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Predicting State Investment in Medicaid Home- and Community-Based Services, 2000–2011

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ABSTRACT

Although state use of Medicaid home- and community-based services (HCBS) to provide long-term services and supports to older adults and individuals with physical disabilities continues to increase, progress is uneven across states. We used generalized linear models to examine state factors associated with increased allocation of Medicaid dollars to HCBS for the period 2000 to 2011. We observed enhanced growth in states that began the period with limited investment in HCBS, as reflected in significant year trends among these states. The political environment appeared to be an important influence on states' investment for states with limited initial allocation to HCBS, as was housing affordability, a policy amenable variable. There continues to be wide variation in states' relative investment, calling for additional policy attention and research.

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Introduction

In 2011, 48.4% of Medicaid long-term services and supports (LTSS) was for care provided in home- and community-based settings (Eiken et al., 2014), up from 27.5% in 2000 (Eiken, Burwell, & Selig, 2006) and 11.3% in 1990 (Miller, Ramsland, & Harrington, 1999). All states have increased their provision of non-institutional LTSS. Yet progress continues to be uneven within and across states (Miller, 2011; Senate Committee on Health, Education, Labor, and Pensions, 2013). For example, in 2011, the share of Medicaid LTSS supporting non-institutional services ranged from 77.4% in Oregon to 26.0% in Mississippi (Eiken et al., 2014). While 11 states allocated 90% or greater to non-institutional settings for individuals with intellectual and developmental disabilities, no state allocated greater than 90% of LTSS to home- and community-based services (HCBS) for older adults and those with physical disabilities. The national share supporting HCBS LTSS for these two groups was 67.9% and 38.2%, respectively, in 2011.

The 1990 Americans With Disabilities Act established that individuals with disabilities have a right to receive care in home- and community-based

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settings, if they desire such a setting and if their needs can be met in such a setting. The 1999 Supreme Court decision in *Olmstead v. L. C.* intensified federal and state efforts to increase the availability of LTSS in home- and community-based settings. Federal demonstration initiatives such as Money Follows the Person (MFP) have sought to provide resources and incentives to states to "rebalance" their LTSS systems. The 2010 Affordable Care Act (ACA) included several new initiatives, such as the Community First Choice optional Medicaid benefit and the Balancing Incentive Program, to foster expansion of HCBS LTSS, particularly among states with more limited progress to date (Kaiser Family Foundation, 2010). The ACA also extended and enhanced provisions of the Deficit Reduction Act of 2005 to facilitate growth of HCBS LTSS, including refinements to the state plan 1915(i) option, and continuation of the MFP demonstration.

In this article, we examine recent trends in states' support of HCBS LTSS for older adults and individuals with physical disabilities. Specifically, we compare trends in the share of LTSS provided in the home and community by state over the period 2000 to 2011 (the most recent year of publicly available 1915(c) waiver data). As described below, we use an expanded definition of HCBS LTSS to be consistent with recent Centers for Medicare and Medicaid Services (CMS) initiatives such as the Balancing Incentive Program, as reported in Eiken, Sredl, et al. (2013). We examine factors associated with this share in multivariate analyses employing state and year fixed-effects models. Given federal interest in state progress among states with more limited HCBS investment as reflected in the ACA's Balancing Incentive Program, we assess progress by two groups of states, those with a comparatively higher investment in 2000 relative to states who began the period with a low share of LTSS supporting HCBS for older adults and individuals with physical disabilities (i.e., states in the bottom quartile in 2000). We begin by providing background on Medicaid HCBS LTSS, including recent expansions through federal legislation intended to foster growth in these services.

