Gradual Rebalancing Of Medicaid Long-Term Services And Supports Saves Money And Serves More People, Statistical Model Shows

ABSTRACT States are shifting Medicaid spending on long-term services and supports from institutional to home and community-based services, a process known as rebalancing. Using fifteen years of state expenditure data, a statistical model was developed to assess the effect of rebalancing on overall spending for long-term services and supports. The model indicates that spending is affected by the way rebalancing is implemented: Gradual rebalancing, by roughly two percentage points annually, can reduce spending by about 15 percent over ten years. More rapid rebalancing can save money, break even, or increase spending, depending on the pace and program specifics. Cuts to home and community-based services that hinder rebalancing are likely to increase, not decrease, overall spending on long-term services and supports as people who were receiving these services shift into nursing homes. Because many states continue to experience budget crises, policy makers must think carefully before altering spending patterns for long-term services and supports and adopt strategies that particular states have used to successfully reduce overall spending, such as gradually shifting expenditures toward home and community-based waiver programs.

The term rebalancing refers to a shift of spending on long-term services and supports away from institutional settings such as nursing homes—originally the only option provided under Medicaid—to services provided in people’s homes and communities. Pressure to rebalance Medicaid long-term services and supports comes from many sources. Disability and senior advocacy groups have exerted political pressure on state and federal policy makers to increase home and community-based services, based on a strong preference among consumers to remain in their homes and communities rather than become institutionalized. Federal law, as enacted in the Americans with Disabilities Act of 1990 and interpreted by the Supreme Court in the Olmstead decision, mandates that long-term services be provided “in the most integrated setting appropriate to the needs of the individual.” Settlements of numerous Olmstead-related lawsuits filed against the states and increased enforcement of the Americans with Disabilities Act by the Department of Justice have motivated many states to launch new programs for home and community-based services.

Rebalancing is also promoted by federal policies, such as the Community Living Initiative of the Department of Health and Human Services, and various incentives contained in the Affordable Care Act of 2010. A moral—if not legal—imperative for offering home and community-based services is contained in the UN Convention on the Rights of Persons with Disabilities—which the United States has signed, and which
establishes living in the community with access to long-term services as a human right.

For some populations and in some states, much rebalancing for long-term services and supports has already occurred. During the past two decades, Medicaid-financed long-term services and supports for people with intellectual and developmental disabilities have mostly moved away from institutional and toward community-based services. But for people with other types of disabilities, including those with aging-related physical and cognitive impairments, only six states spent more on home and community-based than institutional long-term services and supports in 2009, and some states spent only a token proportion of the money for long-term services and supports on home and community-based services.

**Medicaid’s Three Main Programs**

Noninstitutional long-term services and supports are provided primarily through Medicaid’s three main home and community-based services programs: waivers, personal care, and home health.

**Waivers** Home and community-based waivers, also known as 1915(c) waivers, provide an array of medical and nonmedical services, including personal assistance with daily activities, to selected populations identified by each state, generally based on age and type of disability. Recipients must meet their state’s eligibility requirement for institutional services. The home and community-based services received may be extensive.

**Personal Care** Personal care services programs, an optional Medicaid benefit offered by a majority of states, provide personal assistance with daily activities to people meeting the state’s functional criteria for such need. The eligible population is generally much broader than that covered under the waivers. However, the services provided are often limited to a relatively small number of hours of help per week.

**Home Health** The home health benefit, available in all states to a broad Medicaid population needing such services, offers medically based services provided by nurses, home health aides, and other providers in the home, as well as certain medical supplies and equipment. Although the focus is medical, assistance with daily activities can be one component of these services.

**Rebalancing And Cost**

Resistance to rebalancing often arises out of a perception that offering home and community-based services adds to the overall cost of Medicaid long-term services and supports. Having effectively rationed publicly financed services by offering them only in a setting that few people voluntarily enter, policy makers in states that have only minimally rebalanced their Medicaid programs fear that people not currently receiving services will “come out of the woodwork” in droves to demand services offered at home or in other community settings.

