRODUCTION

Lasswell famously described politics as who gets what, when, and how and Key similarly explained budgeting as deciding whether to allocate X resources to activity A over activity B (Lasswell 1936; Key 1940). At its most fundamental, public budgeting is just that straightforward. The fiscal end of rows and columns may be simple, but the means – the policy process and politics achieving that end – are not.

In 2008, U.S. national health spending reached $2.3 trillion. Expenditures by federal, state, and local governments accounted for nearly 48% of the total ($1.1 trillion) (Centers for Medicare and Medicaid Services 2010a). Medicare spending was $469 billion and Medicaid expenditures ran to $345 billion, with a federal-state split of 59-41. Health spending amounted to nearly 36% of federal receipts, up from 28% in 2007. The increase resulted from three factors: the drop in tax revenue due to the recession, changes to the tax code from the Economic Stimulus Act of 2008, and increases in the Federal Medical Assistance Percentage (FMAP)[1] (Hartman et al. 2010). Medicaid is now the largest or second largest item in every state budget, accounting, on average, for 20.7% of state spending, just behind elementary and secondary education at 21.6% (National Association of State Budget Officers 2009a). Nearly a quarter (24%) of all state and local government receipts go to health spending, a proportion unchanged from 2007 to 2008 because the American Recovery and Reinvestment Act (ARRA) authorized approximately

[1] The FMAP, which structures the federal government's contribution to Medicaid spending, was created when Medicaid became law in 1965. The statute establishes a minimum FMAP of 50% for states and stipulates that no state shall bear more than 50% of total costs, regardless of the result of applying the formula. It is designed to pay a higher FMAP to states with lower per capita income relative to the national average, and a lower FMAP to states with higher per capita income relative to the national average. The FMAP is adjusted annually and reflects yearly changes in states' economies. The state share equals the square of a state's per capita income divided by the square of U.S. per capita income, multiplied by 0.45. The state multiplier of 0.45 ensures that states with average per capita income receive a federal share of 55%. With an FMAP of 50%, for every $1 a state spends on Medicaid, the federal government contributes $1; with an FMAP of 75%, the federal contribution is $3 per $1 in state funds. There is no lower or upper limit on state matching funds; that is, whatever amount a state government decides to spend, the FMAP dictates the national government's contribution. When a state cuts Medicaid spending, it reduces its federal share: A state with an FMAP of 75%, for example, will lose $3 in federal support for every $1 in state funding cut, for a total reduction in Medicaid spending of $4.

$7 billion in additional funds for the enhanced FMAP and lowered the state share of Medicaid spending. Total federal and state Medicaid spending increased 4.7% in 2008, slowing from 6.1% growth in 2007. This was the slowest rate of increase since 1997 (excluding 2006, when Medicare Part D caused Medicaid growth to decline and Medicare growth to accelerate). Even as Medicaid spending growth slowed, enrollment grew 2.6%, concurrent with increases in unemployment, and up from 0.7% in 2007. Federal Medicaid spending increased 8.4% in 2008, the highest rate of growth since 2003 and state spending declined by 0.1%, the first decline in these expenditures in program history (Hartman et al. 2010). The derivation of those numbers is the subject of this paper.

EXPLAINING U.S. HEALTH ENTITLEMENT POLICY

In the U.S., health policy complexity arises from the intersection of several factors:

- The range of policy actors is large, including consumer and provider interest groups, elected and appointed policymakers and administrative agency staff at every level of government, academic researchers, and the media.
- The lag time between policy iterations and their effects may span decades. For example, the individual-level behavioral effects of increasing beneficiary cost sharing in Medicare may be seen relatively quickly, in the form of reduced utilization, but the downstream health effects – e.g., increases in hypertension resulting from missed medication – and subsequent individual health, population health, and system-wide fiscal consequences may not be seen for years.
- Political actors tend to focus on short-term consequences, particularly electoral effects, rather than long-horizon outcomes. As David Stockman notably commented about fixing Social Security in 1980, “I'm just not going to spend a lot of political capital solving some other guy's problem in 2010” (Greider 1981).

- Highly technical information, coupled with estimation uncertainty, such as the structural effects of reductions in the Medicare sustainable growth rate (SGR) formula, further complicate health policy development.
- Deeply held values – for example, views on the right to health care and the appropriateness and necessity of government involvement in the health care market – differ within and between the two dominant political parties.
- Finally, significant public and private outlays are involved. National health spending accounted for 16% of gross domestic product (GDP) in 2008. The share of public spending amounted to 6.72% of GDP.

Over and above these issue-specific policy complexifiers, the complicating effects of federalism on health policy are particularly profound and manifest in various aspects of policy and budgeting. Fiscal and regulatory arrangements may result in national policy aims overtaking state and local objectives; shared responsibility for Medicaid and the Children's Health Insurance Program (CHIP) engenders intersecting federal-state accountability and overlapping financial, regulatory, and oversight roles; and the salience of health care to voters and elected officials at every level of government makes the political stakes high. Federalism thwarts health policy uniformity and service universalism, impedes system responsiveness and policy analysis, limits large-scale innovation and, at the same time, stimulates iterative state and local policies and programs through a range of categorical grants-in-aid (Peterson 2001).

This paper applies the punctuated equilibrium (PE) framework – developed and explicated by Baumgartner and Jones (1993) and extended by them (2003, 2004, 2005a, 2005b) and others, including True (1999) – to U.S. health entitlement spending to test its explanatory power for Medicare and Medicaid (including CHIP) from 1965 through 2008. In that fiscal year (FY), Medicare and Medicaid together accounted for a fifth (20.5%, or $594.5 billion) of the President's $2.9 trillion budget request (Office of Management and Budget 2008). By 2012, public dollars are predicted to amount to more than half of all U.S. health spending (Truffer et al.

2010). Exhibit 1, page 150, shows trends in Medicare expenditures and state and federal spending on Medicaid, 1965-2018. By 2050, absent policy change, the Congressional Budget Office estimates that Medicaid and Medicare spending (net of Medicare beneficiaries' premiums) will rise to 12% of GDP and to 19% in 2082. Medicare and Medicaid are projected to account for 80% of the rise in federal spending and most of the rising federal budget deficit through 2035 (Elmendorf 2009). Significant political attention has focused on these entitlements as an imperative to restraining government spending increases. Health services researchers have analyzed spending drivers and estimated the effects of policy levers to reduce spending (e.g., Thorpe, Ogden, and Galactionova 2010). Political scientists have produced case studies of the programs' creation and subsequent iterations (e.g., Marmor 2000, Funigiello 2005, Engel 2006), but comprehensive quantitative analysis of the multiple socioeconomic and political variables that have interacted to produce annual entitlement budgets is largely missing from the literature.

APPLYING PE TO HEALTH ENTITLEMENT SPENDING

Incrementalism has been the dominant model of public budgeting for nearly half a century (Jordan 2002), originating with Wildavsky (extending Lindblom 1959). Writing just before the advent of Medicare and Medicaid, Wildavsky observed in *The Politics of the Budgetary Process* that agency budgets are almost never reviewed as a whole every year; instead, this year's budget is based on last year's budget, "with special attention given to a narrow range of increases or decreases" (Wildavsky 1964,15). Incrementalism, despite its longevity and goodness of fit with observed practice, cannot fully explain occasional sharp increases (or, even more rarely, decreases) in agency budgets. Importantly, it also does not adequately address entitlement programs (Rubin 1990), which may require significant budgetary adjustments resulting from changes in target population demographics (e.g., the "silver tsunami" of baby boomers entering Medicare) or economic constrictions that may result in larger Medicaid-eligible populations. A leading driver of increased public spending on health care in 2009 is Medicaid

enrollment growth (6.5%) and spending (9.9%), both consequences of rising unemployment resulting from the recession (Truffer et al. 2010). In fact, Wildavsky characterized indexed, open-ended entitlement programs as the operational definition of "the end of budgeting," reasoning that funding decisions "would no longer involve allocation within limited resources but only addition of one entitlement to another, all guarded against fluctuation in prices" (1978, 506).

Applications of PE to budgeting have been primarily at the federal level and have focused on aggregations of major functions (e.g., education, Social Security, defense, Medicare [line number 570], health [line number 550]) and subfunctions (e.g., community development, ground transportation, higher education). True (1995) asserts that large national budgetary shifts result from large policy shifts (e.g., the Great Society programs). His analysis of Social Security (1999), the most analogous of federal programs to health entitlement spending, concludes that the previous year's budget typically determines the current year's, but that "hidden" policy punctuations (e.g., indexing cost of living adjustments) have occurred, with budget effects. He asserts these punctuations result from periodic diversions and redirections of attention and action and predicts they will recur.

In *The Politics of Attention*, Jones and Baumgartner compare annual changes in Social Security and Medicare through 2002, observing that percentage changes have declined over time. They surmise that early increases likely reflect the programs' popularity with beneficiaries (and, unstated, politicians' desire to capitalize electorally on that popularity) and that, as programs costs rose, they were reined in. However, they also note that Medicare tends to be more volatile than does Social Security, "as a consequence of its relationship to the health care costs that are beyond the direct control of policymakers." They conclude that changes in Medicare "are explained by fundamentally unpredictable forces in the economy, whereas changes in Social Security are a function of the choices made by policymakers…" (2005b, 102-103). This conclusion does not square with the observed reality of Medicare's (and Medicaid's) political and administrative history, which includes varied and numerous policy choices ranging from the level

and type of beneficiaries' cost sharing to provider reimbursement levels to benefit design, all of which – along with nearly countless other preferences – directly affect both programs' bottom lines. Increases in Medicare spending are driven in no small part by medical technology changes (e.g., innovations in drugs and devices) and program administrators' decisions to cover novel interventions (Acemoglu, Cutler, et al. 2006). They are also driven by changes over which policymakers have little direct control – such changes in disease prevalence and definitions of treatable disease (Thorpe, Ogden, and Galactionova 2010).

Jones, Baumgartner, and True have not subjected Medicaid programming to PE analysis, nor have other scholars – though Kousser (2002) and Lee and Donlan (2009) have examined the politics of state Medicaid expenditures, using frameworks compatible with PE but not predicated on budget fluctuations. These scholars observe that state-level Democratic party control strongly influences spending. In addition, Lee and Donlan find that state fiscal capacity is a strong positive predictor of spending. Conversely, they show that need, as measured by the relative percentage of African-American, Hispanic, uninsured, and older (over age 65) residents, significantly and negatively constrains states' Medicaid spending.

PE has been extended to general examinations of state and local budgeting, with mixed results. At the local level, Jordan (2003) reviews changes across six budget functions (police, fire, sanitation, parks and recreation, public buildings, and highways) over a nearly three-decade period in 38 large cities (populations of 300,000 or more). She finds that local government budgets are punctuated, but that budgets for certain functions (police, fire, and sanitation) is more stable than for more discretionary programs (such as parks and recreation), which post budgetary decreases with greater frequency. She is unable to explicate the reasons for that instability, other than to note a possible connection to residents' demands.

Breunig and Koski find that state budgets are similarly punctuated, but to varying degrees (2006) and that institutionally strong governors can dominate budgetary agendas and block legislative initiatives, resulting in punctuations (Breunig and Koski 2009; Breunig, Koski, and

Mortensen 2009). Research by Alt and Lowry (2000), though not strictly within the PE framework, shows that state-level Democrats allocate larger shares of state incomes for public budgeting; Republicans react more strongly to budget surpluses by reducing revenues. Unified governments react both more intensely and quickly than do divided ones. Their analysis is limited to 33 non-Southern states for the period 1952-1995; it is thus uncertain whether their results would be confirmed if that region were included. Additionally, while they find strong party effects, they are unable to tease out the size effects of legislative majorities in divided governments – specifically whether veto-proof majorities matter in budgeting.

McAtee and Lowery (2005) examine changes in five attributes of state fiscal systems – total state revenue, total state expenditures, state-local tax burden as a percent of income, state debt as a proportion of state spending, and the incidence of state tax systems – for state fiscal years 1999-2002. Inconsistent with the representation literature, they find that public opinion has a uniformly negative association with predicted fiscal shifts (states with more liberal citizens were more likely to reduce total state revenues and expenditures, tax burdens, debts, and tax progressivity). Their results for party and institutional effects are generally insignificant and also incorrectly signed (Democratic governors and legislators do not influence short-term fiscal changes as predicted; powerful governors, legislative professionalism, and party control of the legislature do not significantly affect fiscal variables). They speculate that bond market ratings may constrain state fiscal discretion and have greater effects than voter preferences, party influence, and institutional attributes. Additionally, they note that states' prior experiences with fiscal downturns may have moderated policymakers' impetus to impose cut-backs during the relatively short period they examined. Put another way, the lack of party and institutional effects could be seen either as institutional learning or as institutional braking, depending on whether inaction was intentional (McAtee and Lowery 2005).

POLICY PUNCTUATIONS IN MEDICARE AND MEDICAID

A policy appendix, pages 154-157, summarizes the major changes in Medicare and Medicaid through 2008. PE assumes party politics and control matter. But when it comes to health entitlements, it is not clear just how. A review of the policy history is revealing more for its confusion regarding party roles than for its clarity.

At the time the programs passed, Democrats controlled the White House, the House (with a majority of 295), and the Senate (with a veto-proof majority of 68). Subsequently, major policy revisions with budgetary implications were undertaken by both parties, under both unified and divided governments, as well as split congresses. For example, the 1981 introduction of section 1915(b) and 1915(c) waivers – which gave states far greater latitude in benefit design and service delivery, with budgetary consequences – occurred under a Democratic president (Carter) and House (with 242 Democrats) but a Republican-controlled Senate (53 to 46). The option for states to extend Medicaid coverage to pregnant women and children to a year old up to 100% of the federal poverty limit (FPL), adding to spending, was instituted in 1986 under a Republican president (Reagan), Democratic House (253:182), and a Republican-majority Senate (53:47). Two years later, also under President Reagan, the Medicare Catastrophic Care Act was passed by Democratic majorities in both the House and Senate and coverage for pregnant women and infants up to 100% FPL was changed from optional to mandated – despite President Reagan's policy priority of devolving program control to states. Medicare catastrophic care was repealed in 1989 after seniors protested its cost-sharing provisions; the same year, Medicaid coverage of pregnant women and children through age 6 up to 133% FPL was mandated by Democrats in control of the House and Senate but a Republican president (George H.W. Bush).

The 1996 welfare reform legislation, which disconnected the linkage between Medicaid and income support[2] was passed by Republican majorities in both the House and Senate – though

[2] The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA, Public Law 104–193) replaced Aid to Families with Dependent Children (AFDC), a categorical, open-ended grant-in-aid, with

by a slim, non-veto-proof Senate majority (52:48) – and signed by President Clinton, a Democrat. The same governing mix passed CHIP a year later, again adding to spending. CHIP was created to provide coverage to uninsured children in families with income too high to qualify for Medicaid, but insufficient to purchase private or employer-sponsored insurance. Like Medicaid, CHIP is jointly financed by federal and state governments.[3]

At the same time they expanded coverage for children, federal policymakers instituted a variety of changes in Medicaid and Medicare in 1997, some of which were fiscally conflicting. Within Medicaid, they set limits on payments to disproportionate share hospitals and expanded managed care options. Within Medicare, they created Part C (Medicare Advantage), expanded preventive benefits, instituted new prospective payment systems, reduced provider payments, and expanded research and demonstration projects. Many of these provisions were undone by the 1999 Balanced Budget Refinement Act, under the same party control. Finally, the largest expansion in Medicare history occurred in 2003 under a unified Republican-party federal government: the Medicare Part D prescription drug benefit.

In short, the standard understandings of the role of parties – specifically, that Democrats are more inclined than are Republicans to expand benefits, enlarge target populations, and increase spending – do not seem to apply to federal policy actions on health entitlements, a conclusion supported by our statistical analysis. Politics matters with entitlements – but *how* and *why* are uncertain.

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the Temporary Assistance for Needy Families (TANF) block grant. States can use TANF dollars to meet any of the four purposes in the federal law: 1) provide assistance to needy families so that children may be cared for in their own homes or in the homes of relatives; 2) end the dependence of needy parents on government benefits by promoting job preparation, work, and marriage; 3) prevent and reduce the incidence of out-of-wedlock pregnancies and establish annual numerical goals for preventing and reducing the incidence of these pregnancies; and 4) encourage the formation and maintenance of two-parent families.

[3] The FMAP for CHIP is higher than for Medicaid; on average, the federal government provides 57% of the funding for Medicaid and 70% for CHIP. States have the option of continuing to cover children through Medicaid, setting up a standalone CHIP program, or doing both. Unlike Medicaid, CHIP is not an entitlement; rather, it is a block grant with caps on federal funding. States can control spending by limiting enrollment, but the enhanced match rate is a strong inducement to increased state spending. Additionally, under Medicaid, states are federally mandated to cover certain benefits for children; under CHIP, states with standalone CHIP programs have more discretion over both the benefits package and cost-sharing requirements.