Background

Medicaid HCBS are supported primarily through three benefits, the mandatory home health benefit, the optional personal care benefit, and optional 1915(c) waiver services (Klees & Wolfe, 2013). Home health services have been available since 1965 as an optional benefit and 1970 as a mandatory benefit; home health services include nursing, home health aide, speech, physical, and occupational therapies and medical supplies, equipment, and appliances suitable for home use. Authorized in 1975 (and available in prior years at administrative discretion), optional personal care services include a variety of lower skilled services needed to support personal care for

functional limitations experienced by people with disabilities, such as dressing and bathing. Both the home health and personal care benefits are Medicaid state plan services and are available to any Medicaid beneficiary meeting the eligibility requirements. In contrast, 1915(c) waiver services, authorized in 1981, allow states to target certain groups (e.g., older adults, children with disabilities) and limit the service "slots" available. States request a 1915(c) waiver, allowing the Department of Health and Human Services to "waive" certain Medicaid statutory requirements so that states can receive federal funds to expand HCBS. In addition to targeting specific populations, states can offer services not typically covered through Medicaid state plan benefits (e.g., respite care, home modifications).

The Deficit Reduction Act of 2005 added the 1915(i) state plan option, which allows states to provide HCBS as a state plan service. The Deficit Reduction Act of 2005 also authorized the 1915(j) state plan option, intended to support self-direction. The ACA made several refinements to the 1915(i) state plan option, as well as authorizing the Community First Choice state plan option, providing personal assistance services to individuals at a higher income level than state plan eligibility (CMS, n.d.b). The Balancing Incentive Program, also established in the ACA, identifies additional state plan benefits that states may use to rebalance their LTSS systems (e.g., private duty nursing).

Begun as a demonstration in 1990, and made a state plan option in the 1997 Balanced Budget Act, states can use the Program of All-Inclusive Care for the Elderly (PACE) to provide acute and HCBS LTSS to older adults dually eligible for Medicare and Medicaid. Some states (e.g., Rhode Island) have also turned to state-wide 1115 demonstration programs to provide HCBS.

Following the 1999 *Olmstead* decision, Congress enacted several major demonstrations intended to foster the expansion of HCBS LTSS and facilitate state rebalancing efforts. Congressionally funded in 2001, the Real Choice Systems Change Grants for Community Living were intended to change long-term care systems by relying less on institutional care and increasing access to HCBS (CMS, n.d.d). A number of grant programs were funded under Real Choice Systems Change. With the exception of the Real Choice Comprehensive Reform grants, these grants were relatively small in nature. In the 2005 Deficit Reduction Act, Congress authorized the MFP program. Goals included increasing HCBS use and decreasing institutional use, eliminating various state barriers that acted to restrict access to HCBS, strengthening the ability to transition individuals from institutional to home- and community-based settings, and enhancing quality assurance and improvement of HCBS (CMS, n.d.c). The 2010 ACA authorized the Balancing Incentive Program. This program's broad goal is to increase access to

HCBS LTSS, with financial support focused on states with more limited investment in HCBS at the time of the 2010 ACA (CMS, n.d.a).

Methods

Study sample

State-level data for the period of 1999 through 2011 were used for all states and the District of Columbia, with the exception of Arizona. As Arizona has always operated its LTSS program under an 1115 demonstration waiver, HCBS specific expenditure data were not available for much of the study period and Arizona is not included in the multivariate analyses. Two additional states, Vermont and Rhode Island, implemented statewide 1115 demonstrations to provide HCBS during this time period (CMS, n.d.e). Additional states (e.g., New York) provide some share of HCBS LTSS through managed care organizations. In federal fiscal year 2008, Truven Health Analytics began collecting managed care data from most states providing some or all HCBS through managed care (Eiken et al., 2014). Our analysis excludes states for the years in which managed care LTSS expenditures were not available, as noted in the Medicaid LTSS expenditure reports prepared by Truven Health Analytics, the source of our expenditure data. In 2012, managed care accounted for 6.6% of Medicaid LTSS (Eiken et al., 2014). We also excluded a few observations for which data were missing in a specific year for a specific state, as noted by Eiken and colleagues (2014).

