



U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Behavioral Health, Disability, and Aging Policy

CHANGES IN HOME HEALTH CARE USE IN MEDICARE ADVANTAGE COMPARED TO TRADITIONAL MEDICARE, 2011-2016

September 2020

Office of the Assistant Secretary for Planning and Evaluation

The Assistant Secretary for Planning and Evaluation (ASPE) advises the Secretary of the U.S. Department of Health and Human Services (HHS) on policy development in health, disability, human services, data, and science; and provides advice and analysis on economic policy. ASPE leads special initiatives; coordinates the Department's evaluation, research, and demonstration activities; and manages cross-Department planning activities such as strategic planning, legislative planning, and review of regulations. Integral to this role, ASPE conducts research and evaluation studies; develops policy analyses; and estimates the cost and benefits of policy alternatives under consideration by the Department or Congress.

Office of Behavioral Health, Disability, and Aging Policy

The Office of Behavioral Health, Disability, and Aging Policy (BHDAP) focuses on policies and programs that support the independence, productivity, health and well-being, and long-term care needs of people with disabilities, older adults, and people with mental and substance use disorders.

NOTE: BHDAP was previously known as the Office of Disability, Aging, and Long-Term Care Policy (DALTCP). Only our office name has changed, not our mission, portfolio, or policy focus.

This report was prepared under contract #HHSP233201600024I between HHS's ASPE/BHDAP and Urban Institute. For additional information about this subject, you can visit the BHDAP home page at <https://aspe.hhs.gov/bhdap> or contact the ASPE Project Officers, at HHS/ASPE/BHDAP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C., 20201; Judith.Dey@hhs.gov, lara.Oliveira@hhs.gov.

CHANGES IN HOME HEALTH CARE USE IN MEDICARE ADVANTAGE COMPARED TO TRADITIONAL MEDICARE, 2011-2016

Stephen Zuckerman
Laura Skopec
Joshua Aarons
Robert A. Berenson
Judith Feder
Douglas Wissoker
Urban Institute

Peter J. Huckfeldt
University of Minnesota

September 2020

Prepared for
Office of Behavioral Health, Disability, and Aging Policy
Office of the Assistant Secretary for Planning and Evaluation
U.S. Department of Health and Human Services
Contract #HHSP233201600024I

The opinions and views expressed in this report are those of the authors. They do not reflect the views of the Department of Health and Human Services, the contractor or any other funding organization. This report was completed and submitted on December 18, 2019.

TABLE OF CONTENTS

ACRONYMS	iii
INTRODUCTION	1
DATA AND METHODS	3
Qualitative Methods.....	3
Quantitative Methods	3
RESULTS	7
Home Health Care Used Increased in Medicare Advantage Relative to Traditional Medicare between 2011 and 2016.....	7
Medicare Advantage Home Health Spells Shortened Relative to Traditional Medicare between 2011 and 2016	8
Home Health Care Use Grew Faster in Medicare Advantage than Traditional Medicare in 27 States between 2011 and 2016	8
Medicare Advantage Home Health Use Grew More than Traditional Medicare in States with a Moratorium on New Home Health Agencies between 2011 and 2016	10
Home Health Care Use Increased in Health Maintenance Organization, Preferred Provider Organization, and Private Fee-For-Service Plans between 2011 and 2016	10
Home Health Spell Lengths Fell in Most Medicare Advantage Plan Types between 2011 and 2016	11
Medicare Advantage Home Health Users Were Less Likely to Have a Hospital Admission During Their Home Health Spell than Traditional Medicare Home Health Users in Both 2011 and 2016	11
DISCUSSION	13
LIMITATIONS	14
END NOTES	15

LIST OF TABLES

TABLE 1. Changes in the Share of Beneficiaries Using Home Health Care in MA and TM by Admission Type, 2011-2016.....	7
TABLE 2. Changes in Spell Length among Home Health Users in MA and TM by Admission Type, 2011-2016	8
TABLE 3. Changes in the Share of Beneficiaries Using Home Health Care in MA and TM by Admission Type and State, 2011-2016	9
TABLE 4. Changes in the Share of Beneficiaries Using Home Health Care in MA and TM between 2011 and 2016, by Moratoria on New HHAs.....	10
TABLE 5. Changes in the Share of Beneficiaries Using Home Health Care by MA Contract Type and Home Health Admission Type, 2011-2016	11
TABLE 6. Changes in the Length of Spell among Home Health Care Users by MA Contract Type and Home Health Admission Type, 2011-2016	11
TABLE 7. Changes in the Share of Home Health Spells Requiring a Hospital Admission in MA versus TM by Home Health Admission Type, 2011-2016	12

ACRONYMS

The following acronyms are mentioned in this report.