Because entitlements are redistributive, Medicare and Medicaid share that component of their policy images and their politics. But they differ significantly across nearly every other aspect – starting with the essential premise of who deserves care. Schneider and Ingram have examined the social constructions of target populations. In their framework, elders receiving Medicare benefits are typically depicted dependents – positively constructed as good people who are relatively needy or helpless. In contrast, Medicaid beneficiaries, like welfare recipients, may be depicted as deviants – undeserving, violent, lazy – by those opposing these social programs or as dependents by those who do (Schneider and Ingram 1997).[4]

The designers of Medicare specifically sought to limit health insurance to Social Security beneficiaries for several reasons. First, it would serve to protect against the greatest single cause of economic dependency in old age, the high cost of medical care. Second, from a political calculus, limiting benefits to elders would, they hoped, contain government spending. Following the assassination of President Kennedy, President Johnson moved quickly to promote key legislative priorities, including Medicare. In the spring of 1964, the new president vowed, "We are going to fight for medical care for the aged as long as we have breath in our bodies" (Corning 1969). In contrast, Medicaid was buried in the 1965 legislation, overshadowed by the much larger Medicare program, and positioned as simply an expansion of existing welfare programs. It varied from Medicare in three significant ways: First, it was optional; states could choose or not to create programs. Second, it was limited to recipients who met established federal welfare eligibility guidelines (which included both gender and income restrictions), with the result that some needy individuals – chiefly men – would be excluded. Third, the legislation stipulated that

[4] Schneider and Ingram posit four social constructions of target populations: advantaged (politically powerful and positively constructed); contenders (politically powerful but negatively constructed); dependents (positively constructed but having little political power); and deviants (negatively constructed and little political power). In political discourse, Medicare beneficiaries are most often depicted as dependents; however, they are also routinely acknowledged to have significant political power in the electoral system. Medicaid beneficiaries may be depicted as dependents by supporters or deviants by detractors. Thus, policy images are neither-nor, but rather this-and-that, depending on context.

eligibility management would be housed within existing state welfare – not health – departments (Engel 2006).

From the outset, the politics of these two programs have diverged, along with their different constituencies. By and large, Medicare has been positioned as an essential program to help the nation's vulnerable and deserving elders. In contrast, Medicaid's policy image is problematic in American popular and political culture, stigmatized by its link to welfare. The negative image has been reinforced by cumbersome enrollment processes, low provider payment rates, variable quality of care, and its reputation as a budget buster. Variability across states contributes further confuses Medicaid's policy image (Holahan et al. 2003).

Medicare and Medicaid's competing policy images have been fairly constant over time. By and large, the "welfare queen" derided by candidate Ronald Reagan in the 1976 presidential campaign has been a durable impression, in contrast with the positive picture of vulnerable, deserving elders who receive benefits from Medicare. Recently, however, two prominent conservative columnists – David Brooks in *The New York Times* (February 2, 2010) and George F. Will in *The Washington Post* (February 4, 2010) – have decried "the geezers' crusade," "reverse-generativity," and the "demographic destiny" of financially crippling Medicare expenditures. The minority members of the House Budget Committee have issued a "GOP Road Map Version 2.0" calling for a privatized version of Medicare that is funded through premiums (initially averaging $11,000 per year), means-tested, risk-adjusted, and medical inflation rate-adjusted (Ryan 2010). The national recession has placed many previously financially stable American families at risk, altering views on social welfare programs, including Medicaid, that target poorer populations. As demographic and economic pressures mount, it remains to be seen

whether Medicare and Medicaid's heretofore sturdy policy images will shift in some fundamental way, with the possibility that policy and budget punctuations will ensue.

DATA, METHODS, RESULTS

To test the explanatory power of the punctuated equilibrium framework for health policy in United States, we examined data in several domains over the past forty-plus years. The unit of analysis in our examination is health entitlement policy, and the dependent variable is change in that policy, represented by the annual percentage change in inflation-adjusted publicly provided health programs' spending (currently, Medicare, Medicaid, and CHIP). This is the typical form of the dependent variable tested in PE analyses (see, for example, Jones and Baumgartner 2005b, McAtee and Lowery 2005, Breunig and Koski 2009, Jordan 2003). We also tested other forms of the dependent variable: entitlement spending net of private health spending, which moderates changes in spending due to technological innovation; unadjusted spending; and the natural log of unadjusted spending. A detailed discussion of the data we used for both the dependent and independent variables appears in the technical appendix on pages 171-174. Differences in our findings by outcome variable are discussed briefly below and full results are presented in the technical appendix, pages 161-170 and 176-183.

Exhibit 2, page 151, shows the trend in inflation-adjusted Medicare and federal and state spending on Medicaid (including CHIP) from 1968 to 2008. Exhibit 3, page 152, shows the annual percentage change in inflation-adjusted spending (the typical dependent variable in PE analyses). Because of the limited number of CHIP observations (the program was created only in 1997), we included it in overall Medicaid spending from that time forward. We excluded the initial three years of both programs (1965-1967) to avoid "founding effects" – first-time and early funding gains – in order to better understand typical program spending changes. From 1968 to 2008, all three programs averaged positive growth. The mean annual percentage change in

unadjusted spending was 11.91% for Medicare; 12.92% for the federal portion of Medicaid; and 11.78% for the state portion of Medicaid.

The contours of health entitlement spending conform generally to the trends reported by Jones and Baumgartner in *The Politics of Attention* (2005b) for other government programs. Their examinations of annual percentage change in budgets for science, income security, education, crime and justice, natural resources, agriculture, and Social Security are essentially congruent with the pattern shown in Exhibits 2 and 3: overall growth with occasional contractions. Jones and Baumgartner report that defense budgeting is notably different from other government spending, with very few year-to-year reductions (2005a, 2005b).

Exhibits 2 and 3 show recessions declared by the National Bureau of Economic Research (NBER), noted in the box on the charts and by asterisks on the years. Recessionary effects are most apparent in Medicaid spending, as would be expected, given that program is need-based. Because Medicaid spending is based on the FMAP, yearly changes can be considerable.[5] For example, in 1990-1991, the FMAP increased for 23 states, decreased for 14, and was unchanged for three. The average change was an increase of 0.21 points, but the FMAP for Texas increased 2.30 points and decreased in Pennsylvania 2.22 points (Congressional Research Service 2008). The annual effects of these various changes are reflected in the comparative volatility of federal and state Medicaid spending relative to Medicare spending.

Medicare spending variations associated with policy changes are also reflected in Exhibits 2 and 3. For example, reductions in spending from 1983-1987 resulted at least in part

[5] Several factors influence annual FMAPs – first and foremost, the structure of states' economies and and their ability to respond to economic changes, particularly downturns. National economic constrictions are experienced variably across the states, depending on the business sectors involved. The FMAP relies on states' per capita personal income, which can modulate significantly year to year, in relation to the national average per capita income, which changes very little from one year to the next. If more states or larger states experience an economic decline, individual and cumulative changes in the FMAP may be significant. There is an approximate two-year lag time between when the Department of Health and Human Services calculates FMAPs for upcoming fiscal years and when the rate takes effect. For example, FMAPs for FY08 (October 1, 2007-September 31, 2008) were calculated and published in 2006. The delay in implementation allows states to adjust to upcoming changes, but also means that the per capita income amounts used to calculate the FMAPs for a given fiscal year are several years old by the time those rates take effect (Congressional Research Service 2008).

from cost containment efforts, including greater penetration of health maintenance organizations (HMOs) in the Medicare market and the prospective payment system. The large increase in Medicare expenditures in 2006 resulted from the prescription drug benefit (Part D), and is mirrored in a smaller decrease in Medicaid spending, as drug coverage for dual eligibles (those beneficiaries eligible for both Medicaid and Medicare) moved to Medicare.

To examine congruence with the commonly held wisdom that presidential party affiliation affects spending on social welfare programs – specifically, that Democratic presidents are more inclined to increase expenditures than are their Republican counterparts – Exhibits 2 and 3 code the President's party by year. The chart data, supplemented by the policy history evidence, does not support this hypothesis. The average percentage change in inflation-adjusted Medicare expenditures for Democratic presidents (Carter and Clinton) is 7.05% and for Republican presidents (Nixon, Ford, Reagan, George H.W. Bush, and George W. Bush) is 12.57%. For federal Medicaid spending, the average change is 8.25% for Democrats and 14.41% for Republicans. The average yearly nominal (unadjusted) spending increase in Medicare under Democratic presidents is $112 million, and for Republicans, $147 million. Average federal Medicaid outlays increased by $53 million and $67 million, respectively.

However intuitive it might be to see annual outlay changes like those in Exhibit 3 as evidence of budget punctuations, PE scholars do not define punctuation by either the level or number of annual increases or decreases. Rather, the question is whether the distribution of those changes over time is or is not normal. PE posits that punctuated distributions are leptokurtic, characterized by a high middle peak at zero, evidencing a high frequency of little or no budgetary change (equilibrium), and fat tails on both sides, signifying occasional significant, bidirectional, non-zero changes (punctuation) (see, for example, Baumgartner and Jones 2002). This Paretian probability distribution[6] is consistent with findings of other budget and finance analysis (Jordan

[6] The stable Paretian hypothesis was advanced by Mendelbrot (1963) to explain cotton price variation. It has since been extended broadly to markets, finance, and budgeting. Basic assumptions are that changes are

2002). Jones and Baumgartner (2005b) document this distribution for overall government spending over the period 1948-2003; they do not present distributions for individual budget functions, however.[7]

As shown in the technical appendix (pages 161-170), across different forms of the dependent variable, our tests for kurtosis were mixed; results for μ were all non-zero; tests for skew were all positive; tests for normal distribution were mixed. Changes in inflation-adjusted Medicare expenditures are the least peaked of the three distributions (kurtosis value of 0.09, close to the zero value expected in a normal distribution). The distribution is centered on an average annual percentage change of nearly 12%, positively skewed (0.66), and not normal, as demonstrated by the Shapiro-Wilk test p-value of 0.02 (against a test statistic of 0.05 for a normal distribution). Annual percentage changes in inflation-adjusted federal Medicaid spending center slightly higher at 13%. This distribution is the most strongly positively skewed (with a value of 0.99), seen in the much longer right tail. It is relatively highly peaked (kurtosis value of 0.5) and significantly not normal on the Shapiro-Wilk test, with a p-value of 0.0038 (allowing us to reject normality at all levels). State Medicaid spending changes center on an annual increase of change of nearly 12%; the distribution is highly peaked (kurtosis value of 0.89) and positively skewed (0.91), slightly less than federal budget changes for the same program. The Shapiro-Wilk p-value of 0.03 allows us to reject the hypothesis of normality.

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independent and have infinite variance over time and that distributions are non-normal, with strong kurtosis and skew (Fama 1963, Mandelbrot and Taylor 1967).

[7] Jones and Baumgartner report three instances of "macropunctuations" in total U.S. budgetary authority, which they describe as "shifts in overall spending behavior that reverberated throughout most programs funded by government" (2005b, 95). The first was in FY1956 and was a large shift upward, particularly new initiatives in discretionary programs: defense, education, science, highways, housing, and urban renewal. The second, a downward shift, occurred in FY1976, a result of President Nixon's 1973-74 impoundments of appropriated funds for discretionary programs. The third occurred in FY2001, with increased spending post-9/11 in defense and both domestic and international security. There were also notable increases in other discretionary programs: agriculture, education, and income security (including unemployment, TANF, and Supplemental Security Income) and food and nutrition support that fiscal year. True notes that large, ongoing increases in entitlements – Social Security and health care – "continued without faltering" over time (True 2004, 5). Jones and Baumgartner attribute 2001 health entitlement increases to the addition of Part D to Medicare, but drug coverage did not take effect until 2006 (Jones and Baumgartner 2005b, 96).

In sum, policy analysis and distribution tests do not confirm the thesis that health entitlement spending can be explained in punctuated equilibrium terms. Health entitlement spending is by and large stable, with predominantly positive annual changes not centered on zero. That is, for health entitlements, stability is essentially steady-state growth, interspersed periodically by nontrivial expenditure changes, particularly in the Medicaid program. Although the distributions are non-normal, variably peaked and skewed, they are not congruent with the expected Paretian distribution, owing to nearly exclusively positive changes. Medicare has never posted an annual change of less than zero. In the Medicaid program, there is only one instance of negative growth in federal spending – of just -0.01% – in 2006. State Medicaid spending follows a similar pattern, posting just one retrograde change – also -0.01% – in 2008. Possible reasons for these findings are explored in greater detail below.

Medicare Expenditures, 1968-2008

A complete list of independent variables we examined and their measures is included in the technical appendix, pages 171-175. Of those, we tested Medicare expenditures for the effects of party (whether the President is a Democrat and Democrats' control of the House and Senate), the number of health entitlement hearings held, and bills introduced in both chambers. To assess lawmakers' responsiveness to public concerns, we included the number of *New York Times* articles and whether health care was among the top five most important problems in Gallup polling. To capture macroeconomic factors, we deflated expenditures by the overall inflation rate (or, in other forms of the outcome variable, used inflation as a regressor) and to gauge demand, we included the number of persons 65 years and older in the U.S. each year for the period under examination. The results for annual changes in inflation-adjusted spending are shown on page 176. Only two variables – Senate and House partisan makeup – are significant. Of note, however, is the fact that their signs are contrary: In this regression, Democratic control of the Senate is negatively associated with increased spending while Democratic control of the House is

positively correlated. Many of the other variables, such as the number of hearings and bills, the most important problem, and, especially noteworthy, the number of persons 65 and older, are incorrectly signed (though they are not significant.) To assess the individual effects of the explanatory variables, we tested each singly. The results, which must be interpreted with caution, given omitted variable bias, are included in the technical appendix along with additional regression results – using the same variables and testing Medicare spending net of private health spending, nominal expenditures (unadjusted for inflation), as well as the natural log of unadjusted expenditures as the dependent variables – on pages 177-178. Across different forms of the dependent variable, only House partisanship (Democratic party control of the chamber) was reliably positively associated with Medicare spending. In alternative forms of the dependent variable, the introduction of bills in the House was also positive and significant, along with the inflation rate.

Federal Medicaid Expenditures, 1968-2008

We assessed the effects of party (President party, House and Senate party control, and bills introduced in both chambers), public opinion (New York Times articles and most important problem), economic factors (unemployment rate, the population at 125% of the federal poverty limit) and the population 65 and older on the annual percentage change in inflation-adjusted change in federal Medicaid expenditures. Results are shown on page 179. In this model, Democratic party control of the Senate had a positive effect and was significant at the 0.05 level, but the association with Democrats' control of the White House was negative and strongly significant – indicating that increased federal Medicaid spending was more likely to occur under Republican presidents. To this model, we added Medicaid waivers to test the effects of greater state discretion on federal spending, which returned a similar magnitude of effect, in the opposite direction, and significance. Across all forms of the dependent variable, waivers were uniformly positive and significant, indicating a strong association with increased federal expenditures on

Medicaid. Despite elders' effects on Medicaid expenditures (chiefly due to long-term care spending), the population 65 years and older is negatively signed, and significant. No other variables were significant and, again, many were incorrectly signed. Complete regression results are found on pages 179-181.

State Medicaid Expenditures, 1968-2008

States have significant latitude in designing their Medicaid programs, and their discretion is further enlarged by the extensive use of waivers (Sloan 1984; Arsenault 2000; Holahan, Weil, and Wiener 2003; Ogden and Adams 2009; Thompson and Burke 2009). States define recipient populations, determine covered services and copayment levels, and establish payment rates and methods – all of which have implications for annual budgets. In our model, waivers have a moderate effect on annual changes in states' inflation-adjusted expenditures and are significant at the 0.10 level, as shown on page 182. However, the unemployment rate has a larger effect and is significant at the 0.02 level. Again, tests of other forms of the dependent variable returned different results. Across the board, the chief executive's party was insignificant and negatively signed, indicating that, as with Democratic presidents, Democratic governors are less likely to be associated with increased Medicaid spending. Democratic control of the state legislature was similarly insignificant, but switched signs, depending on the dependent variable. In only one form of the dependent variable (the natural log of unadjusted expenditures) was the unemployment rate significant (and positive); a corollary variable, the population at 125% FPL, was consistently negatively signed, though not significant. Complete regression results for state Medicaid spending are on pages 182-183.

DISCUSSION

Our findings are limited by the small number of observed cases, because only forty years of expenditures were tested. Owing to that constraint, our models err on the side of parsimony rather than over-specification, and thus omitted variable bias is a likely source of potentially reducible error. For example, an argument could be made for including not only the partisan makeup of Congress and state legislatures, but also the number and type of physicians, business owners, and attorneys in both chambers, on the presumption that each of these professionals would have opinions about health care and the role of the market or the government in securing it.

In addition, key components of the models suffer from a lack of granularity that may have important consequences for understanding their actual impact on health entitlement spending. For example: The most important problem data are from Gallup polls of the public. These polls do not distinguish between all adults, registered voters, and likely (or confirmed) voters. Nor do they register intensity of responses, merely salience to respondents. Data on hearings are likewise general, capturing merely the number of hearings on health entitlements, but not their purpose (e.g., fact-finding or budgetary), content, inter- (or intra-) party contentiousness. Data on bills introduced suffers from a comparable lack of fine resolution.