Data sources

Medicaid LTSS expenditure data (i.e., nursing facility, home health, personal care, 1915(c) waiver, 1115/1915(a), 1915(i), 1915(j), private duty nursing, and PACE-specific expenditures) were drawn from data as compiled by Truven Health Analytics (Eiken et al., 2006; Eiken, Burwell, et al., 2013; Eiken et al., 2014). Data sources include CMS-64 Quarterly Expense Reports, managed care data as collected by Truven Health Analytics, and MFP expenditure data as collected by Mathematica Policy Research (Eiken et al., 2014). Census Bureau Statistical Abstracts and the American Community Survey were used to gather state-level total population, the percentage aged 65 and older, the percentage of the state population that is Black or Hispanic, per capita income, and housing affordability. The nursing home bed supply was obtained from the CMS Nursing Home Data Compendium (CMS, 2005, 2008), with more recent data provided by CMS. The Office of Research, Demonstrations, and Information of CMS provided annual data related to the number of certified home health agencies through 2006; these were updated with information from the CMS Home

Health Compare website. Information regarding the party affiliation of the state governor was gathered from the National Governors Association.

Variables and measurement

In a synthesis of the comparative state health policy literature, Miller (2005) provides a framework for examining state-level health policy decisions. This framework was used to select socioeconomic, political, and external factors expected to influence state LTSS expenditures.

Dependent variable

The dependent variable examined was the share of annual total state Medicaid LTSS expenditures for older adults and individuals with physical disabilities supporting HCBS. Total LTSS expenditures were determined by combining nursing facility, home health, personal care, PACE, private duty nursing, 1115/1915(a) demonstration, 1915(c) waiver, and 1915(i) and 1915 (j) state plan expenditures targeted toward older adults, individuals with physical disabilities, and both older adults and individuals with physical disabilities. Expenditures for HCBS, all expenditures with the exception of nursing facility expenditures, were divided by total LTSS expenditures, similar to a measure of relative investment used in previous work (Miller, 2011; Miller et al., 2005).

Our analysis is specific to expenditures for older adults and individuals with physical disabilities; it excludes expenditures for individuals with intellectual and developmental disabilities.

Independent variables

Sociodemographic, economic, and supply factors represent socioeconomic variables internal to a state that may be related to LTSS expenditures. The share of the population aged 65 and older was included in the analysis. The need for LTSS increases with age, due to increasing prevalence of chronic disease and associated disability for most segments of the population of older adults (Seeman, Merkin, Crimmins, & Karlamangla, 2010). The share of the state population that is Black, as well as the share that is Hispanic were included. Rates of disability are higher among Black (22.2%) than Hispanic (17.8%) and White (17.4%) adults (Brault, 2012). Although a higher share of the state population that is older or a racial or ethnic minority is expected to increase the demand for LTSS and related expenditures, we do not hypothesize a direction of effect on the relative allocation of LTSS to HCBS.

State wealth is a second socioeconomic determinant. Measures of state wealth included in this study were state per capita income and housing affordability. Higher per capita income can be expected to increase state resources to provide LTSS; again, we do not hypothesize a direction of effect on the relative allocation

to HCBS. Some positive relations between state resources and the share supporting community-based LTSS have been observed in previous work (Miller et al., 2005, 2008). (The Consumer Price Index was used to express per capita income in 2011 dollars.) Affordable housing has been identified as a constraint to state expansion of HCBS (Irvin et al., 2013). The percentage of the state population with monthly housing costs exceeding 30% of household income was included as a second economic measure, with higher rates of less affordable housing expected to be associated with fewer dollars allocated to HCBS LTSS. Two supply measures, the third socioeconomic determinant, were included: per capita nursing home bed and per capita home health agency supply. Greater institutional capacity is expected to be negatively related to the share supporting HCBS LTSS, while greater home health agency capacity is expected to be positively related to the share supporting HCBS (Miller, Ramsland, Goldstein, & Harrington, 2001; Miller et al., 2005).