CMS	Centers for Medicare & Medicaid Services
EGHP	Employer Group Health Plan
HHA	Home Health Agency
HMO	Health Maintenance Organization
ICD	International Classification of Diseases
MA	Medicare Advantage
MBSF	Master Beneficiary
MedPAC	Medicare Payment Advisory Commission
MSA	Metropolitan Statistical Area
PACE	Program of All-inclusive Care for the Elderly
PFFS	Private Fee-For-Service
PPO	Preferred Provider Organization
SNP	Special Needs Plan
TM	Traditional Medicare

INTRODUCTION

Medicare beneficiaries who need intermittent skilled care to treat their illnesses or injuries and cannot leave their homes without considerable effort are eligible for home health care benefits. In 2015, 12,346 home health agencies (HHAs) served 3.5 million Medicare enrollees, and these services accounted for approximately 5 percent of traditional Medicare spending.¹ Unlike many other Medicare benefits, the home health benefit in traditional Medicare is not subject to cost-sharing or deductibles, and there is no limit on the number of home health visits or episodes a Medicare beneficiary can receive as long as he or she meets the eligibility requirements.

Home health services are frequently used after a hospital stay to treat an acute health condition. However, the Medicare Payment Advisory Commission (MedPAC) has expressed concern about growth in admissions to home health directly from the community, suggesting these admissions may be substituting for long-term care benefits that are not covered by the Medicare program.¹

In traditional Medicare, home health care providers receive a prospective payment for a 60-day episode of care, and payments are adjusted for patients' clinical and functional characteristics as well as the number of therapy visits provided.¹ Prior work has shown that home health providers strategically provide therapy visits and recertify episodes in order to maximize payment under this system, which may not be the most efficient or clinically effective use of home health services.² In contrast, Medicare Advantage (MA) plans have more flexibility in terms of how they pay for home health care. Medicare Advantage plans receive a monthly capitated rate from Medicare for each enrollee and thus have financial incentives to use home health care strategically and efficiently, and potentially to substitute home health for more intensive services. Moreover, Medicare Advantage plans have flexibility to define a network of HHAs, apply cost-sharing to home health benefits, and manage utilization of home health services. Little research has been conducted on the differences in home health utilization and length of home health spells between Medicare Advantage and traditional Medicare (TM) by admission type, however. Some studies have shown lower utilization of post-acute care in general among Medicare Advantage enrollees,³ and one study showed Medicare Advantage enrollees were less likely to use home health and had shorter spells when they did use those benefits,⁴ but neither differentiated between post-acute and community-admitted home health care use.

Observers and policymakers have long questioned the appropriate role of home health in Medicare and in the delivery of care more broadly.⁵ Ensuring appropriate use has been difficult, and the benefit has a history of fraud, waste, and abuse.¹ Prior research has shown substantial geographic variability in the use of post-acute care services within traditional Medicare, including home health, that cannot be explained by differences in patient needs. MedPAC suggested in a 2011 Report to Congress that this geographic variation may indicate overuse or fraud and abuse.⁶

Centers for Medicare & Medicaid Services (CMS) has recently implemented policies in traditional Medicare designed to address fraud and abuse in home health care. For example, in 2013, CMS temporarily banned new HHAs from enrolling in the Medicare program in six metro areas due to high rates of fraud, and this ban was expanded statewide in Florida, Illinois, Michigan, and Texas in mid-2016.⁷ This moratorium has since expired but may have disproportionately affected home health use in traditional Medicare, as Medicare Advantage home health benefits were already more actively managed prior to the moratorium, including through selective contracting to form networks. While MedPAC has observed reductions in home health provider supply in moratorium states, particularly Florida and Texas,¹ to our knowledge no studies have explored changes in traditional Medicare home health care use in moratorium states compared to non-moratorium states, or assessed the effects of the moratorium on traditional Medicare compared to Medicare Advantage.⁸

This mixed-methods study examines changes in patterns of post-acute and community-admitted home health care use between 2011 and 2016, focusing on differences between Medicare Advantage and traditional Medicare and across Medicare Advantage contract types in response to the following research questions:

- How has use of home health care changed over time in Medicare Advantage compared to traditional Medicare, nationally and by state?
- Did states with a moratorium on new HHAs have different changes in home health care use in Medicare Advantage compared to traditional Medicare than states without a moratorium?
- Do changes in home health care use vary by Medicare Advantage contract type?
- How have hospital admissions for home health users changed over time in Medicare Advantage compared to traditional Medicare?

Our quantitative analyses are supplemented by qualitative interviews to explore why home health use differs between Medicare Advantage and traditional Medicare. Our quantitative and qualitative analyses focus on exploring how home health use is changing in both Medicare Advantage and traditional Medicare over time, including both community-admitted and post-acute home health care.

DATA AND METHODS

We conducted a mixed-methods study combining analysis of Medicare administrative data and qualitative interviews with staff from Medicare Advantage plans and HHAs.