Although it seems clear that Medicaid home and community-based services programs serve many more people than would be served if institutional services were the only option, spending on services for each participant is less. The real issue of the so-called woodwork effect is whether the extra participants, whose needs might have gone unmet in an institutional-only system but are now presumably met by home and community-based services, cause aggregate program costs to exceed those for an unrebalanced long-term services and supports system.

One study found that during a decade of expanding noninstitutional long-term services in many states, those states with a high proportion of spending on home and community-based services spent no more on long-term services and supports than other states. Furthermore, states with well-established home and community-based services programs saved money on long-term services and supports over time compared to states spending a low proportion on home and community-based services.

The study reported here extends that work with the construction of a statistical model, based on historical spending data, to predict the effect of rebalancing on spending for long-term services and supports. The analysis addresses the question of how a gradual or rapid shift of dollars from institutional long-term services and supports to home and community-based services—or, conversely, a shift of dollars away from such services—affects overall spending on long-term services and supports.

**Study Data And Methods**

**Data** State and District of Columbia data on Medicaid spending for long-term services and supports for 1995 through 2009 were obtained from reports submitted by state Medicaid agencies to the Centers for Medicare and Medicaid Services. The analysis included data on spending for waiver programs, personal care services programs, and the home health benefit, as well as for services received in nursing homes.

Money spent on waiver programs and institutions for people with intellectual or other developmental disabilities was excluded from the analysis. Arizona was omitted from the entire...
analysis and four other states were omitted in selected years because data on their expenditures for long-term services and supports were not available separately by setting and disability type. Adjustments to and exclusion of certain data points, including exclusions because states overreported expenditures, are explained in the online Appendix.19

For use in the statistical model, reported spending data were converted to per capita, inflation-adjusted amounts. Per capita spending was first obtained by dividing each state’s reported expenditure by the population of the state in the given year. This calculation removes the effect of population size, as well as changes in the population over time. Then the per capita expenditures were adjusted by a yearly factor, obtained from the Bureau of Labor Statistics,20 to account for inflation.

As indicated above, long-term services and supports include both medical services, such as home health and much of waiver and nursing home services, and nonmedical services such as personal assistance provided via personal care services or waivers. The mixture of expenditures makes the choice of an inflation-adjustment factor somewhat arbitrary, but the choice does not affect the main predictions of the model. The inflation adjustment for medical care services was used, for consistency with prior analyses.

**Methods** Using per capita, inflation-adjusted spending on overall long-term services and supports—institutional plus home and community-based services—the percentage change from one year to the next was calculated and used as the outcome (or dependent) variable in the model. Also calculated for each year was the percentage of spending for long-term services and supports devoted to each of the home and community-based services programs (waivers, personal care services, and home health). The year-to-year change in each percentage was used in the model as a predictor (or independent) variable.

Thus, the model used the yearly change in the proportion of dollars for long-term services and supports going to home and community-based services in each state to predict the change in overall spending for long-term services and supports in that state, with data from all states pooled together into the same model (known as a pooled cross-sectional time series). The model is estimated in the form of a fixed-effects linear regression, meaning that the focus is primarily on the trend over time within each state, rather than differences among states.

Prior research suggests that the relationship between rebalancing and spending for long-term services and supports might be nonlinear. In other words, modest increases in spending for home and community-based services might save money, but larger, sudden shifts to these services might instead increase spending.16 This hypothesis was confirmed in the initial phase of the analysis, using a standard method of including multiple variables measuring the amount of change in each type of spending (for example, the percentage-point change in waiver spending, along with the square of that change and the square root of that change) in the model. The final model included two variables for each of the three home and community-based services programs: the year-to-year percentage-point change and the square root of the percentage-point change.21

All six of the principal predictors in the model were highly significant, and the same pattern was observed in all cases: The change in the proportion of spending for long-term services and supports going to each type of home and community-based service was positively associated with overall spending for long-term services and supports. However, the square root term was negatively associated with spending for long-term services and supports and with a larger coefficient. This complex relationship means that for smaller percentage-point changes, rebalancing is predicted to reduce overall spending for long-term services and supports, but larger percentage-point changes are predicted to increase overall spending.