Given the structure of the Medicaid program, in which states elect to participate under broad federal guidelines, states' political environment is an important influence on the design of the Medicaid program (Sparer, France, & Clinton, 2011). With the exception of the home health benefit, Medicaid HCBS is provided at state discretion, unlike nursing facility care, which is a mandated benefit. Thus, one might expect even greater variability among states in their provision of HCBS and relative allocation to HCBS compared to nursing facility care. To capture the state political environment, the party affiliation of the state governor was included. We use the party affiliation of the mayor for the District of Columbia. State governors are important in shaping state politics, including health politics (Schneider & Jacoby, 1996; Schneider, 1993). There is some evidence that there is greater support for the funding of public programs such as Medicaid by liberal politicians (Barrilleaux & Miller, 1988; Lanning, Morrisey, & Ohsfeldt, 1991). We expect that Democratic governors would reflect this greater support of public programs, particularly those more discretionary in nature. Thus, we hypothesize that a Democratic governor will be associated with increased allocation of LTSS to HCBS, all else equal.

We included one external variable, states' participation in MFP. A specific goal of MFP was to increase HCBS use and decrease institutional use (CMS, n. d.c). States could use grant funding to support HCBS. An additional goal of MFP was to reduce barriers to accessing HCBS. Both goals could contribute to a greater share of LTSS allocated to HCBS. Grants for MFP were awarded in 2007. However, expenditures were not reported until 2008 in the first states, and expenditures generally increased over time. Irvin et al. (2013) note the somewhat slow implementation of MFP, and we viewed expenditures as a better indicator of actual implementation. We used information related to when states expended grant funds from Eiken, Sredl, et al. (2013) and coded states as participants each year they reported expenditures.

Analytic approach

The state-level change in the relative share of Medicaid LTSS dollars supporting HCBS, the dependent variable, was first examined. State socioeconomic, political, and external characteristics as well as their change over the study period were assessed, as were correlations between these characteristics and the state-level share supporting community-based LTSS. To examine potential issues with multicollinearity, we estimated the variance inflation factor. No independent variables were collinear at a level to raise concern, using this test (Chen, Ender, Mitchel, & Wells, 2003).

Multivariate regression analysis was then used to estimate associations between the independent variables and state investment in HCBS. Following Wooldridge (2003), a state and year fixed-effects model was used. This model explicitly accounts for state and year factors that are not included as explanatory variables. Independent variables were lagged 1 year, consistent with prior work (e.g., Miller et al., 2008). The cluster command was used to account for the clustering of states. Given that our dependent variable was a proportion, bounded between zero and one, we estimated a generalized linear model (GLM) with a binomial distribution as the family and a logit link function. This approach "respects" the boundaries at zero and one and is a more efficient approach (Baum, 2008; Papke & Wooldridge, 1996). The model took the following form:

$$\text{Share HCBS LTSS}_{it} = a + \text{Sociodemographic}_{it\ \ 1} + \text{Economic}_{it\ \ 1} + \text{Supply}_{it\ \ 1} + \text{Political}_{it\ \ 1} + \text{External}_{it\ \ 1} + \text{Year}_{t} + E_{it\ \ 1}$$

We estimated the above GLM model on two groups of states: those in the top three quartiles of the relative share of HCBS in 2000 and the sample of states that began the study period in the bottom quartile of the share HCBS distribution. We discuss findings significant at $p \leq .05$.

Findings

All states but Kentucky increased the share of dollars supporting HCBS for older adults and individuals with physical disabilities over the study period (Table 1). In 2000, the percentage supporting HCBS ranged from 0.55% in Tennessee to 47.99% in Oregon. In 2011, it ranged from 13.58 % in North Dakota to 64.80% in Minnesota. The average investment in HCBS LTSS increased from 17.18% in 2000 to 34.18% in 2011. While no state allocated greater than 50% of LTSS expenditures to HCBS in 2000, by 2011, four states—Alaska, Minnesota, Oregon, and Texas—allocated greater than 50% of their LTSS dollars to HCBS. California and Washington also allocated greater than 50% of LTSS to HCBS, excluding managed care expenditures that were not available.