Qualitative Methods

We held informal discussions with several subject matter experts in academia and advocacy organizations to gather background information, developed a list of experienced and knowledgeable target interviewees, and determined topics for our interview guides. We then conducted nine interviews with personnel from a convenience sample of HHAs (three), Medicare Advantage insurers (five), and post-acute care management companies (one). We combined the post-acute management company's perspective with those of Medicare Advantage insurers in our findings because the company managed post-acute care on the behalf of insurers. These qualitative interviews were not designed to be representative but were instead used to provide context for interpreting our quantitative results.

Five of the organizations we interviewed (two Medicare Advantage insurers, two HHAs, and one post-acute care management company) were large and served many markets nationally; other interviewees included three state or local Medicare Advantage insurers and one state-based HHA. Interviews were conducted between May 2018 and July 2018 and generally lasted 45 minutes. Our interviews focused on perceived differences in use of home health care between Medicare Advantage and traditional Medicare; benefit structure for home health in Medicare Advantage, including cost-sharing, networks, referral patterns, and prior authorization; eligibility for home health in Medicare Advantage; and how home health fits into the broader post-acute care context.

Quantitative Methods

Data Sources

Our primary data sources were the Home Health Outcome and Assessment Information Set (OASIS) and the Master Beneficiary Summary File (MBSF) for 2011 and 2016. We supplemented these data with information about Medicare Advantage contracts, Medicare Advantage plan benefits, and HHA quality ratings from CMS.

The OASIS assessment must be completed by HHAs for both Medicare Advantage and traditional Medicare patients when they enter home health care, leave home health care (including temporarily), and every 60 days during a home health spell. Entry assessments record

patients' characteristics and health status and later assessments monitor health status to measure patient outcomes and changes in function. All OASIS assessments note whether any hospital stays occurred in the 14 days prior to the assessment, as well as any suspensions of or discharges from home health care for hospitalization. The 2011 and 2016 OASIS files contain 16,329,785 and 17,122,154 assessments for 4,854,670 and 5,260,684 Medicare Advantage and traditional Medicare beneficiaries, respectively.

The MBSF contains demographic and Medicare enrollment information for all Medicare beneficiaries. This includes reason for Medicare entitlement (aged, disabled, end-stage renal disease, or disabled and end-stage renal disease), enrollment in Medicare Parts A and B, Medicare Advantage contract and plan identifiers, Medicaid eligibility, and Part D low-income subsidy eligibility. The MBSF files contain information for all Medicare beneficiaries enrolled during the year: 51,667,138 in 2011 and 59,818,481 in 2016.

We supplemented the OASIS and MBSF with information on Medicare Advantage contracts, Medicare Advantage plan characteristics, and Home Health Compare star ratings for HHAs. We used the 2011 and 2016 Medicare Advantage Plan Characteristics file from CMS to determine whether Medicare Advantage enrollees had cost-sharing or prior authorization requirements for home health care. In addition, we used the Home Health Compare Star Ratings file to determine each agency's for-profit status and overall star rating. Home Health Compare star ratings are constructed from 23 quality measures derived from OASIS assessments and patient surveys, including hospital readmission rates, functional status improvement, pain management, and patients' experience with care.⁹

Study Sample

Our sample was limited to full-year Medicare beneficiaries who did not die during 2011 and 2016. Our Medicare Advantage sample included those beneficiaries who were enrolled in Medicare Advantage for the full calendar year, and our traditional Medicare sample included those beneficiaries who were enrolled in Medicare Parts A and B for the full year. The 0.7 million and 1.1 million beneficiaries who switched between Medicare Advantage and traditional Medicare during the 2011 and 2016 calendar years, respectively, but otherwise met our sample criteria were not included in our analysis.

We defined a home health spell as the time between a start-of-care OASIS assessment and a discharge OASIS assessment. OASIS start-of-care and discharge assessments are required for all home health episodes that include more than one home health visit. A home health spell can include multiple 60-day episodes and can be shorter than a 60-day episode. We classified spells as post-acute if the initial OASIS assessment indicated that the beneficiary had received acute or post-acute care within the prior two weeks and all other spells as community admitted. To ensure consistent measurement of spell length, we limited our spell-level analyses to those spells beginning in the first three months of the calendar year (January through March), and we truncated all spells at a maximum of 275 days. We dropped home health spells for which we observed only a start-of-care OASIS assessment in 2011 or 2016 with no subsequent discharge

or continuation-of-care assessment during the year.¹⁰ Our 2011 sample includes 159,210 home health spells for Medicare Advantage enrollees and 713,670 for traditional Medicare enrollees, and our 2016 sample includes 285,445 home health spells for Medicare Advantage enrollees and 781,795 for traditional Medicare enrollees. The large increase in the number of Medicare Advantage home health spells included in our sample between 2011 and 2016 reflects enrollment growth in the Medicare Advantage program.