Importantly, policy changes outside health entitlements, which are not included among our independent variables, can and do have significant spillover effects on health spending. The 1996 welfare reform, for example, contributed to increases in Medicaid spending (Marton and Wildasin 2007). Additionally, our model does not capture state variability in the proportion of state spending on Medicaid and the level and rate of Medicaid spending growth. For example, in 2005, Medicaid expenditures in Utah and Wyoming were less than 13% of total state spending, but more than 30% for Tennessee, New York, and Maine (Marton and Wildasin 2007). From 1980 to 2004, the average annual rate of Medicaid spending growth was 9.6% nationwide, but ranged from 5.1% in Connecticut to 21% in Arizona. These overall growth rates, however, elide differences across care categories – for example, hospital care grew 8% annually across the

country, but just 0.7% in Indiana and 20.1% in Arizona. The use of section 1915(c) waivers to promote home and community-based services had widely varying effects on home health care rates of growth: the national average was 19.1%; but several states had growth rates over 40%: Utah (40.6%) South Dakota (42.9%), and Nevada (45.4%). Annual growth rate was 79.9% in New Mexico and 93.5% in Alaska, while Oklahoma posted negative growth (-4.4%) (Centers for Medicare and Medicaid Services 2007).

Health spending changes result from a variety of factors, most not accounted for in typical PE analyses. Macroeconomic conditions certainly affect health expenditures. National recessions have resulted in upticks in both federal and state health spending, with Medicaid spending particularly affected and often lagging national impacts by a year or more (National Association of State Budget Officers 2002). Pressure is also exerted by changes in disease prevalence, the mix of conditions Medicare and Medicaid beneficiaries exhibit, and the types and locations of care they receive. For example, Medicare beneficiaries' medical needs and where they are treated have changed dramatically over the past two decades. Twenty years ago, most spending growth was linked to intensive, costly inpatient (hospital) services, chiefly for heart disease. Recently, much of the growth has been attributable to chronic conditions such as diabetes, arthritis, hypertension, and kidney disease – conditions chiefly treated not in hospitals but in outpatient settings and by patients at home with prescription drugs. Spending on ambulatory care services and prescription drugs now accounts for most of the rising spending among Medicare patients (Thorpe, Ogden, and Galactionova 2010). The effects of these disease and treatment trends cross programs: Elderly and disabled beneficiaries covered by Medicare account for about one-quarter of Medicaid enrollees, but roughly two-thirds of Medicaid spending, mainly because of spending on acute and long-term care (Executive Office of the President 2007).

By not accounting for these pressures, PE's value in explicating health entitlement spending is limited. None of these program stresses are beyond policy control, though budgetary

effects of policy shifts may be long-term and serve mainly to reduce the rate of rise – they may be "hidden," as True characterizes them. Our analysis shows that policy changes, unless they are truly drastic (on the level of the GOP's changes to Medicare prescription drug coverage), are unlikely to alter the direction of overall spending, merely the magnitude of upward climb.

Ultimately, however, no PE model, no matter how well specified, measured, and operationalized can truly account for the influence of party on legislators' policy decisions in the form of gatekeeping by committee chairs and pressure from other party operatives. "[H]ealth care policy is politics at its richest and fullest. Politics is about power, and the making of health policy is nothing if not the wielding of power" (Weissert and Weissert 2006, 6). No model can quantify the November 2003 arm-twisting that resulted in two Republicans, C.L. "Butch" Otter (R-Idaho) and Jo Ann Emerson (R-Mo.), who were surrounded on the floor by Speaker Hastert and other leaders during the House's vote on the Medicare prescription drug bill. These two consented to switch their no votes to yes only after the Speaker agreed to an up-or-down vote on legislation to permit drug importation from Canada that both favored, as well as a promise to work to strip proscriptive importation language from the Medicare bill (Brady and Volden 2006). According to media reports, Emerson was in tears as she voted. How to operationalize that variable?

It is this limitation, we believe, that produces unexpected results among variables testing the effects of party on health entitlement budgets. As the overview of the policy history on pages 154-157 demonstrates, the role of party in health entitlement policymaking is highly variable, which explains the variability in our models. It should not be surprising that Democratic party control has differed over time in both effect and significance. Republicans have periodically altered policy direction and spending and have been in control of the White House during three of the four recent recessions; the House was under Democratic control for the same number (though not the same periods), and Republicans held the majority in the Senate for three of the four. Party control at the state level was similarly erratic. Each economic downturn resulted in increased health entitlement expenditures, and produced the inconsistent effects in our models.

The problem of specification is a serious constraint in moving PE from descriptive to predictive analysis. The challenge is compounded by difficulty in interpreting the impact of specified variables: "It may well be that politics may not always matter in the straightforward ways that we, as political scientists, like to imagine. Or more plausibly still, politics probably matters a great deal, but in such idiosyncratic, conditional, and path dependent ways that finding systematic evidence of its impact should keep political scientists gainfully employed for some time to come" (McAtee and Lowery 2005, 20).

The most fundamental limitation, however, is that correlation is not causation. As is, PE cannot adequately explain the exact nature of the relationship of the correlation between public priorities of problems and the number of House hearings, let alone annual Medicare expenditures. It presumes a connection that, given the logic of the larger framework, which posits inefficient information use, disproportionate information processing, and a large random error term, is quite possibly tenuous.

CONCLUSIONS

Mandatory spending programs such as Medicare and Medicaid fundamentally differ from discretionary government activities, and particularly in budgetary decision processes. Federal legislative attention typically focuses on program administration; substantially, appropriation decisions are largely *faits accomplis*. As a result, "a major policy change in a mandatory program is more likely to redirect the trajectory of its spending rather than create a quick surge of decline in annual budget authority" (True 2000, 7). It is for this reason our tests of punctuated equilibrium in expenditures were negative.

At the state level, policymakers undertake both administrative and appropriations decisions, making state Medicaid budgeting more discretionary than federal spending is – but spending changes still do not reflect the Paretian distribution that PE expects. Because Medicaid is funded from general revenues, and because nearly every state has a balanced budget

requirement, economic shifts place tremendous pressure on state governments to alter Medicaid spending. Given the ability to modify Medicaid programming and spending, state policymakers do so, but inflation-adjusted spending has still risen in every year but one. It is notable that waivers are the sole variable we tested that returned consistently positive and significant results across all three models testing both federal and state Medicaid spending. Although other results may be equivocal, this one is not: Waivers are reliably associated with increased spending.

Overall, quantifying the additive, synergistic, and cumulative effects of atomistic policy changes, large and small – for example, the expansion of waivers, changes in the FMAP, repeated refusals by Congress to pull the SGR trigger, and the joint decision by national and state governments to decouple welfare and Medicaid benefits and how to do so – means disaggregating our complex, interactive federalist system and its varied processes operating at its different levels. Baumgartner and Jones (1993) characterize federalism as a series of policy venues, interdependent but essentially uncoupled. This complicated, dynamic system of systems (Elazar 1972) both presumes and facilitates differences among the states, leads to inconsistent policies between and among states, and frequently produces muddled policymaking and federal government policy directives (Derthick 1996). Determining a policy's trajectory at any given time is problematic. As Heisenberg concluded, the more precisely position is determined, the less precisely momentum is known in that instant, and vice versa.

Because publicly financed health care is redistributive, functional federalism would place it most appropriately within the ambit of the federal government. However, health entitlements have been dominated by legislative or political federalism, shaped by the political incentives that govern both federal and state executives' and legislators' objectives: chiefly their chances of reelection, which are bolstered by opportunities for credit-claiming, blame avoidance, and concentrated benefits with diffuse costs (Peterson 1995). Seen in this theoretical framework, state and federal policymakers have engaged in an intricate policy quadrille to claim credit for helping vulnerable elders and the deserving poor (almost exclusively women and children), fostering a

local market-based solution to the demand for care, regulating that market, and spreading costs across the breadth of taxpayers. Ideology and pragmatism have not yet found equilibrium, explaining periodic policy punctuations – though not, at least directly, budgetary fluctuations.

Scholarly opinion strongly differs regarding the relative strength of national versus state governments in the recent era of federalism, and the structure of federal-state relationships (Krane 2007). Within the realm of social policy, although "states have recaptured a great deal of policy authority in recent years, it is unlikely the federal role will be significantly diminished in the near future" (Arsneault 2000, 50; Peterson 1995, Derthick 1996, Posner and Wrightson 1996). The federal government has influenced state health policy through financing, regulation, and oversight. The federal-state relationship has also affected policy diffusion and program innovation, with bidirectional adoptions of change (Arsneault 2000). The middle-tier is clearly not dominated by the federal government, and "the persistence of state discretion," in Derthick's words (1987, 68), in both tenacity and tenure is clear. States establish their own Medicaid eligibility rules, payment policies, regulate private health insurance as well as supply of health care. Medicaid waivers and demonstration programs further extend state discretion. With neither government tier dominant, federalism's complexities offer multiple points of access for influencing public decision-making, benefiting a range of actors and stakeholders (Elazar 1972). Marble cake federalism remains a fairly apt metaphor for the admixture of roles, responsibilities, and intergovernmental relationships.

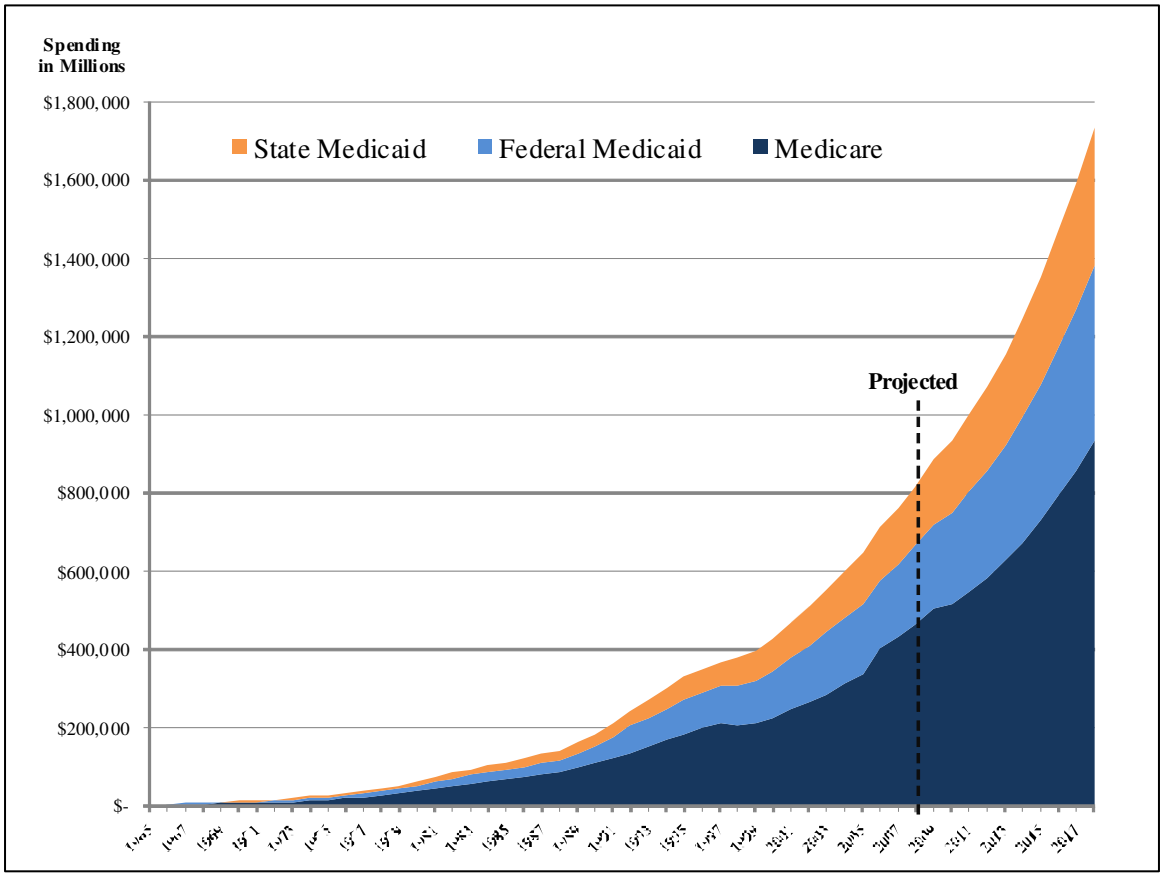
The history of federalism in the realm of health policy takes the form of cyclical, iterative evolution. According to Nathan (2005), periodic changes are predictable (at least in hindsight): The national government has been the source of social policy initiatives in liberal periods in our history, producing Medicare and Medicaid in 1965. In more conservative periods, however, states have been the source of innovation and expansion in the social sector, leading to expansions in Medicaid eligibility and services. However, expansions are often followed by contractions, often

in response to changed economic conditions. Making health entitlement policy more coherent, given its political federalist history, will be challenging.

"Yet the system is globally stable. There is an underlying orderliness to this complexity," True concludes (2000, 15). As the policy history of Medicare and Medicaid shows, most changes are made incrementally, and often iteratively, by actors dispersed throughout the system and its subsystems. New problems or changed understandings about old ones can and do result in policy and budgetary shifts that, in turn, may cause iterative, responsive alterations. Medicare and Medicaid are now 45 years old. The problems of their middle age – medical inflation rising faster than overall inflation, mounting demographic pressures in the form of increasing rates of expensive chronic illness and an aging population, and constrained national and state budgets – are likely to force policy changes. If history serves, those changes will be predominantly incremental, with occasional pendulum swings. Absent fundamental program redirection, spending will continue to rise.

EXHIBITS

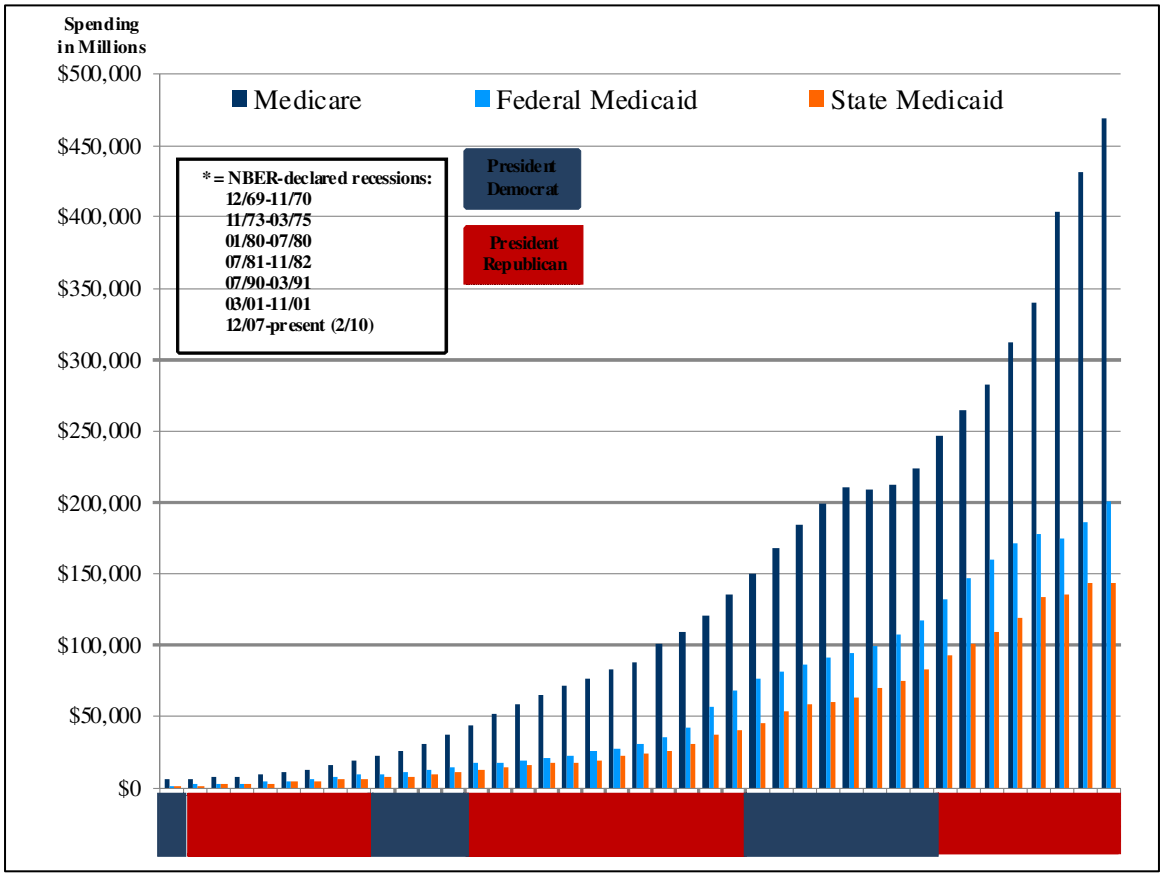
Exhibit 1: Public Spending on Medicare and Medicaid, 1965-2018



Notes: Spending in millions. First projected year is 2008.

Source: Centers for Medicare and Medicaid Services, National Health Expenditures Accounts: http://www.cms.hhs.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp#TopOfPage.