Table 1. State Share of Long-Term Services and Supports That Is Home- and Community-Based Services (HCBS) for Older Adults and Individuals With Physical Disabilities (Expressed as Percentages), 2000–2011.

State	2000	2011	% Change	State	2000	2011	% Change
AK	28.80	60.80	111.11	**MS**	**6.69**	**19.09**	**185.35**
AL	10.97	16.67	51.96	MT	24.89	37.35	50.06
AR	30.00	31.80	6.00	NC	34.59	40.10	15.93
AZ				**ND**	**3.39**	**13.58**	**300.59**
CA	22.55	NA*		NE	16.87	25.30	49.97
CO	26.91	45.60	69.45	**NH**	**9.89**	**18.62**	**88.27**
CT	16.87	25.30	49.97	**NJ**	**9.97**	**23.05**	**131.19**
DC	**9.2*** **	**44.91**	**388.15**	NM	11.41	65.4**	473.18
DE	13.14	16.93	28.84	NV	17.12	34.80	103.27
FL	10.11	21.84	116.02	NY	29.89	42.50	42.19
GA	14.21	29.09	104.72	OH	11.73	30.96	163.94
HI	11.33	24.83	119.15	OK	16.35	31.22	90.95
IA	11.08	26.50	141.43	OR	47.99	56.70	18.15
ID	26.01	47.00	80.70	**PA**	**3.17**	**21.68**	**583.91**
IL	**8.49**	**35.40**	**316.96**	**RI**	**7.50**	**18.50**	**146.67**
IN	**7.87**	**21.10**	**168.11**	SC	22.53	28.39	26.01
KS	26.62	35.52	33.43	**SD**	**6.25**	**16.47**	**163.52**
KY	23.20	18.60	−19.83	**TN**	**0.55**	**25.00**	**4445.46**
LA	**5.70**	**29.80**	**422.81**	TX	28.24	52.90	87.32
MA	17.29	43.60	152.17	**UT**	**6.83**	**20.74**	**203.66**
MD	12.41	23.40	88.56	VA	16.35	40.59	148.26
ME	17.10	32.60	90.64	VT	21.90	42.90	95.89
MI	11.30	22.80	101.77	WA	39.38	NA*	
MN	20.81	64.80	211.39	WI	23.05	48.10	108.68
MO	20.91	38.11	82.26	WV	22.88	29.37	28.37
				WY	15.94	23.35	46.49

Note. *Not available; managed care long-term services and supports not available for 2006–2011.
**Managed care long-term services and supports not available for 2011; 2010 date shown.
***States in bold began the study period in the bottom quartile of the share HCBS distribution.

As shown in Table 2, state populations became older and more racially and ethnically diverse over the study period. While per capita income increased, there was also a notable increase in the share of households whose monthly housing expenditures exceeded 30% of household income. The decline in nursing home bed capacity may facilitate expansion of HCBS. These trends were observed in both groups of states, those with higher and lower shares of HCBS investment in 2000.

Factors associated with state relative investment in HCBS LTSS are shown in Table 3. Among states with a higher initial investment in HCBS in 2000, no independent variables were statistically significant. Year trends for all years were positive, but significant only in years 2003 to 2005.

Turning to the states with limited HCBS investment in 2000, a Democratic governor was positively associated with state investment in HCBS. A higher share of the state population reporting unaffordable housing was negatively associated with relative investment in HCBS, as was the share of the state population who were Black. The year trend was positive and significant in all years beginning in 2002.

Table 2. State Characteristics, 1999 and 2010.