Study Measures

Our first outcome measure was the share of beneficiaries using home health during 2011 and 2016. We conducted analyses for any home health use and segmented by type of home health use based on the beneficiary's first spell during the calendar year. Our key explanatory variables included Medicare Advantage or traditional Medicare enrollment, Medicare Advantage contract type, Medicare Advantage cost-sharing, and Medicare Advantage prior authorization. Medicare Advantage contract types include health maintenance organizations (HMOs), preferred provider organizations (PPOs), employer-sponsored plans,¹¹ and special needs plans (SNPs).¹² While we do not separately analyze private fee-for-service (PFFS) plans, cost plans, and Medicare Savings Account plans, those plan types are included in overall analyses of home health care use in Medicare Advantage. Control variables included beneficiary age, gender, race and ethnicity, Medicaid eligibility, Part D low-income subsidy eligibility, reason for Medicare entitlement, and state, measures that were available for all beneficiaries in the MBSF.

We also conducted analyses focused on home health spells. For these analyses, the key outcome variables were average number of days between start-of-care OASIS and discharge OASIS (hereafter, home health spell length); the share of home health spells with for-profit HHAs; the share of spells with agencies earning a 1-star to 5-star Home Health Compare quality rating; and the share of spells that ended in or were suspended for a hospital admission. The key explanatory variables included Medicare Advantage enrollment, Medicare Advantage contract type, Medicare Advantage cost-sharing, and Medicare Advantage prior authorization. We conducted these analyses for community-admitted spells, post-acute spells, and all spells. Control variables included beneficiary age, gender, race and ethnicity, Medicaid eligibility, Part D low-income subsidy eligibility, reason for Medicare entitlement, state, primary diagnosis, and functional status. Primary diagnosis was determined using the clinical classification software category¹³ for the patient's primary ICD-10 diagnosis code upon entry. We used the method by Plotzke et al.¹⁴ to calculate functional status based on the OASIS responses for the patient's grooming, dressing, bathing, toilet transferring, other transferring, and ambulation/locomotion abilities.

We do not observe the number or types of home health visits in OASIS records, so our estimates of spell length do not capture the volume or nature of the home health services received. We estimate the length of home health spells by counting the number of days between a start-of-care OASIS assessment and a discharge OASIS assessment, regardless of whether care was provided on each day. Home health spells can therefore be either longer or shorter than a 60-day episode. In addition, the 60-day cycle for the OASIS reflects traditional

Medicare, not Medicare Advantage, payment structures, and HHAs may not have an incentive to file an immediate discharge in Medicare Advantage. Therefore, we may overestimate the length of Medicare Advantage home health spells. However, given that we hypothesize that Medicare Advantage spells are shorter than traditional Medicare spells, this bias would lead to more conservative estimates of differences between Medicare Advantage and traditional Medicare.

Methods

We estimated the shares of beneficiaries using home health for traditional Medicare versus Medicare Advantage and across Medicare Advantage plans with the various Medicare Advantage contract characteristics described above. We then estimated linear regression models to adjust our estimates of differences between Medicare Advantage and traditional Medicare, differences within Medicare Advantage, and differences between 2011 and 2016 to control for beneficiary demographic, eligibility, and geographic characteristics. We used the same approach for our difference-in-differences model comparing the 2011-2016 change in Medicare Advantage and traditional Medicare. Beneficiary-level analyses did not control for health status, which is not available for Medicare Advantage beneficiaries in the MBSF.

To assess whether the moratorium on new HHAs in four states was associated with differing changes in home health care use in Medicare Advantage and traditional Medicare between 2011 and 2016, we also estimated a triple-difference model. First, we compared changes in home health care between moratorium and non-moratorium states within traditional Medicare, adjusting as above. We then estimated a parallel difference-in-differences model for Medicare Advantage. Finally, we estimated a triple-differences model comparing changes in home health care use in Medicare Advantage compared to traditional Medicare between 2011 and 2016 for states with or without moratoriums on new HHAs.

Our spell-level analyses compared the length of home health spells in Medicare Advantage and traditional Medicare and by Medicare Advantage contract characteristics, the share of Medicare Advantage and traditional Medicare home health spells occurring in different types of HHAs, and the share of Medicare Advantage and traditional Medicare home health spells requiring a hospital admission. We estimated linear regression models to adjust our estimates of differences between Medicare Advantage and traditional Medicare and differences between 2011 and 2016 for beneficiary demographic, eligibility, geographic, primary diagnosis, and functional status characteristics. We used the same approach for our difference-in-differences model comparing the change in differences between Medicare Advantage and traditional Medicare in 2011 and 2016.