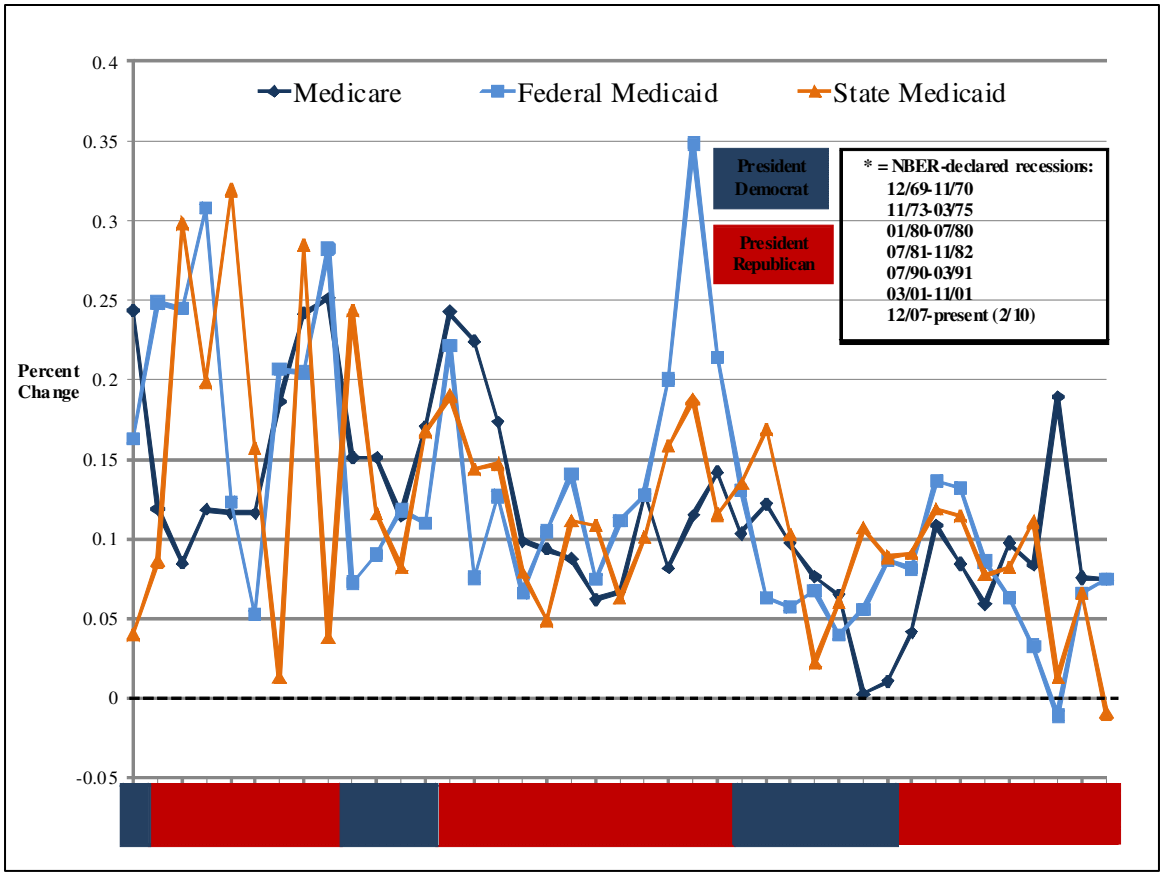
Exhibit 2: Histogram of Annual Inflation-Adjusted Health Entitlement Spending, 1968-2008



Notes: Deflated by annual overall inflation rate. Years with national recessions are starred. President's party is indicated by year of inauguration to succeeding election in which control of the White House changed party.

Sources: Centers for Medicare and Medicaid Services, National Health Expenditures web tables: http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage. Bureau of Labor Statistics, ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt. National Bureau of Economic Research, Business Cycle Expansions and Contractions: http://www.nber.org/cycles.html.

Exhibit 3: Annual Percentage Changes in Inflation-Adjusted Health Entitlement Spending, 1968-2008



Notes: Deflated by annual overall inflation rate. Years with national recessions are starred. President's party is indicated by year of inauguration to succeeding election in which control of the White House changed party.

Sources: Centers for Medicare and Medicaid Services, National Health Expenditures web tables: http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage. Bureau of Labor Statistics, ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt. National Bureau of Economic Research, Business Cycle Expansions and Contractions: http://www.nber.org/cycles.html.

POLICY APPENDIX

MAJOR POLICY MILESTONES IN MEDICARE AND MEDICAID

1965 Medicare and Medicaid enacted as Title XVIII and Title XIX of the Social Security Act, extending health coverage to almost all Americans aged 65 or older (e.g., those receiving retirement benefits from Social Security or the Railroad Retirement Board), and providing health care services to low-income children deprived of parental support, their caretaker relatives, the elderly, the blind, and individuals with disabilities.

1966 Medicare implemented; more than 19 million individuals enrolled on July 1.

1967 An Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) comprehensive health services benefit for all Medicaid children under age 21 was established.

1972 Medicare eligibility extended to individuals under age 65 with long-term disabilities and to individuals with end-stage renal disease (ESRD).

Medicare given the authority to conduct demonstration programs.

Medicaid eligibility for elderly, blind and disabled residents of a state could be linked to eligibility for the newly enacted Federal Supplemental Security Income program (SSI).

1973 The HMO Act provided for start-up grants and loans for the development of health maintenance organizations (HMOs) as a cost-containment strategy; HMOs meeting federal standards relating to comprehensive benefits and quality were given preferential treatment in the marketplace.

1977 The Health Care Financing Administration (HCFA) established to administer the Medicare and Medicaid programs.

1980 Coverage of Medicare home health services broadened. Medicare supplemental insurance ("Medigap" policies) brought under federal oversight.

1981 Freedom of choice waivers (1915b) and home and community-based care waivers (1915c) established in Medicaid.

States required to provide additional payments to hospitals treating a disproportionate share of low-income patients (i.e., DSH hospitals).

1982 The Tax Equity and Fiscal Responsibility Act (TEFRA) made it easier and more attractive for HMOs to contract with Medicare. TEFRA also expanded HCFA's quality oversight efforts through Peer Review Organizations (PROs).

1983 An inpatient acute hospital prospective payment system for the Medicare program, based on patients' diagnoses, was adopted to replace cost-based payments.

1985 The Emergency Medical Treatment and Labor Act (EMTALA) required hospitals participating in Medicare that operated active emergency rooms to provide appropriate medical screenings and stabilizing treatments to all presenting patients.

1986 Medicaid coverage for pregnant women and infants (up to 1 year of age) to 100% of the Federal Poverty Level (FPL) established as a state option.

1987 The Omnibus Budget Reconciliation Act of 1987 (OBRA87) strengthened protections for residents of nursing homes.

1988 The Medicare Catastrophic Coverage Act, which included the most significant changes since enactment of the Medicare program, improved hospital and skilled nursing facility benefits,

covered mammography, and included an outpatient prescription drug benefit and a cap on patient liability. It also raised beneficiary cost sharing through higher premiums.

Medicaid coverage for pregnant women and infants to 100% FPL was mandated; special eligibility rules were established for institutionalized persons whose spouses remained in the community to prevent "spousal impoverishment"; Qualified Medicare Beneficiary (QMBs) program was established to pay Medicare premiums and cost-sharing charges for beneficiaries with incomes and resources below established thresholds.

1989 The Medicare Catastrophic Coverage Act of 1988 was repealed after higher-income elders protested new premiums. A new Medicare fee schedule for physician and other professional services – the resource-based relative value scale (RBRVS) – replaced charge-based payments. Limits placed on physician balance billing above the new fee schedule. Physicians prohibited from referring Medicare patients to clinical laboratories in which their physicians, or physicians' family members, had a financial interest.

Medicaid coverage of pregnant women and children under age 6 to 133% FPL was mandated; expanded EPSDT requirements were established.

1990 Phased-in Medicaid coverage of children ages 6-18 under 100% FPL established; Medicaid prescription drug rebate program established; Specified Low-Income Medicare beneficiary eligibility group was established (SLMBs) for Medicaid programs to pay Medicare premiums for beneficiaries with incomes at least 100% but not more than 120% of FPL and limited financial resources.

Additional federal standards for Medicare supplemental insurance were enacted.

1991 Medicaid Disproportionate Share Hospital (DSH) spending controls established; provider-specific taxes and donations to states capped.

1996 Welfare Reform: the Aid to Families with Dependent Children (AFDC) entitlement program replaced by the Temporary Assistance for Needy Families (TANF) block grant; the welfare link to Medicaid severed; a new mandatory low income group not linked to welfare added; enrollment/termination of Medicaid no longer automatic with receipt/loss of welfare cash assistance.

Health Insurance Portability and Accountability Act of 1996 (HIPAA) amended the Public Health Service Act, the Employee Retirement Income Security Act of 1974 (ERISA), and the Internal Revenue Code of 1986 to provide for new federal rules improving continuity or "portability" of coverage in the large group, small group and individual health insurance markets. CMS implements HIPAA provisions affecting the small group and individual markets.

HIPAA also created the Medicare Integrity Program which dedicated funding to program integrity activities and allowed CMS to competitively contract for program integrity work. Third, it created national administrative simplification standards for electronic health care transactions. Fourth, it required HHS to issue privacy regulations if Congress failed to enact substantive privacy legislation.

1997 Balanced Budget Act of 1997 (BBA) created the State Children's Health Insurance Program (SCHIP). Limits on Medicaid payments to disproportionate share hospitals revised; new Medicaid managed care options and requirements for states established. Medicare changes include:

- Establishing new Medicare managed care and other private health plan choices for beneficiaries;

- Requiring CMS to develop and implement five new prospective payment systems for Medicare services (for inpatient rehabilitation hospital or unit services, skilled nursing facility services, home health services, hospital outpatient department services, and outpatient rehabilitation services);
- Slowing the rate of growth in Medicare spending and extending the life of the trust fund for 10 years;
- Providing a broad range of beneficiary protections;
- Expanding preventive benefits; and
- Testing other innovative approaches to payment and service delivery through research and demonstrations.

1999 The Ticket to Work and Work Incentives Improvements Act of 1999 (TWWIIA) expanded availability of Medicare and Medicaid for certain disabled beneficiaries who return to work. Established optional Medicaid eligibility groups and allowed states to offer a buy-in to Medicaid for working-age individuals with disabilities.

The Balanced Budget Refinement Act of 1999 (BBRA) increased payments for some Medicare providers and increased the amount of Medicaid DSH funds available to hospitals in certain States and the District of Columbia. Other related legislation improved Medicaid coverage of certain women's health services.

2000 The Benefits Improvement and Protection Act (BIPA) further increased Medicare payments to providers and managed health care organizations, reduced certain Medicare beneficiary co-payments, and improved Medicare's coverage of preventive services.

BIPA created a new Medicaid prospective payment system for Federally Qualified Health Centers and Rural Health Clinics and it modified the amount of Medicaid DSH funds available to hospitals, while it provided a one-year extension on the sunset of transitional medical assistance provided to families eligible for welfare.

2003 The Medicare Prescription Drug, Improvement, and Modernization Act (MMA) made the most significant changes to Medicare since the program began. MMA created a prescription drug benefit and new preventive benefits, among numerous other smaller changes. In 2006, the new voluntary Part D outpatient prescription drug benefit became available to beneficiaries from private drug plans as well as Medicare Advantage plans. Employers who provide retiree drug coverage comparable to Medicare's are eligible for a federal subsidy. The Part D "doughnut hole" – the difference of the initial coverage limit and the catastrophic coverage threshold – is an important policy component. Once total spending on a beneficiary's prescription drugs reached $2,250 in 2006, he or she was required to pay the entire cost of medications until reaching $3,600 in out-of-pocket spending, at which point coverage resumed.

2005 Medicare begins covering the "Welcome to Medicare" physical, expanding preventive services for newly enrolled beneficiaries.

2006 Medicare Part D, the prescription drug benefit, is implemented. As required by law, the Medicare Trustees calculated for the first time that general revenues will exceed 45% of total Medicare outlays within a seven-year period.

2007 Medicare beneficiaries with higher incomes (more than $80,000/individual; $160,000/couple) begin paying a higher monthly Part B premium based on their modified adjusted gross income, ranging from $105.80 to $161.40 per month, depending on their income. For the second consecutive year, Medicare Board of Trustees calculated that general revenue will exceed 45% of Medicare funding within the succeeding seven years, triggering a "Medicare

funding warning." In December, the Medicare, Medicaid, and SCHIP Extension Act of 2007 (PL110–173) was signed into a law. The Act prevented a 10.1% reduction in Medicare physician payments that was scheduled for 2008 and gave physicians a 0.5% increase through June 30, 2008.

2008 In July, the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) is signed into law (PL 110-275), preventing a reduction in physician fees through the end of 2008, and increasing fees by 1.1% through 2009. The cost of the postponement of physician fee cuts was offset by cutting bonus payments to Medicare Advantage plans. The Act also provided benefit improvements: reduced coinsurance for mental health visits, eliminated the deductible for the welcome to Medicare exam, and increased allowable resources for low-income beneficiaries applying for the Medicare Savings Programs (MSP) and modified the definition of excludable assets in determining Low-Income Subsidy (LIS) program eligibility. In response to the "Medicare funding warning" issued in 2007, the President submitted proposals to Congress to reduce the share of general revenues as a share of total spending, as required by law. The Medicare Trustees issued a third "Medicare funding warning" in 2008, as required by law, indicating general revenues would exceed 45% of total Medicare spending within a seven-year period.

Sources: Centers for Medicare and Medicaid Services (2009) and Kaiser Family Foundation (2009).

TECHNICAL APPENDIX

NOTES ON INITIAL TESTING

Data from this analysis are drawn from the National Health Expenditures Accounts (NHEA) compiled by the Centers for Medicare and Medicaid Services (CMS) and found online at: http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage. The NHEA are the official estimates of total health care spending in the United States. Dating back to 1960, the NHEA measures annual U.S. expenditures for health care goods and services, public health activities, program administration, the net cost of private insurance, and research and other investment related to health care. The data are presented by type of service, sources of funding, and by sponsors. Historical spending measures annual health spending in the U.S. by type of service delivered (hospital care, physician services, nursing home care, etc.) and source of funding for those services (private health insurance, Medicare, Medicaid, out-of-pocket spending, etc.). Projections are based on the National Health Expenditures and are estimates of spending for health care in the U.S. over the next decade. Projections are presented by type of service delivered (hospital care, physician services, nursing home care, etc.) and by source of funding for those services (private health insurance, Medicare, Medicaid, out-of-pocket spending, etc.). Annual percentage changes for Medicare, federal Medicaid, and state Medicaid spending were computed using the standard formula $[E_2\text{-}E_1/E_1]$, where E_2 equals the current year expenditure and E_1 equals the prior year expenditure.

To isolate health entitlement spending growth, the resulting percentages were then deflated using the overall U.S. inflation rate computed by the Bureau of Labor statistics using the Consumer Price Index-Urban (CPI-U), available online at: http://www.bls.gov/CPI/. The CPI program produces monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services. The CPI represents changes in prices of all goods and services purchased for consumption by urban households. User fees (such as water and sewer service) and sales and excise taxes paid by the consumer are also included. Income taxes and

investment items (like stocks, bonds, and life insurance) are not included. The CPI-U includes expenditures by urban wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force. This method of annual percentage change estimation eliminates the cause of growth over which the health sector has little control: economy-wide inflation. The remainder measures changes in health-specific price inflation in excess of economy-wide inflation, and intensity and use per capita of health care services, factors specific to the health sector.

An alternative approach to removing the effects of price growth from health spending is to deflate health care expenditures per capita by a measure of medical-specific price inflation. Both are used by CMS to calculate effects on national health spending. For more information, see *National Health Expenditures Accounts: Definitions, Sources, and Methods, 2008*, online at: http://www.cms.hhs.gov/NationalHealthExpendData/downloads/dsm-08.pdf. A third approach is to adjust annual changes in total health entitlement spending by the annual change in private spending. This method effectively reduces the variability in spending associated with medical technology. We tested unadjusted annual changes in entitlement spending net of private spending in addition to inflation-adjusted spending, annual percent change in total (unadjusted) spending, and annual changes in the natural log of inflation-adjusted spending. Results are reported on the following pages.

Analyses of the distribution of annual percentage changes were conducted using SAS 9.2 by Lydia Ogden. Selected metrics and graphs appear on pages 161-169. Of the four tests for normality, the Shapiro-Wilk test was used because it is most appropriate for small-n samples (<50). The Anderson-Darling test gives more weight to the tails, and so might have been an appropriate measure if the sample size were large (>2,000).