	States with higher 2000 HCBS share for older adults and individuals with physical disabilities (n = 418)				States with lower 2000 HCBS share for older adults and individuals with physical disabilities (n = 153)			
	1999		2010		1999		2010	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sociodemographic								
Age 65+ (%)	12.09	1.96	13.38	1.74	11.28	3.56	13.14	1.63
Black (%)	9.44	8.82	9.93	8.89	15.42	18.33	15.07	18.33
Hispanic (%)	7.32	9.25	11.14	10.64	4.54	3.98	7.59	5.48
Economic								
Per capita income	39,884	6,054	42,170	5,893	40,301	8,170	42,120	5,476
Housing costs exceed 30% of income	31.39	3.22	46.6	4.41	30.02	4.14	45.85	4.31
Supply								
Nursing home beds/1,000 state population	6.79	2.69	5.06	2.16	8.08	2.38	6.76	2.17
Home health agencies/10,000 state population	0.32	0.18	0.31	0.19	0.29	0.17	0.26	0.14
Political								
Democratic governor	0.4	0.5	0.62	0.49	0.23	0.44	0.31	0.48
	2000		**2011**		**2000**		**2011**	
Share HCBS	0.21	0.09	0.35	0.12	0.07	0.03	0.24	0.09

Note. HCBS = home- and community-based services.

To facilitate interpretation of the significant variables with regard to their substantive effect, an effect size was calculated for significant variables in the above models (Table 4). In the model with states beginning the study period with a higher relative share, the significant year trends increased from 0.040 in 2003 over the base 2000 year share to 0.050 in 2005 over the base 2000 year share. Using the 2000 year state average share shown in Table 2 to illustrate, the 2005 year trend was associated with an increase from 0.210 to 0.260 in 2005, all else equal. For states that began the study period with a low investment in community-based LTSS, having a Democratic governor was associated with a 0.035 increase in the share over the study period. The effects of the share of the population that were Black and housing affordability, although significant, were substantively smaller. The year trend was substantively significant; in 2011, the state share allocated to HCBS had increased .284 over 2000, all else equal. Using the 2000 year average share of 0.07, the HCBS share in 2011 was 0.354 (or 35.40% of LTSS), all else equal.

Discussion

States continued to increase the share of LTSS allocated to HCBS over the period 2000 to 2011. Descriptively, the average state share increased from 17.18% in 2000 to 34.18% in 2011. No state invested 50% or greater of LTSS dollars in community-based care in 2000; by 2011, six states allocated greater than 50% of LTSS to community-based care, with Minnesota the highest at 64.8%. Yet there

Table 3. State Factors Associated With State HCBS Investment For Older Adults and Individuals With Physical Disabilities, 2000–2011, Generalized Linear Models.

	Higher HCBS states: State factors with state and year FEs (n = 418)		Lower HCBS states: State factors with state and year FEs (n = 153)	
	Coefficent	Robust *SE*	Coefficent	Robust *SE*
Sociodemographic				
Age 65+ (%)	6.285	3.558	1.307	3.331
Black (%)	0.05	0.058	−0.108	0.017***
Hispanic (%)	0.032	0.031	−0.053	0.047
Economic				
Per capita income ($1,000)	< .001	< .001	< .001	< .001
Housing costs exceed 30% of income	0.012	0.012	−0.057	0.015***
Supply				
Nursing home beds/1,000 state population	−0.054	0.038	−0.122	0.086
Home health agencies/10,000 state population	0.033	0.018	0.008	0.028
Political				
Democratic governor	0.035	0.058	0.308	0.125*
External				
MFP	−0.058	0.068	−0.075	0.135
Year				
2001	0.051	0.057	0.146	0.097
2002	0.125	0.084	0.303	0.087**
2003	0.22	0.103*	0.512	0.094***
2004	0.25	0.123*	0.813	0.141***
2005	0.274	0.130*	0.838	0.165***
2006	0.171	0.216	0.953	0.290***
2007	0.229	0.218	1.559	0.228***
2008	0.347	0.233	1.814	0.252***
2009	0.407	0.227	1.954	0.259***
2010	0.344	0.25	2.218	0.305***
2011	0.32	0.292	2.361	0.325***

Note. HCBS = home- and community-based services; FE = fixed effect; MFP = Money Follows the Person.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

continued to be notable variation in states' provision of LTSS in home and community settings for older adults and individuals with physical disabilities.