RESULTS

Home Health Care Use Increased in Medicare Advantage Relative to traditional Medicare between 2011 and 2016

Overall, home health care use increased by 0.3 percentage points more in Medicare Advantage than in traditional Medicare between 2011 and 2016 after adjustment for beneficiary characteristics but remained lower in Medicare Advantage than traditional Medicare in both years. As shown in Table 1, in both 2011 and 2016, Medicare Advantage enrollees were less likely to use home health care than traditional Medicare enrollees, including both community-admitted and post-acute care (Table 1). However, the two moved slightly closer together: between 2011 and 2016, the share of beneficiaries using home health care increased in Medicare Advantage (0.3 percentage points, unadjusted) and decreased in traditional Medicare (0.7 percentage points, unadjusted) (Table 1).

In terms of admission type, between 2011 and 2016, the share of Medicare Advantage enrollees using community-admitted home health care did not change significantly relative to traditional Medicare after adjusting for beneficiary characteristics, but Medicare Advantage enrollees' use of post-acute home health care grew 0.1 percentage points faster than traditional Medicare.

TABLE 1. Changes in the Share of Beneficiaries Using Home Health Care in MA and TM by Admission Type, 2011-2016									
	2011			2016			Change, 2011-2016		
	MA	TM	Adjusted Difference MA-TM (1)	MA	TM	Adjusted Difference MA-TM (2)	MA Adjusted Change (3)	TM Adjusted Change (4)	Adjusted Difference-in-Differences MA-TM (5)
Overall	6.5%	10.1%	-3.2**	6.8%	9.4%	-2.7**	0.3**	-0.2	0.3*
Community-admitted	1.5%	3.0%	-1.3**	1.7%	2.8%	-1.2**	0.2**	0.0	0.1
Post-acute	4.3%	5.7%	-1.3**	4.4%	5.5%	-1.1**	0.2**	0.0	0.1*
Admission type not observed	0.7%	1.4%	-0.5**	0.7%	1.1%	-0.4**	0.0	-0.2**	0.1*

SOURCE: Data are from 2011 and 2016 MBSF and OASIS.
NOTES: Differences are adjusted for beneficiary demographic characteristics, eligibility, and state. This table shows results from 5 separate linear regression models:
 (1) A 2011 model including both MA and TM enrollees.
 (2) A 2016 model including both MA and TM enrollees.
 (3) An MA model including both 2011 and 2016 enrollees.
 (4) A TM model including both 2011 and 2016 enrollees.
 (5) A difference-in-differences model including MA and TM enrollees for both 2011 and 2016.
 Results cannot be added across models.
 **/* Estimate is significantly different from zero at the 0.01/0.05 level.

Qualitative interviews confirmed that, from the perspective of HHAs and Medicare Advantage plans, there were not substantial changes in the rate of home health care use over the 2011-2016 period. Our interviewees expected community-admitted home health, in particular, to be less common among Medicare Advantage patients.

Medicare Advantage Home Health Spells Shortened Relative to traditional Medicare between 2011 and 2016

In both 2011 and 2016, Medicare Advantage home health spells were shorter than traditional Medicare home health spells by 6.7 and 7.3 days, respectively after adjustment for beneficiary characteristics including primary diagnosis and functional status (Table 2). However, changes in home health spell length between 2011 and 2016, were not statistically different between Medicare Advantage and traditional Medicare after adjustment. Community-admitted spell lengths fell by 5.4 days more in Medicare Advantage than in traditional Medicare over this period, post-acute spells in Medicare Advantage increased 1.8 day more than in traditional Medicare.

	2011			2016			Change, 2011-2016		
	MA	TM	Adjusted Difference MA-TM (1)	MA	TM	Adjusted Difference MA-TM (2)	MA Adjusted Change (3)	TM Adjusted Change (4)	Adjusted Difference-in-Differences MA-TM (5)
All home health spells	59.7	73.0	-6.7**	59.7	68.7	-7.3**	-5.3**	-5.8**	-0.1
Community-admitted	83.2	93.0	-5.6*	75.4	85.6	-9.6**	-10.3**	-5.4*	-5.4*
Post-acute	51.0	61.4	-6.2**	52.7	58.6	-4.8**	-3.7**	-6.5**	1.8*

SOURCE: Data are from 2011 and 2016 MBSF and OASIS.
NOTES: Differences are adjusted for beneficiary demographic characteristics, eligibility, state, primary diagnosis, and functional status. This table shows results from 5 separate linear regression models:
 (1) A 2011 model including both MA and TM spells.
 (2) A 2016 model including both MA and TM spells.
 (3) An MA model including both 2011 and 2016 spells.
 (4) A TM model including both 2011 and 2016 spells.
 (5) A difference-in-differences model including MA and TM spells for both 2011 and 2016.
 Results cannot be added across models.
 **/* Estimate is significantly different from zero at the 0.01/0.05 level.