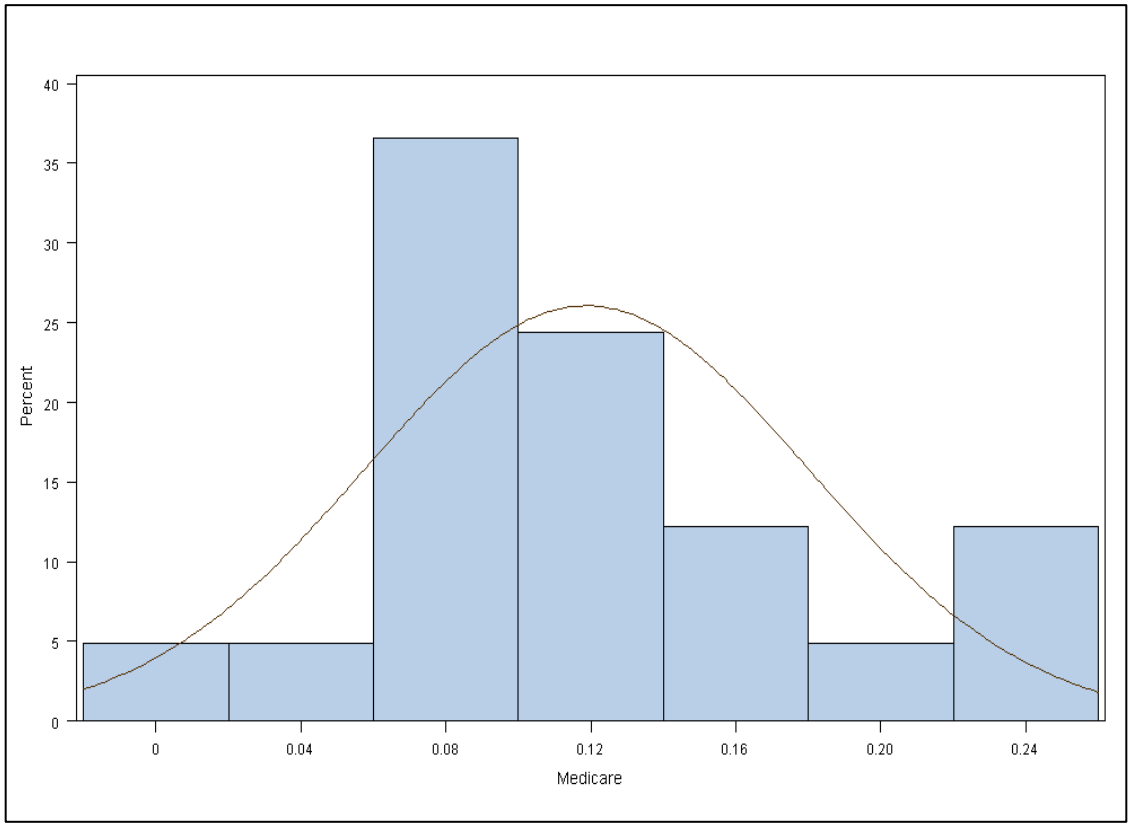
INITIAL ANALYSIS: DISTRIBUTION OF INFLATION-ADJUSTED ANNUAL CHANGES IN HEALTH ENTITLEMENT EXPENDITURES, 1968-2008

Variable: Medicare

N	41	Sum Weights	41
Mean	0.11880976	Sum Observations	4.8712
Std Deviation	0.06124568	Variance	0.00375103
Skewness	0.65473517	Kurtosis	0.09167775
Uncorrected SS	0.72878742	Corrected SS	0.15004134
Coeff Variation	51.5493699	Std Error Mean	0.00956497

Tests for Normality

Test	Statistic		p Value	
Shapiro-Wilk	W	0.934578	Pr < W	0.0206
Kolmogorov-Smirnov	D	0.161505	Pr > D	<0.0100
Cramer-von Mises	W-Sq	0.179657	Pr > W-Sq	0.0092
Anderson-Darling	A-Sq	1.056873	Pr > A-Sq	0.0083

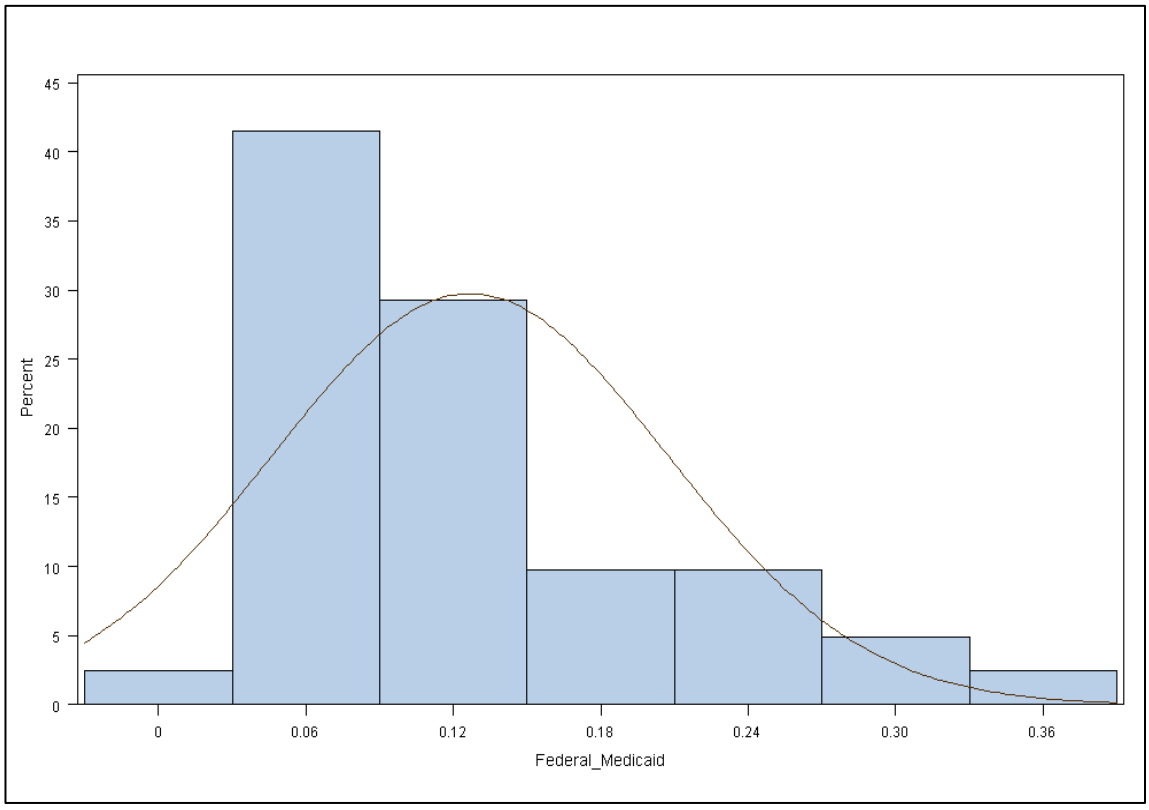


Variable: Federal Medicaid

N	41	Sum Weights	41
Mean	0.12676098	Sum Observations	5.1972
Std Deviation	0.08049509	Variance	0.00647946
Skewness	0.99261662	Kurtosis	0.50195154
Uncorrected SS	0.91798054	Corrected SS	0.2591784
Coeff Variation	63.5014777	Std Error Mean	0.01257122

Tests for Normality

Test	Statistic		p Value	
Shapiro-Wilk	W	0.911838	Pr < W	0.0038
Kolmogorov-Smirnov	D	0.163456	Pr > D	<0.0100
Cramer-von Mises	W-Sq	0.264082	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	1.443284	Pr > A-Sq	<0.0050

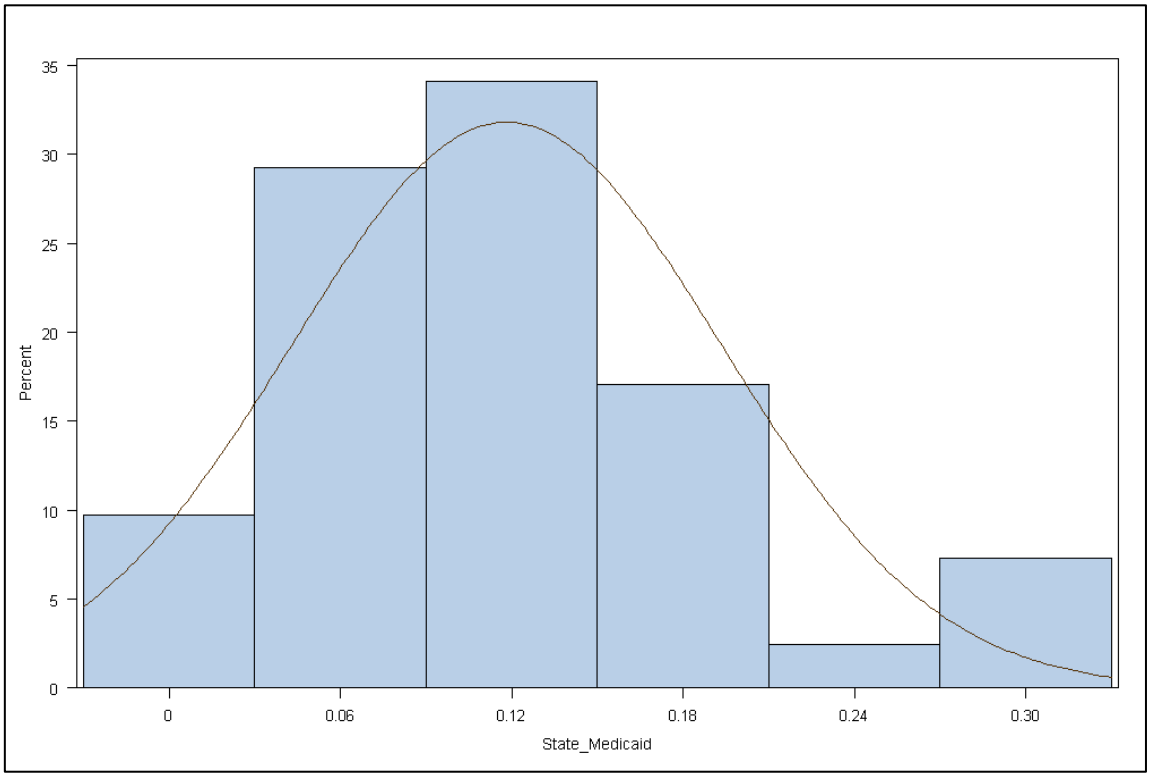


Variable: State Medicaid

N	41	Sum Weights	41
Mean	0.11820976	Sum Observations	4.8466
Std Deviation	0.07519263	Variance	0.00565393
Skewness	0.90977694	Kurtosis	0.88638726
Uncorrected SS	0.79907266	Corrected SS	0.22615726
Coeff Variation	63.6094948	Std Error Mean	0.01174312

Tests for Normality

Test	Statistic		p Value	
Shapiro-Wilk	W	0.938098	Pr < W	0.0271
Kolmogorov-Smirnov	D	0.153283	Pr > D	0.0165
Cramer-von Mises	W-Sq	0.126506	Pr > W-Sq	0.0477
Anderson-Darling	A-Sq	0.797043	Pr > A-Sq	0.0375



RESULTS OF INITIAL TESTS OF DISTRIBUTION FOR UNADJUSTED EXPENDITURES NET OF PRIVATE HEALTH SPENDING, 1968-2008

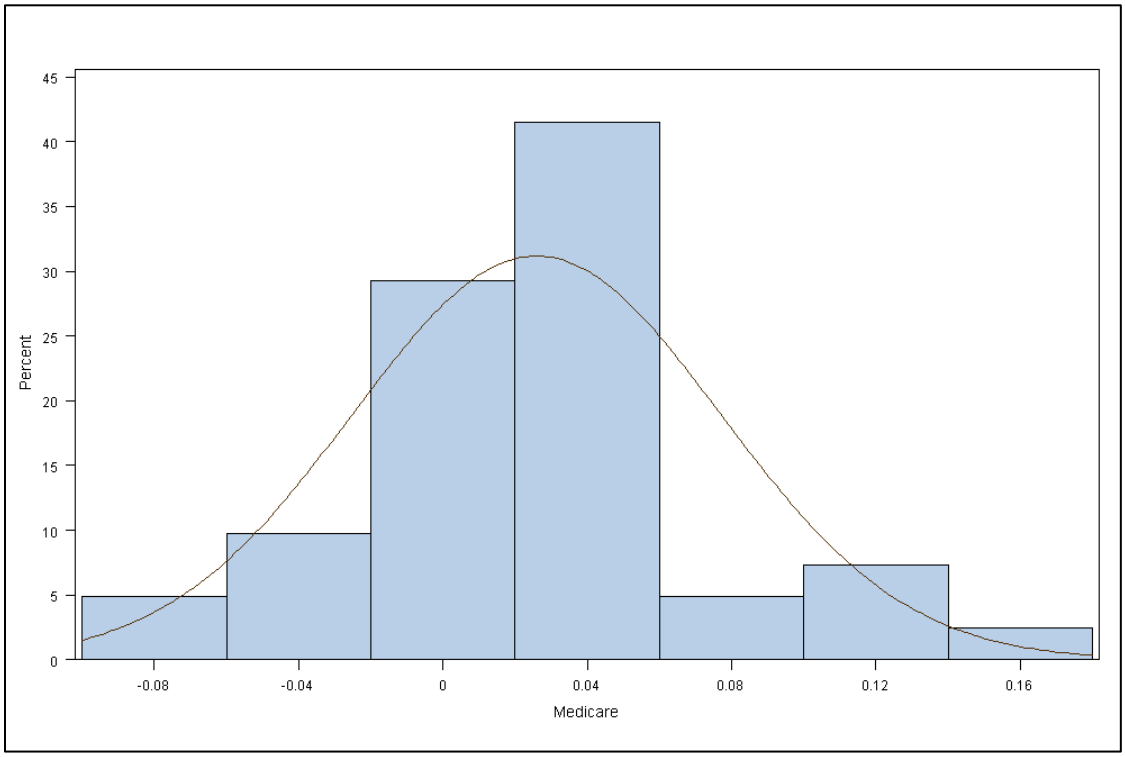
Variable: Medicare Spending Net of Private Spending, 1968-2008

N	41	Sum Weights	41
Mean	0.02595522	Sum Observations	1.06416418
Std Deviation	0.05120451	Variance	0.0026219
Skewness	0.35350827	Kurtosis	0.6673174
Uncorrected SS	0.13249668	Corrected SS	0.10487607
Coeff Variation	197.280163	Std Error Mean	0.0079968

Tests for Normality

Test		Statistic	p Value	
Shapiro-Wilk	W	0.965957	Pr < W	0.2528
Kolmogorov-Smirnov	D	0.111519	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.073045	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.507529	Pr > A-Sq	0.1978

Notes: Although the center of this distribution is closer to the zero value expected in PE (mean annual change is 2.59%), the Shapiro-Wilk test statistic does not allow us to reject the null hypothesis that the distribution is normal. It is somewhat kurtotic (0.67) but is also positively skewed.



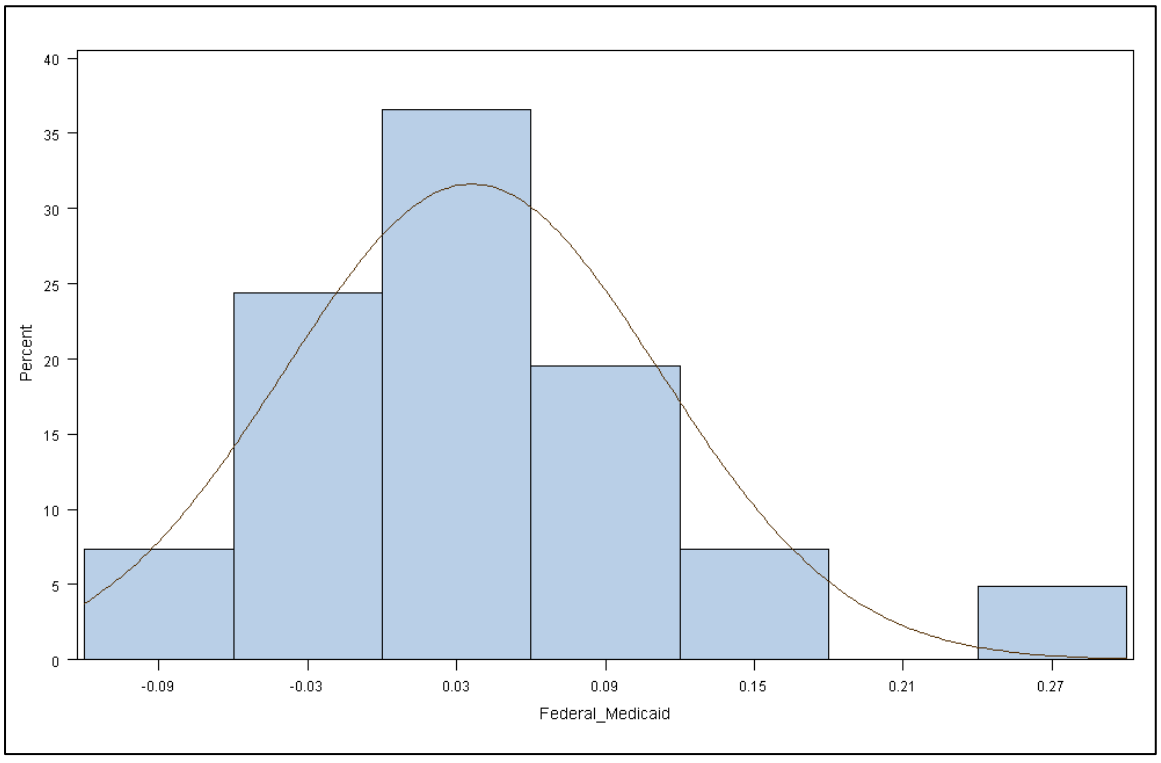
Variable: Federal Medicaid Spending Net of Private Spending, 1968-2008

N	41	Sum Weights	41
Mean	0.03617606	Sum Observations	1.48321856
Std Deviation	0.07569078	Variance	0.00572909
Skewness	1.1406044	Kurtosis	2.10643042
Uncorrected SS	0.28282079	Corrected SS	0.22916378
Coeff Variation	209.228914	Std Error Mean	0.01182091

Tests for Normality

Test	Statistic		p Value	
Shapiro-Wilk	W	0.91798	Pr < W	0.0059
Kolmogorov-Smirnov	D	0.151007	Pr > D	0.0193
Cramer-von Mises	W-Sq	0.18276	Pr > W-Sq	0.0085
Anderson-Darling	A-Sq	1.095384	Pr > A-Sq	0.0067

Notes: The Shapiro-Wilk test statistic allows the rejection of normality at all levels. The sample is highly kurtotic (2.11), and positively skewed (1.14). The mean annual change is 3.6%.