Three state variables were significantly related to HCBS investment in analyses of states with limited initial investment. The political environment, as measured by the party affiliation of the governor, was a positive and significant factor associated with increasing the share devoted to HCBS in states that began the period with a low level of investment. Miller et al. (2008) found Democratic governors to be associated with state adoption as well as expenditures and the share supporting 1915(c) waivers targeting individuals with HIV/AIDS. More broadly, Harrington et al. (2000) found states with a Democratic governor to have greater HCBS expenditures per capita, all else equal. The political environment may be particularly important to state efforts to innovate, in this case accelerating efforts to rebalance LTSS systems. This finding likely reflects both the important role of state governors in state politics (Schneider & Jacoby, 1996; Schneider, 1993) and the likely greater support for public programs by more liberal-leaning politicians (Sparer et al., 2011).

Table 4. Marginal Effects for Significant GLM Variables With State and Year Fixed Effects.

	States with higher share HCBS for older adults and individuals with physical disabilities		States with lower share HCBS for older adults and individuals with physical disabilities	
	dy/dx	*SE*	dy/dx	*SE*
Black (%)			−0.012	.002***
Housing costs exceed 30% of income			−0.007	.002***
Democratic governor			0.035	.014*
Year				
2001				
2002			0.016	.005**
2003	0.04	.017*	0.029	.006***
2004	0.046	.021*	0.053	.009***
2005	0.05	0.022**	0.055	.010***
2006			0.089	.022***
2007			0.14	.019***
2008			0.18	.024***
2009			0.205	.027***
2010			0.255	.038***
2011			0.284	.043***

Note. GLM = generalized linear model; HCBS = home- and community-based services; dy/dx = derivative of y with respect to x, or the marginal effect.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

The finding may also capture fiscal concerns that may be associated with HCBS and variation by political party in approaches to fiscal concerns. Funding of Medicaid HCBS LTSS has been a long-standing issue. Although there is evidence that HCBS is less expensive than institutional care (Kitchener, Ng, Miller, & Harrington, 2006) and expansion of HCBS may be associated with lower total LTSS spending (Kaye, LaPlante, & Harrington, 2009), many states continue to highlight cost concerns associated with expansion. Providing evidence that HCBS can be provided while not increasing total expenditures may facilitate expansion. Use of national associations, such as the National Governors Association, to disseminate evidence related to the cost impacts of HCBS may be a strategy to further enhance states' efforts. In its 2013 report (*Separate and unequal*), the Senate Health, Education, Labor, and Pensions Committee argued that most states continue to perceive provision of HCBS LTSS from a budget perspective, rather than the civil rights perspective inherent in the 1990 Americans With Disabilities Act. Advocating for HCBS expansion from a civil rights perspective may also be important to the continued growth of HCBS.

Among states with limited initial HCBS investment, housing affordability was negatively associated with relative HCBS investment. As the share of the state population that allocated more than 30% of their monthly income to housing expenses increased, the share allocated to HCBS declined. The MFP evaluation (Irvin et al., 2013) discussed the need to address housing affordability in state rebalancing efforts, as did an earlier report on the CMS Nursing Facility Transition grant program (O'Keeffe, O'Keeffe, Greene, & Anderson, 2008). Our

findings suggest that housing affordability is important in states relatively early in their rebalancing efforts. States have developed various approaches to address housing affordability. For example, in the CMS Nursing Facility Transitions grant program, some county housing authorities in Maryland prioritized individuals on a voucher set-aside program to allow individuals in nursing facilities seeking to transition back to the community to move to the top of the voucher priority list when they became eligible for 1915(c) waiver slots (O'Keeffe et al., 2008). Partners in Arkansas created a Bridge Rental Assistance Program to assist with closing the gap between an individual's income and rental prices for a period post-transition (O'Keeffe et al., 2008). Expanding and evaluating the effectiveness of these approaches is an important next step. This is particularly the case as lack of affordable housing increased substantially over the study period (see Table 2).