In other words, gradually increasing the fraction of spending for long-term services and supports devoted to any home and community-based services reduces total spending, according to the model, but rapidly increasing the percentage has the potential to increase total spending. The model indicates that increasing waivers in any one year by less than about 2.1 percentage points, or personal care services by less than about 1.6 percentage points, is likely to result in lower overall spending. Amounts much larger than those are likely to increase spending.

Increasing home health spending by a typical amount of under one percentage point per year will also reduce total spending on long-term services and supports, according to the model. However, it does not offer a clear prediction for larger annual shifts toward home health spending, because data are very limited from states that have made such a shift.

**Limitations** The analysis reported in this article has limitations. The generalizability of the findings may be limited by the absence of data from existing managed care systems for long-term services and supports. Such data are not reported in a form that allows spending to be distinguished by setting and type of disability.

In addition, misreported spending by certain
states, as mentioned above, may add uncertainty to the analysis. Finally, although the model does a reasonable job of explaining the trends in state-by-state spending for long-term services and supports, it fails to account for much of the variation across states in such spending.

Study Results

**REBALANCING’S EFFECT ON LONG-TERM SERVICES SPENDING** According to the model, states that gradually increased their spending on home and community-based services saved money compared to the amounts that they would have spent had they done nothing to shift expenditures away from institutional services. Average overall spending on long-term services and supports for the period 1995–2009 for eleven such states (Connecticut, Florida, Indiana, Maine, Massachusetts, Mississippi, Nevada, Ohio, Pennsylvania, South Carolina, and Wyoming) are shown in Exhibit 1.22

The red solid line represents the model predictions, averaged across those states. The red dashed line represents the model prediction in the hypothetical case in which no rebalancing had occurred (in other words, if the percentage devoted to home and community-based services had remained constant at the 1995 level). The vertical gap between the dashed and solid lines represents the average per capita savings accrued by those states because of rebalancing, according to the model. By 2009 that savings was $18.60 per capita, or 6.3 percent.

Also shown in Exhibit 1 is total per capita spending on long-term services and supports averaged across ten states (Alaska, Colorado, Idaho, Illinois, Louisiana, Minnesota, North Carolina, Oklahoma, Texas, and Washington) that shifted rapidly toward home and community-based services during the same period.23 Because of the fast pace of their rebalancing, the model predicted that the long-term spending on services and supports for these states was much greater than it would have been in the absence of any shift toward home and community-based services. In 2009, according to the model, the states were spending a per capita average of $34.69, or 16.4 percent, more than they would have spent without any rebalancing.

In both groups of states, the shift toward home and community-based services was accompanied by an increase in the number of people receiving services. Consistent, reliable data on participants for all types of services (nursing homes, waivers, personal care services, and home health) were available only for part of the period, from 2003 through 2008.24,25 During that five-year period, the gradually rebalancing states increased their spending on home and community-based services by 5.5 percentage points and their average number of service recipients by 8.4 percent. The rapidly rebalancing states increased their spending on home and community-based services by 10.9 percentage points and served 29.9 percent more consumers.

**EXHIBIT 1**

Per Capita Spending On Long-Term Services And Supports By States That Rebalanced Spending, 1995–2009

[Graph showing spending trends]

**SOURCES** Author’s analysis. **NOTES** Data were adjusted for inflation. See text for gradually and rapidly rebalancing states. LTSS is long-term services and supports.
MODEL PREDICTIONS FOR REBALANCING IN A TYPICAL STATE

What are the consequences of gradually or rapidly shifting spending toward home and community-based services? The model predictions for three rebalancing scenarios are shown in Exhibits 2–4.