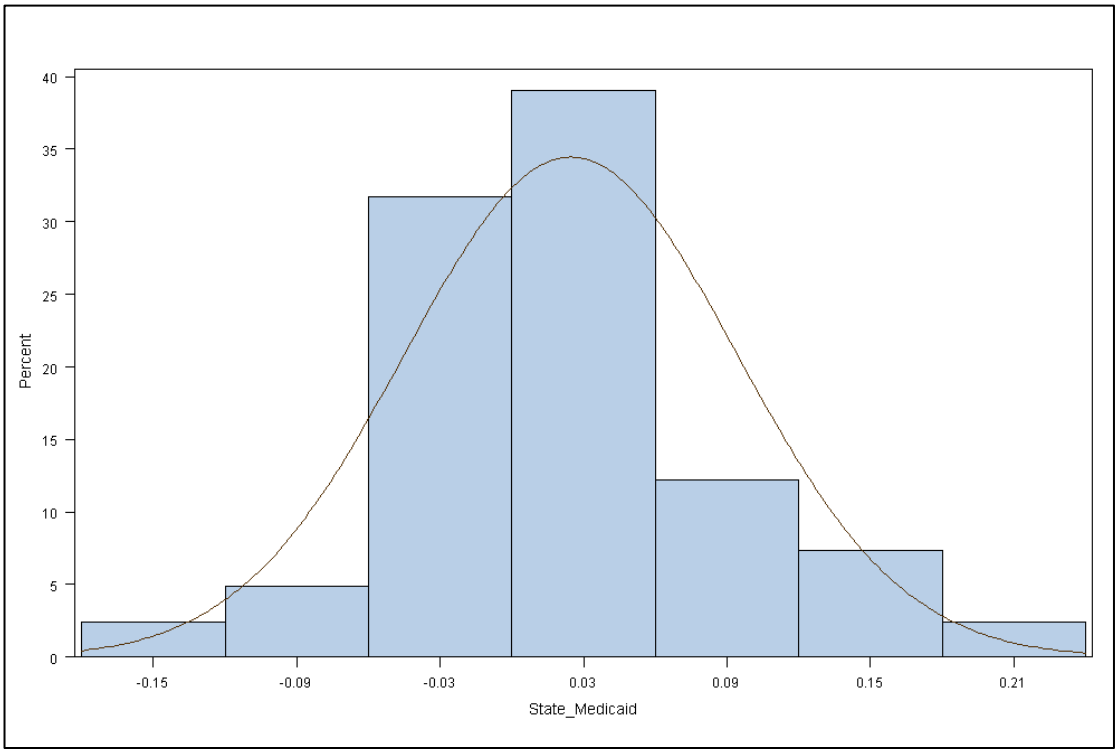
Variable: State Medicaid Spending Net of Private Spending, 1968-2008

N	41	Sum Weights	41
Mean	0.02467358	Sum Observations	1.01161674
Std Deviation	0.06946628	Variance	0.00482556
Skewness	0.23401411	Kurtosis	0.63292917
Uncorrected SS	0.21798277	Corrected SS	0.19302256
Coeff Variation	281.541158	Std Error Mean	0.01084881

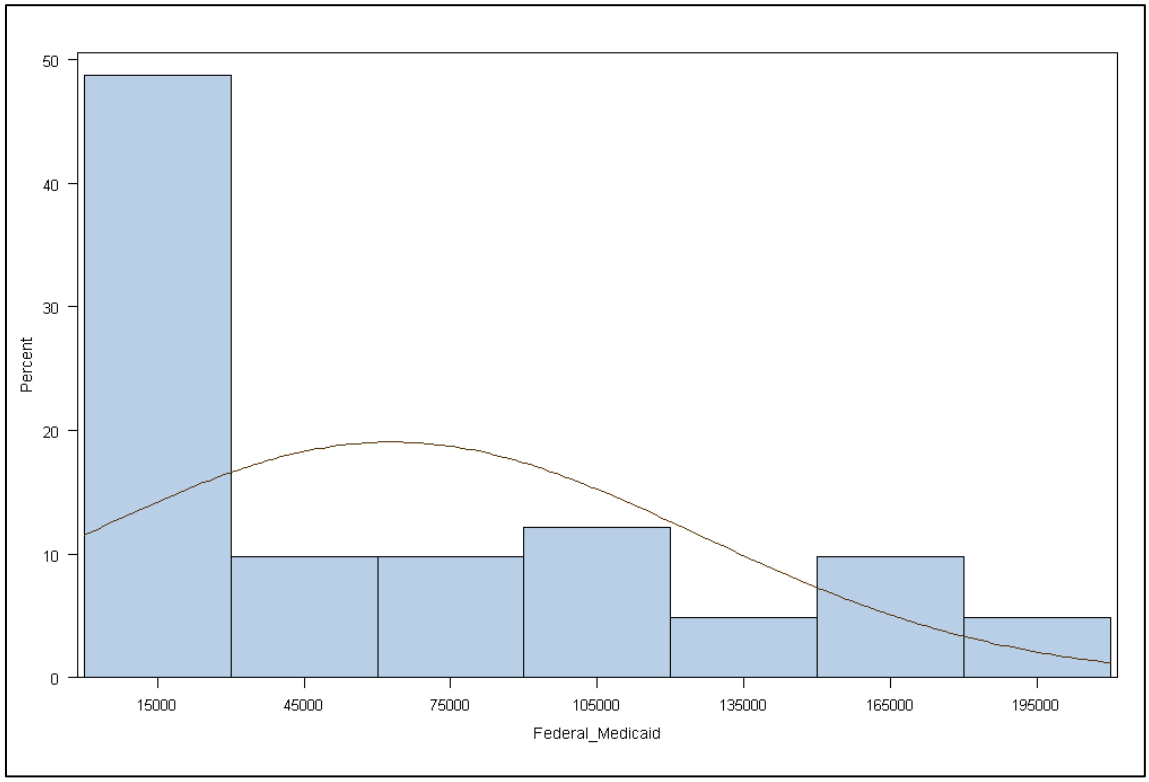
Tests for Normality

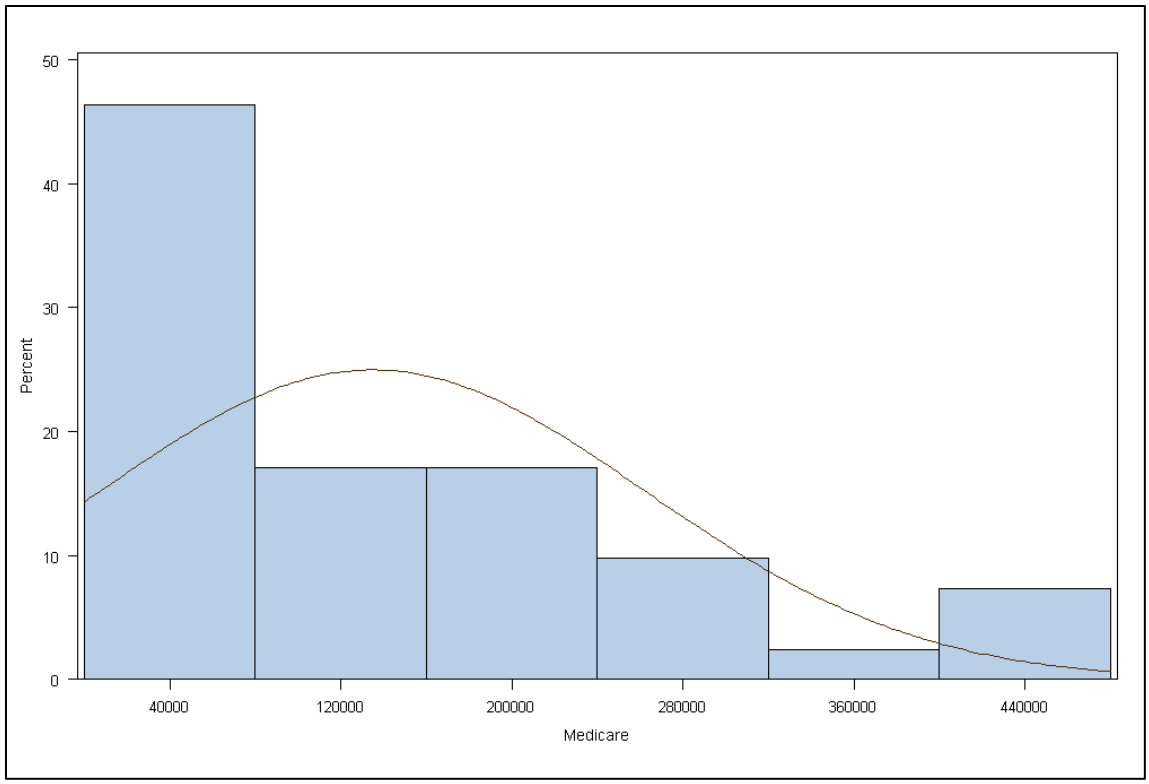
Test		Statistic		p Value	
Shapiro-Wilk		W	0.978023	Pr < W	0.6012
Kolmogorov-Smirnov	D	0.099181	Pr > D	>0.1500	
Cramer-von Mises		W-Sq	0.057127	Pr > W-Sq	>0.2500
Anderson-Darling		A-Sq	0.366809	Pr > A-Sq	>0.2500

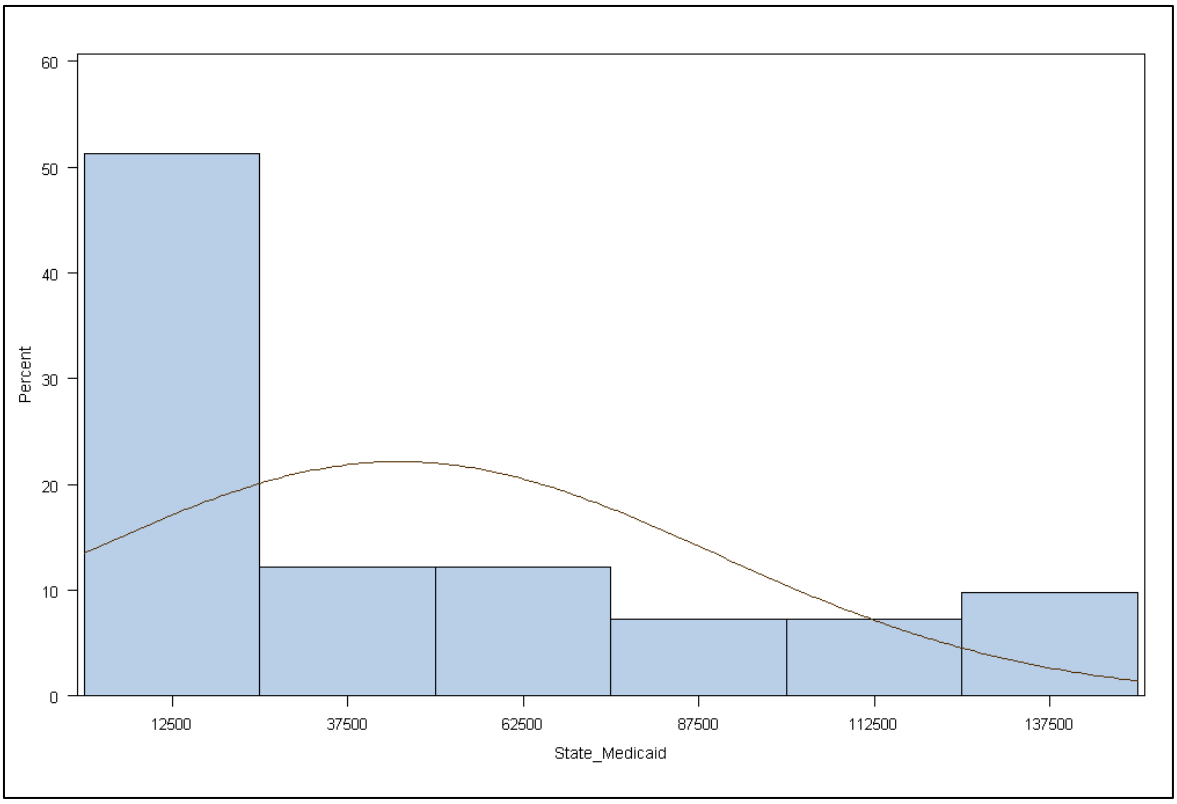
Notes: The distribution of state Medicaid expenditures net of private spending is similar to that of Medicare – the distribution appears normal (the test statistic allows us to accept the null at all levels), skew and kurtosis are positive. The mean annual change of this distribution is 2.5%.



RESULTS OF INITIAL TESTS OF DISTRIBUTION
FOR TOTAL UNADJUSTED EXPENDITURES, 1968-2008



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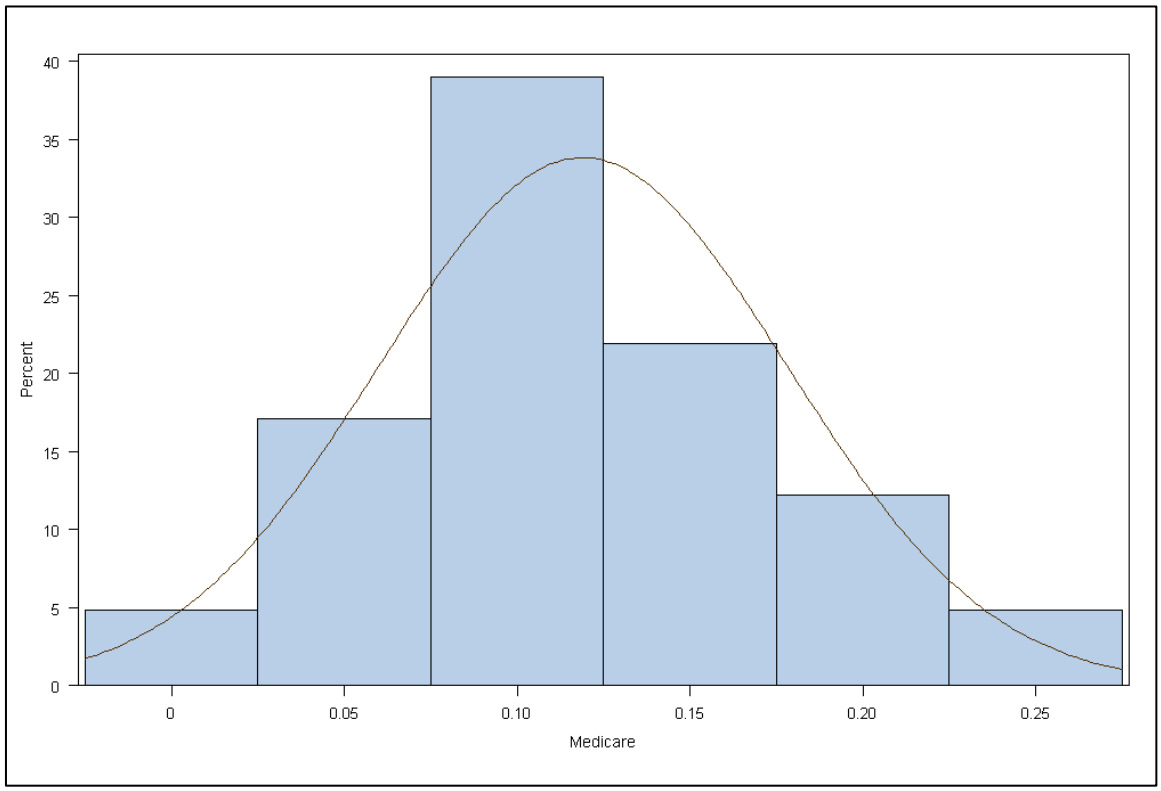
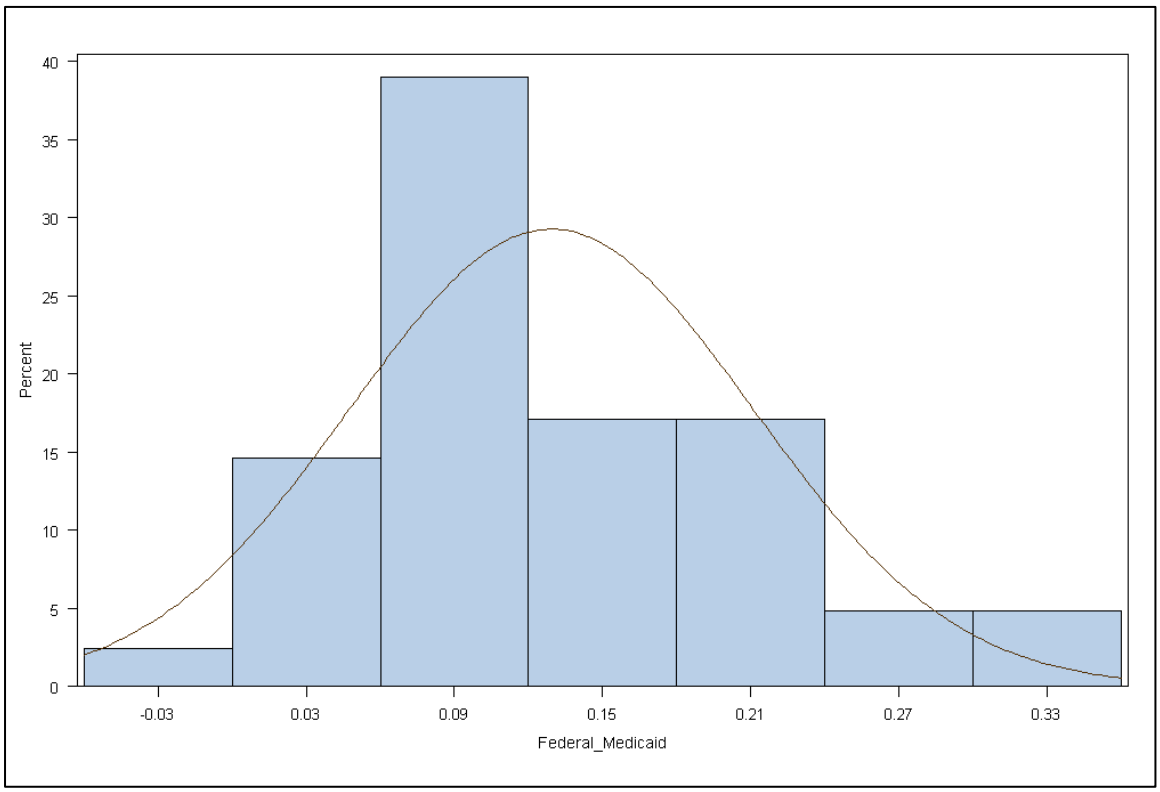
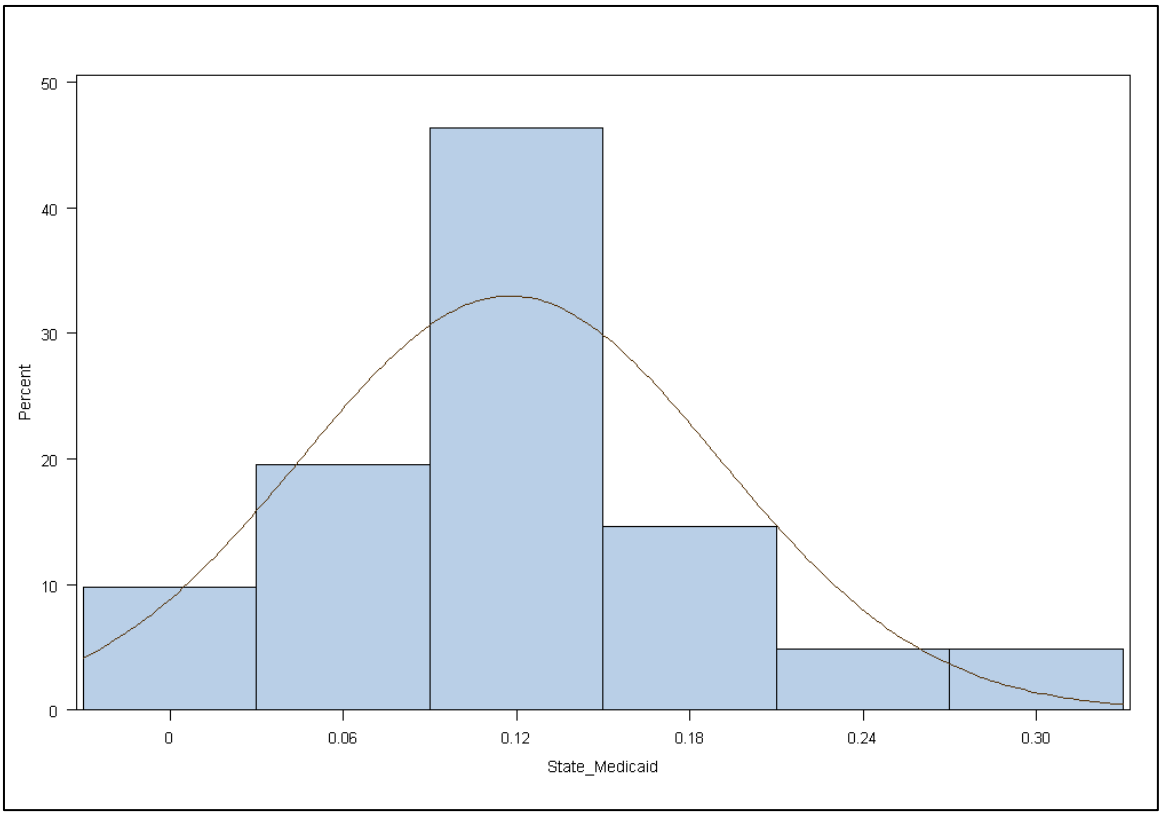
50
40
30
20
10
0
Percent
12500
37500
62500
87500
112500
137500
State_Medicaid