In models focused on states with limited initial investment, the share of the state population that is Black was negatively associated with the share supporting HCBS. Previous work has found the effect of state racial and ethnic composition to be a non-significant factor in states' relative investment in HCBS (Miller, Harrington, Ramsland, & Goldstein, 2002; Miller et al., 2005), including prior analysis specific to older adults and adults with physical disabilities (Miller et al., 2005). The relation between minority race and HCBS use may have changed in more recent years. In a state-level analysis of nursing home admissions for the period 2000 to 2008, the share of new admissions who were Black increased substantially over the study period, with the effect particularly pronounced among older working-aged adults (Miller, Pinet-Peralta, & Elder, 2012). Concerns related to an increase in chronic health conditions and their severity, as well as lack of health insurance may have contributed to the finding. Such as increase in nursing home use could be reflected in the share of LTSS expended on HCBS. This study's significant negative racial effect among states relatively early in their rebalancing efforts warrants continued investigation.

We observed stronger growth in the share allocated to HCBS among states with an initially low share; this is reflected in the year trend that was positive and significant in all years but 2001. In contrast, the year trend was positive and significant in only three study years for states with a relatively higher initial investment in HCBS. The effect size was also greater across the study in states with limited initial HCBS investment (see Table 4). The year trend captures unmeasured secular variables, such as federal activities undertaken by CMS that may exert an important influence on states with limited HCBS investment. Further understanding the factors contributing to this trend would be useful in supporting continued efforts to rebalance state LTSS systems for older adults and individuals with physical disabilities. The finding also suggests that greater targeting of federal resources at this point in states' LTSS system evolvement may be useful. The ACA Balancing Incentive Program represents a more targeted approach to federal assistance in state

rebalancing efforts, focusing grant support on states with more limited investment (CMS, n.d.a). Findings from this demonstration merit attention with regard to effects on rebalancing in states with continued limited supported of HCBS.

In bivariate analyses with state fixed effects, MFP was positive and significant in its relation to state HCBS investment. When adjusted for state sociodemographic, supply, economic, and political factors, as well as year trends, MFP was no longer significant. This suggests that state factors made more significant contributions to state rebalancing efforts. In an evaluation of MFP for the first 3 years, Irvin et al. (2013) found some evidence of an MFP effect in the third year (2010), when the analysis was limited to state participants in MFP. However, this effect was largely driven by long-term care users who had resided in a nursing facility for a year or longer, as well as rebalancing associated with individuals with intellectual and developmental disabilities (Irvin et al., 2013). As implementation of MFP was somewhat slow, our lack of a significant effect may reflect limited implementation during our study period. Given the size of MFP, as measured by federal funding and the ACA expansion, continuing to examine its association with state rebalancing is warranted.

It is important to note study limitations. Our use of state and year fixed effects accounts for unobserved state and secular variables that may influence states' allocation of LTSS dollars. However, there may be important time variant factors related to state growth that were not included. For example, states may have adopted legislation or policies during the study period that redirected LTSS dollars that are not captured in our models. Similarly, state legal activities in response to the Americans With Disabilities Act may have occurred during the study period and influenced state support of HCBS. Our external measure focused on federal policy initiatives. Regional influences may also be an important predictor of state allocation of LTSS. Models of state innovation point to the importance of neighboring state activity as an external factor influencing state policy innovation (Miller, 2005).

In summary, descriptively, all but one state increased their relative investment of LTSS dollars in HCBS over the period 2000 to 2011. We observed enhanced growth in states with limited initial HCBS investment. The political environment appeared to be an important influence on states' investment for states with limited initial allocation to HCBS, as was housing affordability, a policy amenable variable. There continues to be wide variation in states' relative investment, calling for additional policy attention and research. More recent policy initiatives, such as the Medicaid 1915(i) and (j) state plan options, as well as the Community First Choice state plan option, merit attention with regard to their impact on state rebalancing efforts. Continued evaluation of federal demonstrations and their role in supporting state efforts

to reconfigure their LTSS to support access to HCBS for older adults and individuals with physical disabilities is important as well.

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