The first scenario, a relatively gradual rebalancing pattern, shifts an additional 1 percent annually of spending on long-term services and supports toward both waivers and personal care services. The resulting two-percentage-point annual increase in all home and community-based services yields substantial savings (Exhibit 2).

In the exhibit, the dashed blue flat line represents the inflation-adjusted per capita spending on long-term services and supports predicted in the absence of any rebalancing. Unrebalanced expenditures would be expected to be relatively flat, following the inflation adjustment, according to the model. The solid blue line below indicates the model’s prediction for savings relative to the dashed line. The vertical lines indicate the 95 percent confidence interval. Rebalancing yields savings of 1.5 percent (95% confidence interval: 0.8, 2.3) over one year and 15.4 percent (95% confidence interval: 7.6, 23.2) over ten years.

According to the model, it is possible to speed up the rebalancing and still save money when the more rapid rebalancing emphasizes waivers. The second scenario (Exhibit 3), a two-percentage-point increase per year in waivers, coupled with the same one-percentage-point annual increase in personal care services from the previous scenario, would save 0.9 percent in one year (95% confidence interval: 0.1, 1.6) or 8.6 percent (95% confidence interval: 0.7, 16.4) in ten years.

Rebalancing more rapidly than in the second or third scenarios would probably result in increased spending, according to the model. For example, increasing spending on both waiver and personal care services by two percentage points per year is predicted to increase spending by 6.0 percent after ten years (the 95% confidence interval ranges from savings of 2.8 percent to a 14.9 percent cost increase).

EFFECT OF REDUCING HOME AND COMMUNITY-BASED SERVICES SPENDING

The model also offers predictions for the scenario in which there is a reduction in the proportion of spending on long-term services and supports going to home and community-based services—in other words, for the opposite of rebalancing. States can create this situation either by reducing spending on home and community-based services or by increasing spending on nursing home services, relative to each other.

The effect of a gradual reduction in the proportion of spending going to home and community-based services is illustrated in Exhibit 5. The scenario reflects the flip side of the gradual increases shown in Exhibit 2, with total spending compared to the same state’s expenditures without rebalancing.

Another rapid-rebalancing scenario shows the state breaking even. Exhibit 4 illustrates the third scenario, a reversal of the second scenario, in which a two-percentage-point annual increase goes to personal care services and a one-percentage-point annual increase goes to waivers. There is an insignificant estimated savings of 0.8 percent after ten years (the 95% confidence interval ranges from savings of 9.7 percent to an 8.0 percent cost increase).

Rebalancing more rapidly than in the second or third scenarios would probably result in increased spending, according to the model. For example, increasing spending on both waiver and personal care services by two percentage points per year is predicted to increase spending by 6.0 percent after ten years (the 95% confidence interval ranges from savings of 2.8 percent to a 14.9 percent cost increase).

EXHIBIT 2

Predicted Trend In Spending On Long-Term Services And Supports During Gradual Rebalancing, By Year

SOURCE Author’s analysis. NOTES Predicted spending ($) is shown by blue lines and relates to the right-hand y axis. Percentage of spending, shown by green, purple, and red lines, relates to the left-hand y axis. LTSS is long-term services and supports.
on long-term services and supports predicted to increase as a consequence of the shift away from home and community-based services. A reduction of one percentage point per year in the proportion of funds for long-term services and supports devoted to both waivers and personal care services results in an increase in total spending of 1.5 percent in one year (95% confidence interval: 0.8, 2.3), or 15.4 percent in ten years (95% confidence interval: 7.5, 23.3). Annual reductions of one percentage point in either waivers or personal care services (as opposed to both simultaneously) result in increased spending of about half that amount, according to the model.

Because the available expenditure data did not capture any large reductions in the percentage of spending devoted to home and community-based services, the model could not be used to predict the effect of rapid reductions in such services.