Qualitative interviews suggested that Medicare Advantage enrollees received less home health care and had shorter home health stays than traditional Medicare because Medicare Advantage generally authorizes fewer initial home health visits, requires more paperwork for reauthorization, and pays a lower per-visit rate for home health than traditional Medicare.

Home Health Care Use Grew Faster in Medicare Advantage than traditional Medicare in 27 States between 2011 and 2016

In 27 states, the share of beneficiaries using home health grew faster in Medicare Advantage than traditional Medicare over the 2011-2016 period, though the share of beneficiaries using home health was generally lower in Medicare Advantage than traditional Medicare throughout the study period (Table 3), consistent with national results shown in Table 1. Similarly, community-admitted home health care use grew faster in Medicare Advantage than traditional Medicare in 21 states over this period.

**TABLE 3. Changes in the Share of Beneficiaries Using Home Health Care
in MA and TM by Admission Type and State, 2011-2016**

State	Any Home Health Use					Community-Adjusted Home Health Use				
	MA		TM		Adjusted Difference-in- Differences, MA-TM	MA		TM		Adjusted Difference-in- Differences, MA-TM
	2011	2016	2011	2016		2011	2016	2011	2016	
Alabama	8.2%	9.9%	10.7%	10.5%	1.0**	2.3%	2.8%	3.2%	3.3%	0.1
Alaska	5.6%	6.0%	3.8%	3.1%	0.8	2.5%	1.9%	0.9%	0.8%	-0.7
Arizona	4.8%	4.2%	6.1%	5.9%	-0.6**	0.9%	1.0%	1.3%	1.5%	-0.1**
Arkansas	6.0%	8.0%	8.0%	8.0%	1.2**	1.6%	2.3%	2.0%	2.2%	0.2*
California	4.1%	4.5%	9.1%	9.5%	-0.3**	0.8%	1.0%	2.9%	3.5%	-0.6**
Colorado	6.9%	6.3%	7.9%	7.3%	-0.2	1.5%	1.6%	2.0%	2.1%	-0.1
Connecticut	6.2%	8.2%	11.8%	12.1%	1.2**	1.3%	1.8%	2.9%	3.1%	0.1
Delaware	7.7%	8.1%	8.2%	9.3%	-1.1*	1.2%	1.9%	1.2%	1.8%	-0.1
DC	4.2%	5.5%	8.7%	7.8%	2.4**	0.9%	0.9%	2.0%	1.7%	0.4
Florida	4.1%	4.5%	15.1%	13.6%	1.3**	1.1%	1.2%	6.5%	5.3%	1.0**
Georgia	7.4%	7.3%	9.0%	8.3%	0.1	2.2%	2.1%	2.7%	2.4%	0.0
Hawaii	3.1%	3.3%	2.6%	2.6%	0.1	0.6%	0.9%	0.6%	0.7%	0.1
Idaho	5.7%	5.1%	6.9%	7.4%	-1.2**	1.6%	1.5%	2.2%	2.3%	-0.3**
Illinois	6.8%	6.4%	11.8%	10.3%	0.9**	1.5%	1.5%	4.4%	3.4%	0.8**
Indiana	5.5%	6.4%	7.7%	7.5%	0.5**	1.3%	1.5%	2.1%	2.1%	0.0
Iowa	4.7%	5.6%	5.5%	5.2%	0.8**	0.9%	1.2%	1.1%	1.1%	0.2**
Kansas	6.0%	8.0%	6.2%	7.0%	0.4*	1.4%	1.9%	1.5%	1.9%	-0.1
Kentucky	7.7%	8.2%	9.5%	9.3%	0.6**	2.0%	2.2%	2.6%	2.6%	0.2**
Louisiana	9.7%	9.5%	15.2%	12.8%	1.4**	2.8%	2.8%	4.7%	4.1%	0.3**
Maine	6.6%	6.4%	8.8%	8.8%	-0.2	1.2%	1.3%	1.9%	2.2%	-0.2
Maryland	7.2%	7.3%	8.2%	8.4%	-0.4*	1.0%	1.6%	1.3%	1.6%	0.2*
Massachusetts	11.7%	11.4%	13.0%	12.5%	-0.1	2.5%	3.0%	3.0%	3.1%	0.1*
Michigan	8.1%	7.4%	12.3%	11.0%	0.1	2.2%	1.8%	4.7%	3.8%	0.1
Minnesota	5.7%	7.0%	5.3%	5.8%	0.3**	1.6%	2.1%	1.3%	1.7%	-0.1
Mississippi	9.7%	10.5%	12.5%	12.1%	0.4*	3.5%	4.1%	4.0%	4.5%	-0.2
Missouri	7.1%	7.7%	8.6%	8.0%	0.9**	1.4%	1.6%	2.0%	1.8%	0.2**
Montana	3.2%	3.4%	4.6%	3.9%	0.5**	0.7%	0.8%	1.1%	1.0%	0.2
Nebraska	5.9%	7.7%	6.1%	6.0%	1.2**	1.2%	1.9%	1.3%	1.4%	0.4**
Nevada	6.5%	5.5%	10.2%	10.3%	-1.2**	1.3%	1.1%	3.6%	3.7%	-0.4**
New Hampshire	7.1%	7.9%	9.9%	9.5%	0.0	1.6%	2.1%	2.2%	2.1%	0.1
New Jersey	5.8%	6.0%	8.8%	8.2%	0.4**	0.9%	1.2%	1.5%	1.6%	0.1
New Mexico	5.6%	5.9%	7.4%	6.8%	0.9**	1.5%	1.8%	2.0%	1.9%	0.4**
New York	7.3%	7.0%	9.5%	8.8%	-0.1*	1.3%	1.6%	2.0%	1.9%	0.1*
North Carolina	6.9%	6.8%	8.7%	8.6%	0.1	1.6%	1.7%	2.3%	2.4%	0.0
North Dakota	2.9%	3.6%	4.2%	3.2%	1.2*	0.3%	0.8%	0.6%	0.6%	0.4*
Ohio	8.2%	9.5%	9.8%	9.7%	0.6**	1.9%	2.4%	2.6%	2.5%	0.2**
Oklahoma	7.8%	8.7%	13.3%	12.4%	1.2**	2.2%	2.4%	4.1%	3.8%	0.3**
Oregon	5.2%	5.5%	5.5%	5.3%	0.5**	1.6%	1.8%	1.6%	1.6%	0.2**
Pennsylvania	9.8%	10.7%	10.7%	10.2%	0.4**	1.9%	2.3%	2.5%	2.3%	0.1**
Rhode Island	10.3%	9.7%	11.9%	11.0%	0.1	1.9%	2.2%	2.7%	2.5%	0.3**
South Carolina	7.8%	9.1%	7.8%	8.3%	0.2	2.1%	2.4%	2.0%	2.0%	0.1
South Dakota	2.3%	3.7%	3.6%	3.4%	1.1**	0.4%	0.7%	0.8%	0.7%	0.1
Tennessee	7.9%	7.3%	10.4%	9.4%	-0.2*	2.4%	2.2%	3.3%	3.1%	-0.3**
Texas	7.5%	8.1%	15.2%	12.9%	2.5**	2.5%	2.8%	5.6%	4.4%	1.3**
Utah	7.6%	8.0%	10.3%	10.1%	-0.1	2.5%	2.5%	3.6%	3.4%	-0.3**
Vermont	5.6%	6.5%	9.1%	9.0%	0.4	1.4%	1.4%	2.4%	2.4%	-0.2
Virginia	7.5%	8.1%	8.9%	8.9%	-0.4**	1.9%	2.1%	2.3%	2.2%	-0.2**
Washington	4.5%	4.7%	5.7%	5.5%	0.5**	1.1%	1.3%	1.5%	1.6%	0.2**
West Virginia	6.6%	8.0%	7.1%	8.3%	0.1	1.4%	2.1%	1.6%	2.1%	0.2*
Wisconsin	3.9%	4.8%	5.3%	5.4%	0.4**	0.8%	1.2%	1.2%	1.5%	0.0
Wyoming	3.8%	3.4%	4.5%	4.1%	-0.9	1.0%	0.8%	1.0%	1.0%	-0.5*