RESULTS OF INITIAL TESTS OF NORMALITY FOR ANNUAL PERCENTAGE CHANGE IN TOTAL UNADJUSTED EXPENDITURES, 1968-2008






50
40
30
20
10
0
Percent
0
0.06
0.12
0.18
0.24
0.30
State_Medicaid

COMPREHENSIVE LIST OF VARIABLES

Table 1: Dependent Variables Evaluated and Measures

Dependent Variable	Measure (all measures are 1960-2008, unless otherwise noted)
Percentage Change in Spending*	Continuous variables of annual inflation-adjusted percentage change in Medicare, federal Medicaid, and state Medicaid expenditures
Annual Percentage Change in Entitlement Spending Net of Private Health Spending*	Continuous variables of annual percentage change in Medicare, federal Medicaid, and state Medicaid expenditures less private health spending
Medicare Expenditures*	Continuous variable of annual program spending reported in the National Health Expenditures Accounts and natural log of this variable
Federal Medicaid Expenditures*	Continuous variable of annual program spending reported in the National Health Expenditures Accounts and natural log of this variable
State Medicaid Expenditures*	Continuous variable of annual program spending reported in the National Health Expenditures Accounts and natural log of this variable
Budget Allotted (in millions)	Continuous variable that represents the total amount in the federal budget allocated to subfunction 551 and subfunction 571.
Medicare Budget	Continuous variable listed as subfunction 571 in the federal budget
Medicaid Budget	Continuous variable listed as subfunction 551 in the federal budget

Notes:
*Indicates variable tested.

We tested four forms of the dependent variable:

(1) the percentage change in inflation-adjusted expenditures for Medicare, federal Medicaid, and state Medicaid;
(2) the percentage change in Medicare, federal Medicaid, and state Medicaid expenditures less private health spending;
(3) unadjusted total expenditures for each program; and
(4) the natural log of unadjusted total expenditures for each program.

Following Jones and Baumgartner, we considered using annual change in federal budgets allotted for subfunction 571 (Medicare) and subfunction 551(health services, including Medicaid). Medicaid represents a significant percentage of subfunction 551's total; however, the exact annual percentage is unknown. We therefore discarded this form of the dependent variable as too undefined.

Table 2: Description of PE Conceptual Elements, Independent Variables Evaluated, and Measures

PE Concept	Independent Variable	Measure (all measures are 1960-2008, unless otherwise noted)
Economic Conditions	Dow Jones	Yearly average Dow Jones Industrial Average
	Inflation*	Overall annual national inflation rate, taken from CPI
	Health Care Inflation Rate	Annual health care inflation rate, taken from CPI
	Health Care as Percent of GDP*	Continuous variable representing the total percentage of spending attributable to healthcare, taken from the NHEA compiled by CMS
	Consumer Price Index (CPI)	CPI is computed and complied by the Bureau of Labor Statistics
	Unemployment Rate*	Unemployment statistics are computed and compiled by the Bureau of Labor Statistics
	Federal Poverty Level (FPL)*	Continuous variable representing the percent of population who were at or below 125% of the FPL
Health Spending (Other Than Entitlement Expenditures)	Public Health Activity	Continuous variable representing the total amount of money spent per capita on public health activities
	Ratio of Out of Pocket Spending/Private Health Insurance [OOP/PvtHI]	Continuous variable calculated by taking the total amount of out of pocket expenditures annually and dividing it by the total amount consumers spent on private health insurance.
	Public Expenditures Per Capita (PublicPerCapita)	Continuous variable representing the total amount spent per capita on public health programs
	Total Uninsured	Continuous variable representing the total number of individuals who went without insurance during the current year [1987-2006].
	Total Uninsured (%)	Continuous variable representing the percent of individuals in the United States who went without health insurance during the current year [1987-2006].
	Change in Total Health Care Spending	Continuous variable representing the percentage change in overall health spending from the previous year

Party Control of Federal Government	Election Year*	Dummy variable representing whether a presidential election was held 0= no election, 1=election
	President's Party (POTUS Party)*	Dummy variable representing political party of elected president. 0=Not Democrat, 1= Democrat
	House Democrats (House Partisanship)*	Dummy variable based on the total percentage of Democrats in the House for specified year. If the percentage was greater than 50% then a "1" was assigned and if less than 50%, a "0" was assigned. Data were only captured every other year, so the year following the recording year was assumed to have the same number
	Senate Democrats (Senate Partisanship)*	Dummy variable based on the total percentage of Democrats in the Senate for specified year. If the percentage was greater than 50% then a "1" was assigned; if less than 50%, a "0" was assigned. Data were only captured every other year, so the year following the recording year was assumed to have the same number
Federal Legislative Attention	Senate Bills Introduced*	Continuous variable representing the total number of health care bills introduced in the Senate [1965-2005]
	House Bills Introduced*	Continuous variable representing the total number of bills introduced in the House [1961-2002]
	Senate Bills Passed	Continuous variable representing total number of health care bills passed by the Senate [1965-2005]
	House Bills Passed	Continuous variable representing total number of health care bills passed by the House [1961-2002]
	House Hearings*	Continuous variable representing the total number of health entitlement hearings held in the House for each year. Hearings filtered for any of the words "Medicare," "Medicaid," or "SCHIP" [1965-2005]
	Senate Hearings*	Continuous variable representing the total number of health entitlement hearings held in the Senate for each year. Hearings filtered for any of the words "Medicare," "Medicaid," or "SCHIP" [1965-2005]

PE Concept	Independent Variable	Measure (all measures are 1960-2008, unless otherwise noted)
Political Context	Most Important Problem (MIP)*	Dummy variable representing the top 5 most important problems annually: 0= health was not a top 5 problem and 1= health was a top 5 problem. [1960-2004]
	Voter Partisanship	Continuous percentage for 3 different political parties (Democrat, Republican, and Independent), plus 1 for apolitical [1960-2004]
	Campaign Contributions	Continuous variable across representing the total amount of money contributed to each political party by four sectors: 1) Pharmaceuticals/Health Products, 2) Health Professionals, 3) Hospitals & Nursing Homes, and 4) Health Services/HMOs. [1990-2008 every other year].
	NY Times Stories*	Continuous variable representing the total number of stories published during the year on Medicare, Medicaid, and SCHIP
	Total Number of Lobbyists	Continuous variable of the total number of registered lobbyists representing the following sectors: Pharmaceutical, Hospitals/Nursing Homes, Health Professionals, Health Services/HMOs, and Miscellaneous Health. [1998-2008].
	Total Lobbying Dollars	Continuous variable consisting of the total amount of dollars spent lobbying in the following sectors: Pharmaceutical, Hospitals/Nursing Homes, Health Professionals, Health Services/HMOs, and Miscellaneous Health [1998-2008]
	Public Support of Government Health Insurance	Continuous variable representing the public's feeling toward government involvement and health insurance captured in the American National Elections Studies (ANES) database. Seventeen (17) observations were recorded between 1960-2008, with more frequent collection occurring between 1984 and 2004
State-Level Party Control	Governors' Party*	Percentage of state governors who are Democrat
	Party Control of State Legislatures*	Percentage of state legislators who are Democrat
State Discretion	Medicaid Waivers by Year*	A cumulative continuous variable made up of the total number of 1115, 1915(b), and 1915(c) waivers issued each year across all states

Notes:
*Indicates variable tested.

Economic Conditions
Following Jones and Baumgartner, we considered annual percentage change in the Dow Jones Industrial Average, but discarded it as more tenuously related to health care spending than both inflation and health care spending as percentage of GDP. We dropped the latter variable during regression modeling due to extreme multicollinearity with another variable: the percentage of the population age 65 and older. To isolate health entitlement spending growth, we did not include the health care inflation as a right-side variable; similarly, we did not include the Consumer Price Index, as it is the basis of annual estimations of overall inflation, which we did include. As measures of Medicaid need, we included the overall unemployment rate and the percentage of the population at or below 125% of the federal poverty limit.

Health Spending
Although public health spending could be presumed to have a salutory effect on the need for personal health care spending, upon consideration we believed this connection to be too tenuous to include it as an independent variable, along with public health expenditures per capita. Similarly, the ratio of out-of-pocket spending to private health insurance expenditures was considered to be weakly associated with health entitlement spending. Change in total health spending was rejected as presenting problems with endogeneity, given that public spending represents nearly half of the total. Finally, we considered measured of uninsurance as indicators of potential need for Medicaid (as well as Medicare, for those who might be dually insured but are not), but data were unavailable prior to 1987, presenting problems with accurate estimation across the full time span under evaluation.

Political Context
Reliable data across time were available for both the Most Important Problem question administered by the Gallup Polling Organization and for coverage by *The New York Times* of Medicare, Medicaid, and SCHIP. Unfortunately, data for the other variables we considered were not available over time and were questionable in terms of their reliability.

Party Control of the Federal Government
The variable election year refers to presidential elections; congressional elections are held every two years and might also have been included. However, our rationale was that health care typically plays are larger role in presidential campaigns than, on average, in congressional contests.

Federal Legislative Attention
Of our original set of proposed variables in this context, we eliminated only bills passed in both the House and Senate, because their number was so small. As a measure of lawmakers' attention to health care, we instead used bills introduced and hearings.

State-Level Party Control and State Discretion
We included measures to test the effects of Democratic party control of state legislatures and the executive branch. We additionally included a measure of the number of waivers issued each year for all states.

RESULTS OF OLS REGRESSIONS

Dependent Variables:
1) Annual Percentage Change in Inflation-Adjusted Expenditures
2) Annual Percentage Change in Expenditures Net of Private Spending
3) Annual Change in Unadjusted Expenditures;
4) Natural Log of Annual Change in Unadjusted Expenditures

Notes: Given the small number of cases (n = 39-41) tested and the relatively large number of explanatory variables these, models may be overfitted. To assess the individual effects of the explanatory variables, we tested each singly on health entitlement spending net of private spending. Those results, which must be interpreted with caution, given omitted variable bias are presented below.

Our original models for all regressions included health spending as a percent of GDP, to capture the proportion of the national economy represented by this sector. However, because of multicollinearity with the percent of the population 65 and older, we dropped this variable.

—Medicare Spending—

Dependent Variable: Annual Percentage Change in Inflation-Adjusted Medicare Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Election Year	.0049836	.0207111	0.24	0.812	-.037512	.0474792
President Party	.0135878	.0232716	0.58	0.564	-.0341615	.0613371
Senate Partisanship	-.0450234	.0255156	-1.76	0.089*	-.0973771	.0073302
House Partisanship	.0704895	.0309416	2.28	0.031**	.0070027	.1339763
Senate Hearings	-.0029671	.0035779	-0.83	0.414	-.0103083	.0043741
House Hearings	.0014631	.0024383	0.60	0.553	-.0035399	.0064661
Senate Bills Introduced	-.0129792	.0120604	-1.08	0.291	-.0377251	.0117666
House Bills Introduced	.0156561	.011423	1.37	0.182	-.0077819	.0390940
Most Important Problem	-.0259521	.0295948	-0.88	0.388	-.0866757	.0347714
NY Times Articles	.0007853	.001072	0.73	0.470	-.0014142	.0029848
Population ≥65	-5.79e-09	4.17e-09	-1.39	0.176	-1.44e-08	2.77e-09

*significant at 0.10 level; **significant at 0.05 level

Model r^2 = 0.4793

Note: This model does not include an independent variable measuring macroeconomic conditions because 1) the dependent variable is adjusted for overall inflation and 2) the variable health care spending as a percentage of GDP was severely collinear with population 65 and older.