**Discussion**

A careful statistical analysis of fifteen years of Medicaid spending on long-term services and supports in forty-nine states and the District of Columbia suggests that rebalancing in favor of home and community-based services can greatly reduce overall spending on long-term services and supports, when done at a deliberate pace.
According to the model, a steady, gradual shift of monies toward waiver programs, personal care services, and home health programs is the best strategy for optimizing the bottom line. More rapid rebalancing can save money if the emphasis is on waiver programs or be cost-neutral if the shift favors personal care services. All of this occurs while states are increasing the proportion of their population whose needs for long-term services and supports are being met, far exceeding those who would have been served in institutions.

The greater level of savings achieved through waiver programs compared to personal care services is likely to be related to the difference in the two types of programs. Waivers typically provide a high level of services to a narrowly defined population that has been identified to be at clear risk of institutionalization. Reductions in institutional spending would be more likely to accrue from expanding waiver programs, therefore, than from the more broadly targeted and often more limited services provided through the personal care services benefit. The latter may offer other advantages, however, which are not necessarily reflected in cost savings for long-term services and supports. For example, people not at imminent risk of institutionalization may be able to obtain services they need to leave their homes and engage in community activities.

Sudden, large shifts in favor of home and community-based services tend to increase spending beyond the amounts that would have been spent without rebalancing. An examination of spending trends and model predictions among states that shifted rapidly confirmed earlier findings that rapid expansion of home and community-based services, which often occurs when a new program is launched, can cause an initial bump in spending, potentially followed by a downward trend as expansion slows.

Another occasion when overall spending on long-term services and supports is likely to increase, according to the model, is when states reduce spending on home and community-based services programs, compared to institutional spending. People who were receiving services may shift from lower-cost community-based services to more-expensive nursing home services, thus increasing total costs.

The issue is far from hypothetical: Budget shortfalls have led to actual or planned implementation of benefit reductions, program restrictions, eligibility limitations, or rate reductions in one or more home and community-based programs in twenty states, according to recent surveys of state Medicaid departments. Based on the results of this analysis, these states seem unlikely to realize any meaningful cost savings, compared to potentially more fruitful reductions in institutional spending.

**Policy Implications**

As many states continue to experience budget crises, policy makers must think carefully before altering spending patterns for long-term services and supports, and adopt strategies that states have used to successfully reduce overall spending. Reducing spending on home and community-based services, such as by eliminating waiver or personal care programs or limiting benefits, appears to be the worst approach in terms of saving money and will probably result in increased overall spending.

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**Exhibit 5**

Predicted Trend In Spending On Long-Term Services And Supports During Home And Community-Based Services Reduction, By Year

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**Source** Author’s analysis. **Notes** Predicted spending ($) is shown by blue lines and relates to the right-hand y axis. Percentage of spending, shown by green, purple, and red lines, relates to the left-hand y axis. LTSS is long-term services and supports.
on long-term services and supports. In contrast, increasing investments in existing home and community-based programs—perhaps through expanded eligibility, better outreach, or higher caps on service hours—would seem to be the best way of reducing spending on long-term services.

Even when states undertake rapid expansions in home and community-based services, such as through creating new personal care services plans or large-scale waiver programs, a carefully developed strategy can result either in a reduction of overall spending or cost-neutrality, and in providing services to a much larger proportion of people in need of them. Historically, states have often seen a noticeable increase in spending on long-term services and supports under such circumstances, probably the result of having to create the infrastructure for the new program.

The Affordable Care Act contains provisions designed to offset these start up costs. Over the short term, states qualifying for the State Balancing Incentives Payment Program can receive an enhanced federal reimbursement for their home and community-based programs if they greatly expand those programs. Over the long term, the Community First Choice Option allows states to receive an enhanced federal reimbursement for a newly established, broadly based program of personal assistance services.

Many states are implementing, proposing, or considering the integration of long-term services and supports into a managed care system that encompasses acute health care benefits, in particular for “dual eligibles”—those people covered under both Medicaid and Medicare. For the majority of states with a history of only fee-for-service long-term care, such a shift takes them into uncharted territory.