SOURCE: Data are from 2011 and 2016 MBSF and OASIS.

NOTES: Differences are adjusted for beneficiary demographic and eligibility characteristics.

**/* Estimate is significantly different from zero at the 0.01/0.05 level.

Medicare Advantage Home Health Use Grew More than traditional Medicare in States with a Moratorium on New Home Health Agencies between 2011 and 2016

Comparing Medicare Advantage and traditional Medicare home health care in moratorium states (Florida, Illinois, Michigan, Texas) and non-moratorium states from 2011 to 2016, we find that home health care use decreased in traditional Medicare and remained unchanged in Medicare Advantage in states with moratoria imposed between 2013 and 2016 (Table 4). Specifically, traditional Medicare home health care use fell 1.5 percentage points more in moratorium states than non-moratorium states. Using a triple-difference approach, we find that Medicare Advantage home health care use grew 1.5 percentage points faster than traditional Medicare home health use in states with a moratorium on new HHAs compared to non-moratorium states.

TABLE 4. Changes in the Share of Beneficiaries Using Home Health Care in MA and TM between 2011 and 2016, by Moratoria on HHAs							
	2011-2016 Adjusted Change in Moratorium States		2011-2016 Adjusted Change in Non-Moratorium States		Difference-in-Differences Moratorium States-- Non-Moratorium States		Triple-Difference Estimate Moratorium States-- Non-Moratorium States and MA-TM (7)
	MA (1)	TM (2)	MA (3)	TM (4)	MA (5)	TM (6)	
Any home health care use	0.4	-1.2**	0.4	0.1	0.0	-1.5**	1.5*

SOURCE: Data are from 2011 and 2016 MBSF and OASIS.