Dependent Variable: Annual Change in Medicare Expenditures Net of Private Spending, 1968-2008 – Tests of Individual Independent Variables

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval		r^2
Election Year (n = 41)	.0066837	.0182472	0.37	0.716	-.0302247	.043592	0.0034
President Party (n = 41)	.0014608	.0174024	0.08	0.934	-.0337388	.0366603	0.0002
Senate Partisanship (n = 41)	.0139397	.0160477	0.87	0.390	-.0185198	.0463992	0.0190
House Partisanship (n = 41)	.0456655	.019083	2.39	0.022***	.0070665	.0842644	0.1280
Senate Hearings (n = 39)	-.0033847	.0023711	-1.43	0.162	-.0081889	.0014195	0.0522
House Hearings (n = 39)	-.0019357	.001295	-1.49	0.143	-.0045597	.0006882	0.0569
Senate Bills Introduced (n = 40)	.0100522	.00592	1.70	0.098*	-.0019322	.0220365	0.0705
House Bills Introduced (n = 40)	.0139796	.0053284	2.62	0.012***	.0031928	.0247664	0.1534
Most Important Problem (n = 40)	-.0061673	.0165098	-0.37	0.711	-.0395897	.027255	0.0037
NY Times Articles (n = 41)	.0007852	.0006521	1.20	0.236	-.0005337	.0021041	0.0358
Inflation Rate (n = 41)	.0064508	.0027178	2.37	0.023***	.0009536	.0119481	0.1262
Population ≥65 (n = 39)	-1.89e-09	1.49e-09	-1.27	0.213	-4.92e-09	1.13e-09	0.0416

*significant at the 0.10 level; ***significant at the 0.02 level

Dependent Variable: Annual Percentage Change in Medicare Expenditures Net of Private Spending, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Election Year	.007429	.0170337	0.44	0.666	-.0275842	.0424423
President Party	.0241919	.0191645	1.26	0.218	-.0152013	.0635851
Senate Partisanship	-.0328012	.0211504	-1.55	0.133	-.0762766	.0106742
House Partisanship	.0508982	.0256113	1.99	0.058*	-.0017466	.1035430
Senate Hearings	-.0032628	.0029846	-1.09	0.284	-.0093976	.0028721
House Hearings	.0005637	.0020743	0.27	0.788	-.0037002	.0048276
Senate Bills Introduced	-.0153215	.0100571	-1.52	0.140	-.0359941	.0053512
House Bills Introduced	.0209857	.0093678	2.24	0.034**	.0017300	.0402415
Most Important Problem	.0204891	.0249612	0.82	0.419	-.0308193	.0717976
NY Times Articles	.001546	.0008820	1.75	0.091*	-.0002669	.0033590
Inflation Rate	.0062192	.0035529	1.75	0.092*	-.0010839	.0135224
Population ≥65	-3.74e-09	3.53e-09	-1.06	0.299	-1.10e-08	3.52e-09

*significant at the 0.10 level; **significant at the 0.05 level

Model r^2 = 0.0306

Dependent Variable: Annual Change in Unadjusted Medicare Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Election Year	.0141633	.0155750	0.91	0.372	-.0178517	.0461782
President Party	.0117607	.0175234	0.67	0.508	-.0242592	.0477805
Senate Partisanship	-.0288008	.0193393	-1.49	0.148	-.0685532	.0109516
House Partisanship	.044736	.0234181	1.91	0.067*	-.0034007	.0928726
Senate Hearings	-.0022607	.0027290	-0.83	0.415	-.0078702	.0033488
House Hearings	.0011069	.0018967	0.58	0.565	-.0027918	.0050057
Senate Bills Introduced	-.0142722	.0091959	-1.55	0.133	-.0331746	.0046302
House Bills Introduced	.0167721	.0085656	1.96	0.061*	-.0008348	.0343789
Most Important Problem	-.0026429	.0228237	-0.12	0.909	-.0495576	.0442719
NY Times Articles	.0011802	.0008064	1.46	0.155	-.0004775	.0028379
Inflation Rate	.0104482	.0032487	3.22	0.003***	.0037704	.0171260
Population ≥65	-5.04e-09	3.23e-09	-1.56	0.131	-1.17e-08	1.60e-09

*significant at the 0.10 level; ***significant at the 0.02 level

Model r^2 = 0.5755

Dependent Variable: Annual Change in Natural Log of Unadjusted Medicare Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Election Year	.1214114	.1492743	0.81	0.424	-.1860248	.4288476
President Party	.0808627	.1699628	0.48	0.638	-.2691822	.4309076
Senate Partisanship	-.2665127	.1859960	-1.43	0.164	-.6495786	.1165533
House Partisanship	.4335865	.2345408	1.85	0.076*	-.0494593	.9166323
Senate Hearings	-.0116441	.0263145	-0.44	0.662	-.0658398	.0425515
House Hearings	.0059307	.0180826	0.33	0.746	-.0313112	.0431725
Senate Bills Introduced	-.151352	.0878880	-1.72	0.097*	-.3323608	.0296567
House Bills Introduced	.1525069	.0820194	1.86	0.075*	-.0164152	.3214290
Most Important Problem	.1657107	.2259558	0.73	0.470	-.299654	.6310754
NY Times Articles	.0071206	.0078713	0.90	0.374	-.0090906	.0233318
Inflation Rate	.0896184	.0310402	2.89	0.008***	.025690	.1535468
Population ≥65	-5.05e-08	3.13e-08	-1.61	0.119	-1.15e-07	1.40e-08

*significant at the 0.10 level; ***significant at the 0.02 level

Model r^2 = 0.6339

—Federal Medicaid Spending—

Dependent Variable: Annual Percentage Change in Inflation-Adjusted Federal Medicaid Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
President Party	-.0691182	.0273993	-2.52	0.018***	-.1255481	-.0126882
Senate Partisanship	.077499	.0325752	2.38	0.025*	.0104091	.1445889
House Partisanship	-.026044	.0362471	-0.72	0.479	-.1006963	.0486083
Senate Hearings	.0066098	.0044212	1.50	0.147	-.0024958	.0157155
House Hearings	-.0041236	.0029844	-1.38	0.179	-.0102701	.0020229
Senate Bills Introduced	.0297528	.014799	2.01	0.055	-.0007264	.060232
House Bills Introduced	-.0203725	.0139176	-1.46	0.156	-.0490362	.0082913
Most Important Problem	.0156365	.0383384	0.41	0.687	-.0633229	.0945959
NY Times Articles	-.0019408	.0014538	-1.34	0.194	-.004935	.0010533
Waivers	.0055711	.0019593	2.84	0.009***	.0015359	.0096063
Unemployment Rate	.0124807	.0101158	1.23	0.229	-.0083531	.0333146
Population at 125% FPL	-.004766	.0134355	-0.35	0.726	-.032437	.0229049
Population ≥65	-8.75e-09	5.02e-09	-1.74	0.094*	-1.91e-08	1.60e-09

*significant at the 0.10 level; ***significant at the 0.02 level

Model $r^2 = 0.6279$

Note: This model does not include an independent variable measuring macroeconomic conditions because 1) the dependent variable is adjusted for overall inflation and 2) the variable health care spending as a percentage of GDP was severely collinear with population 65 and older.

Dependent Variable: Annual Change in Federal Medicaid Expenditures Net of Private Spending, 1968-2008 – Tests of Individual Independent Variables

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval		r^2
President Party (n = 41)	-.0165234	.0255902	-0.65	0.522	-.0682844	.0352375	0.0106
Senate Partisanship (n = 41)	.0852038	.0215079	3.96	0.000***	.0416999	.1287077	0.2869
House Partisanship (n = 41)	.0482397	.0292043	1.65	0.107	-.0108316	.107311	0.0654
Senate Hearings (n = 39)	-.002837	.0035804	-0.79	0.433	-.0100915	.0044175	0.0167
House Hearings (n = 39)	-.0014161	.0019632	-0.72	0.475	-.005394	.0025618	0.0139
Senate Bills Introduced (n = 40)	.0144555	.0088116	1.64	0.109	-.0033826	.0322935	0.0661
House Bills Introduced (n = 40)	.0073773	.0085156	0.87	0.392	-.0098615	.0246162	0.0194
Waivers (n = 41)	-.000134	.0010596	-0.13	0.900	-.0022774	.0020093	0.0004
Unemployment Rate (n = 41)	-.0054502	.0083745	-0.65	0.519	-.0223893	.0114889	0.0107
Population at 125% FPL (n = 41)	.0024237	.00958	0.25	0.802	-.0169537	.021801	0.0016
Inflation Rate (n = 41)	.0021302	.0042843	0.50	0.622	-.0065356	.010796	0.0063
Most Important Problem (n = 40)	.0005564	.0246539	0.02	0.982	-.0493528	.0504656	0.0000
NY Times Articles (n = 41)	-.0008022	.0009732	-0.82	0.415	-.0027707	.0011663	0.0171
Population ≥65 (n = 39)	-4.41e-09	2.14e-09	-2.06	0.047**	-8.75e-09	-6.43e-11	0.1026

****significant at the 0.05 level; ***significant at the 0.02 level**

Dependent Variable: Annual Percentage Change in Federal Medicaid Expenditures Net of Private Spending, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
President Party	-.0577023	.0274591	-2.10	0.046**	-.1143751	-.0010295
Senate Partisanship	.0880623	.0325605	2.70	0.012***	.0208608	.1552639
House Partisanship	-.0253415	.0362268	-0.70	0.491	-.1001100	.0494270
Senate Hearings	.0066262	.0046305	1.43	0.165	-.0029307	.0161831
House Hearings	-.003349	.0030683	-1.09	0.286	-.0096815	.0029836
Senate Bills Introduced	.0278864	.0147868	1.89	0.071*	-.0026319	.0584048
House Bills Introduced	-.0104463	.0137961	-0.76	0.456	-.0389201	.0180274
Most Important Problem	.0069374	.0382555	0.18	0.858	-.0720182	.0858930
NY Times Articles	-.0005251	.0014423	-0.36	0.719	-.0035018	.0024517
Inflation Rate	-.0000412	.0053951	-0.01	0.994	-.0111761	.0110937
Waivers	.0057178	.0019443	2.94	0.007***	.0017050	.0097306
Unemployment Rate	-.0065072	.0106028	-0.61	0.545	-.0283904	.0153760
Population at 125% FPL	.0078579	.0140192	0.56	0.580	-.0210763	.0367921
Population ≥65	-7.92e-09	5.10e-09	-1.55	0.134	-1.85e-08	2.61e-09

**significant at the 0.05 level; ***significant at the 0.02 level

Model r^2 = 0.6108

Dependent Variable: Annual Change in Unadjusted Federal Medicaid Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
President Party	-.0674697	.0252844	-2.67	0.014***	-.1197744	-.015165
Senate Partisanship	.0868446	.0299808	2.90	0.008***	.0248246	.1488647
House Partisanship	-.0333716	.0333668	-1.00	0.328	-.1023961	.0356529
Senate Hearings	.0057941	.0043089	1.34	0.192	-.0031196	.0147077
House Hearings	-.0030032	.0028279	-1.06	0.299	-.0088532	.0028469
Senate Bills Introduced	.0279347	.0138132	2.02	0.055*	-.0006401	.0565096
House Bills Introduced	-.0156865	.0127734	-1.23	0.232	-.0421102	.0107373
Most Important Problem	.0049921	.0354203	0.14	0.889	-.0682803	.0782645
NY Times Articles	-.0013232	.0013294	-1.00	0.330	-.0040733	.0014269
Inflation Rate	.0027015	.0049832	0.54	0.593	-.007607	.0130099
Waivers	.0054755	.0017902	3.06	0.006***	.0017721	.0091788
Unemployment Rate	-.0013167	.010666	-0.12	0.903	-.023381	.0207476
Population at 125% FPL	-.0002018	.0133744	-0.02	0.988	-.0278689	.0274654
Population ≥65	-1.01e-08	4.75e-09	-2.12	0.045**	-1.99e-08	-2.67e-10

*significant at the 0.10 level; **significant at the 0.05 level; ***significant at the 0.02 level

Model r^2 = 0.7146

Dependent Variable: Annual Change in Natural Log of Unadjusted Federal Medicaid Expenditures, 1968-2008 (n = 39)						
Independent Variable	**Coefficient**	**Std Error**	**t**	**P>|t|**	**95% Confidence Interval**	
President Party	-.4673197	.2140428	-2.18	0.040**	-.9112174	-.0234221
Senate Partisanship	.6872199	.2561476	2.68	0.014***	.1560024	1.218437
House Partisanship	-.07517	.3177999	-0.24	0.815	-.7342467	.5839068
Senate Hearings	.0285943	.0363663	0.79	0.440	-.0468247	.1040134
House Hearings	-.0189218	.0238664	-0.79	0.436	-.0684177	.0305741
Senate Bills Introduced	.2198749	.122643	1.79	0.087*	-.0344711	.4742208
House Bills Introduced	-.1301495	.1123889	-1.16	0.259	-.3632299	.1029309
Most Important Problem	.1043038	.299397	0.35	0.731	-.5166076	.7252151
NY Times Articles	-.0105176	.0128185	-0.82	0.421	-.0371015	.0160663
Inflation Rate	.0156737	.0436787	0.36	0.723	-.0749105	.1062578
Waivers	.0316242	.0172171	1.84	0.080*	-.0040817	.0673302
Unemployment Rate	.0231985	.0968529	0.24	0.813	-.177662	.2240591
Population at 125% FPL	-.064579	.1190821	-0.54	0.593	-.31154	.1823821
Population ≥65	-5.17e-08	4.34e-08	-1.19	0.246	-1.42e-07	3.83e-08
*significant at the 0.10 level; **significant at the 0.05 level; ***significant at the 0.02 level						
Model r^2 = 0.6418						

—State Medicaid Spending—

Dependent Variable: Annual Percentage Change in Inflation-Adjusted State Medicaid Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Governor's Party	-.2764945	.2024701	-1.37	0.182	-.6894351	.1364460
Party Control of State Leg.	.0236567	.191229	0.12	0.902	-.3663574	.4136707
Waivers	.0036493	.0018421	1.98	0.057*	-.0001078	.0074063
Population at 125% FPL	-.019467	.0122913	-1.58	0.123	-.0445352	.0056013
Unemployment Rate	.0364622	.0146231	2.49	0.018**	.0066381	.0662863
Most Important Problem	.0359784	.0326339	1.10	0.279	-.030579	.1025358
Population ≥65	-1.53e-08	4.38e-09	-3.48	0.002***	-2.42e-08	-6.32e-09

*significant at 0.10 level; **significant at the 0.05 level; ***significant at the 0.02 level

Model $r^2 = 0.3612$

Note: This model does not include an independent variable measuring macroeconomic conditions because 1) the dependent variable is adjusted for overall inflation and 2) the variable health care spending as a percentage of GDP was severely collinear with population 65 and older.

Dependent Variable: Annual Percentage Change in State Medicaid Expenditures Net of Private Spending, 1968-2008 – Results of Individual Variable Tests

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval		r^2
Governor's Party (n = 41)	.0021473	.0912432	0.02	0.981	-.1824096	.1867042	0.0000
Party Control of State Leg (n = 41)	-.019144	.0880362	-0.22	0.829	-.197214	.1589260	0.0012
Waivers (n = 41)	.0004729	.0009698	0.49	0.628	-.0014886	.0024344	0.0061
Population at 125% FPL (n = 41)	-.0003084	.0087992	-0.04	0.972	-.0181065	.0174898	0.0000
Unemployment Rate (n = 41)	-.0001181	.0077274	-0.02	0.988	-.0157483	.0155121	0.0000
Inflation (n = 41)	-.0001655	.0039443	-0.04	0.967	-.0081436	.0078127	0.0000
Most Important Problem (n = 37)	.0168226	.0239277	0.70	0.487	-.0317533	.0653985	0.0139
Population ≥65 (n = 41)	-1.28e-09	2.05e-09	-0.62	0.538	-5.44e-09	2.89e-09	0.0103

Note: no variables are individually significant

Dependent Variable: Annual Percentage Change in State Medicaid Expenditures Net of Private Spending, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Governor's Party	-.0481986	.2214512	-0.22	0.829	-.5004623	.4040652
Party Control of State Leg.	-.0983242	.2128087	-0.46	0.647	-.5329374	.3362891
Waivers	.0039231	.002006	1.96	0.060*	-.0001738	.0080199
Population at 125% FPL	-.0150874	.0137646	-1.10	0.282	-.0431986	.0130237
Unemployment Rate	.017385	.0160834	1.08	0.288	-.0154617	.0502318
Inflation Rate	-.0009683	.0054676	-0.18	0.861	-.0121346	.0101981
Most Important Problem	0486007	.0358028	1.36	0.185	-.0245183	.1217197
Population ≥65	-1.25e-08	4.87e-09	-2.57	0.015***	-2.25e-08	-2.58e-09
*significant at 0.10 level; ***significant at the 0.02 level						
Model r^2 = 0.4861						

Dependent Variable: Annual Change in Unadjusted State Medicaid Expenditures, 1968-2008 (n = 38)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Governor's Party	-.1375248	.1997879	-0.69	0.497	-.5461371	.2710874
Party Control of State Leg.	.0391381	.1917297	0.20	0.840	-.3529932	.4312694
Waivers	.0035558	.0018025	1.97	0.058*	-.0001308	.0072423
Population at 125% FPL	-.010814	.0133348	-0.81	0.424	-.0380866	.0164587
Unemployment Rate	.0101882	.0161041	0.63	0.532	-.0227485	.0431248
Inflation Rate	.0007057	.0049465	0.14	0.888	-.0094111	.0108225
Most Important Problem	.0262966	.0323966	0.81	0.424	-.039962	.0925551
Population ≥65	-1.49e-08	4.40e-09	-3.38	0.002	-2.39e-08	-5.88e-09
*significant at the 0.10 level						
Model r^2 = 0.3676						

Dependent Variable: Annual Change in Natural Log of Unadjusted State Medicaid Expenditures, 1968-2008 (n = 39)

Independent Variable	Coefficient	Std Error	t	P>|t|	95% Confidence Interval	
Governor's Party	-3.083334	2.173742	-1.42	0.166	-7.522707	1.35604
Party Control of State Leg.	1.539199	2.088908	0.74	0.467	-2.72692	5.805317
Waivers	.0413885	.0196911	2.10	0.044**	.0011739	.0816031
Population at 125% FPL	-.1746561	.1351123	-1.29	0.206	-.4505923	.101280
Unemployment Rate	.3356153	.1578732	2.13	0.042**	.0131952	.6580355
Inflation Rate	-.0393502	.0536696	-0.73	0.469	-.1489581	.0702576
Most Important Problem	.3715324	.3514363	1.06	0.299	-.3461962	1.089261
Population ≥65	-1.41e-07	4.78e-08	-2.95	0.006***	-2.39e-07	-4.34e-08
**significant at the 0.05 level; ***significant at the 0.02 level						
Model r^2 = 0.3003						

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