The findings from this analysis, although based on historical spending in fee-for-service systems, could help guide the development of managed care systems to optimize potential expansion of services while containing costs. For example, rapid expansion of services should be undertaken only in a carefully targeted approach. When they offer incentives to continue rebalancing in favor of home and community-based services, states should be cautious in assuming that such shifts will yield automatic savings in the absence of careful implementation.

**Conclusion** For a given Medicaid expenditure on long-term services and supports, home and community-based programs serve many more people than institutional services and do so in a setting and manner that the public greatly prefers. Therefore, these programs better meet the demand for services. They can also be implemented so that overall spending on long-term services and supports is reduced or unchanged.

Through home and community-based services programs, states can comply with the Americans with Disabilities Act, satisfy advocacy groups, and enable their citizens to maintain ties to their communities, while also helping balance budgets in difficult economic times.

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**NOTES**

7 Ng T, Wong A, Harrington C. Table of Olmstead and Olmstead-related lawsuits [Internet]. San Francisco (CA): Center for Personal Assistance Services; 2011 [last updated 2012 Apr; cited 2012 Apr 20]. Available from: http://www.pascenter.org/olmstead/olmsteadcases.php
14 Kitchener M, Ng T, Miller N, Harrington C. Institutional and community-based long-term care: a
20 Bureau of Labor Statistics. To access the Appendix, click on the corresponding link in the box to the right of the article online.
21 When the amount of spending decreased from one year to the next, producing a negative percentage-point change, the “square root” variable was given a value of minus the square root of the absolute value of the percentage change. This calculation is known as a signed square root transform.
22 The following criteria were used to select gradually rebalancing states: All fifteen years of expenditure data were used in the model; the increase between 1995 and 2009 in the proportion of long-term services and supports dollars devoted to home and community-based services was at least five percentage points; and no three-year increase in home and community-based services was greater than nine percentage points.
23 Rapidly rebalancing states met the first and second criteria, but not the third, for the gradual rebalancing states (see Note 22).
25 Ng T, Harrington C. Medicaid home and community-based services data, 2008 [Internet]. San Francisco (CA): Center for Personal Assistance Services; [cited 2012 Apr 20]. Available from: http://www.pascenter.org/medicaid/index.php
26 The twenty states were CA, CO, DC, HI, ID, MI, MN, MT, NH, NM, NY, NC, OR, RI, SC, TN, VA, WA, WV, and WI.

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H. Stephen Kaye is an adjunct professor at the University of California, San Francisco. In this month’s Health Affairs, Stephen Kaye reports on his statistical modeling of the impact of the manner in which states shift spending on long-term services and supports from institutional to home and community-based services, a process known as rebalancing. He found that a gradual rebalancing could reduce spending, but a more rapid move in that direction might save money, break even, or increase spending. He concludes that states must proceed carefully in rebalancing and adopt strategies that some have used to reduce overall spending.

According to Kaye, the current exercise also reflects a shift in how the policy community is coming to view rebalancing. “The key question is no longer whether rebalancing efforts can prevent increased spending on long-term services and supports, or even reduce them,” he says. “Now, the main question is how best to proceed.” The present findings, he notes, indicate that moving forward at a reasoned pace with due care is the wisest course.

Kaye is an adjunct professor at the University of California, San Francisco (UCSF), Institute for Health and Aging and Department of Social and Behavioral Sciences. He also serves as the co–principal investigator of the Center for Personal Assistance Services, a rehabilitation research and training center funded by the National Institute on Disability and Rehabilitation Research, and as codirector of UCSF’s Disability Statistics Center. His current research interests include community-based long-term care for people with disabilities of all ages, and disability measurement and data collection issues.

A former experimental physicist focused on data analysis, Kaye received his doctorate in physics from Stanford University. But some fifteen years ago, he explains, he chose to apply his analytical skills to the exploration of disability issues—a natural extension of his involvement in human rights advocacy activities.