NOTES: Differences are adjusted for beneficiary demographic characteristics and eligibility. This table shows results from 7 separate linear regression models:

- (1) An MA model including both 2011 and 2016 spells in moratorium states.
- (2) A TM model including both 2011 and 2016 spells in moratorium states.
- (3) An MA model including both 2011 and 2016 spells in non-moratorium states.
- (4) A TM model including both 2011 and 2016 spells in non-moratorium states.
- (5) An MA model including 2011 and 2016 spells in both moratorium and non-moratorium states.
- (6) A TM model including 2011 and 2016 spells in both moratorium and non-moratorium states.
- (7) An MA and TM model including 2011 and 2016 spells in moratorium and non-moratorium states.

Results cannot be added across models. Triple-difference estimates are between MA and TM trends in home health use over the 2011-2016 period between states with and without a moratorium on new HHAs (moratorium states).

**/* Estimate is significantly different from zero at the 0.01/0.05 level.

Home Health Care Use Increased in HMO, PPO, and PFFS Plans between 2011 and 2016

Across Medicare Advantage contract types, use of home health care grew in HMOs, PPOs, and PFFS plans and did not change significantly in employer and SNPs between 2011 and 2016 (Table 5). The share of beneficiaries using community-admitted home health increased in both HMO and SNPs between 2011 and 2016 but did not change significantly in other plan types.

TABLE 5. Changes in the Share of Beneficiaries Using Home Health Care by MA Contract Type and Home Health Admission Type, 2011-2016								
	All Home Health Spells				Community-Admitted Spells			
	2011	2016	Adjusted Change	Adjusted Difference from HMO Change	2011	2016	Adjusted Change	Adjusted Difference from HMO Change
HMO	6.3%	6.4%	0.3**		1.4%	1.5%	0.2**	
PPO	5.5%	6.2%	0.2*	-0.4*	1.3%	1.6%	0.1	-0.3**
EGHP	6.9%	7.2%	0.3	-0.3	1.6%	1.8%	0.1	-0.2
SNP	8.3%	8.7%	0.4	0.1	2.4%	2.7%	0.2**	0.0
PFFS	6.6%	7.9%	0.7**	-0.2	1.8%	2.1%	0.1	-0.3*

SOURCE: Data are from 2011 and 2016 MBSF, OASIS, and CMS MA contract files.
NOTES: MSA, demonstration, PACE, and cost plans are not shown, but are included in overall estimates of MA home health care use. Differences are adjusted for beneficiary demographic characteristics, eligibility, and state.
 **/* Estimate is significantly different from zero at the 0.01/0.05 level.

Home Health Spell Lengths Fell in Most Medicare Advantage Plan Types between 2011 and 2016

Between 2011 and 2016, average home health spell lengths fell across all Medicare Advantage plan types except HMOs (Table 6). Spell lengths fell 3.5 days more in PPO than in HMO plans during this period, though PPO spells were still longer than HMO spells in 2016. Community-admitted home health spell lengths fell for all Medicare Advantage plan types between 2011 and 2016, with these spells decreasing 5.9 days more in PPOs than in HMOs over this period. However, PPO home health spells remained longer than HMO home health spells in 2016.

TABLE 6. Changes in the Length of Spell among Home Health Care Users by MA Contract Type and Home Health Admission Type, 2011-2016								
	All Home Health Spells				Community-Admitted Spells			
	2011	2016	Adjusted Change	Adjusted Difference from HMO Change	2011	2016	Adjusted Change	Adjusted Difference from HMO Change
HMO	53.5	53.4	-3.4		73.2	66.2	-7.6*	
PPO	65.1	64.5	-7.6**	-3.5*	91.7	82.0	-13.0**	-5.9*
EGHP	54.6	56.9	-4.2*	-0.7	75.3	72.3	-8.0**	-1.9
SNP	74.6	72.1	-7.3**	-4.7*	97.2	87.3	-11.7**	-6.6
PFFS	81.3	72.6	-9.5**	-5.7*	112.7	94.5	-13.6*	-7.5

SOURCE: Data are from 2011 and 2016 MBSF, OASIS, and CMS MA contract files.
NOTES: MSA, demonstration, PACE, and cost plans are not shown, but are included in overall estimates of MA home health care use in other tables. Differences are adjusted for beneficiary demographic characteristics, eligibility, state, primary diagnosis, and functional status.
 **/* Estimate is significantly different from zero at the 0.01/0.05 level.

Medicare Advantage Home Health Users Were Less Likely to Have a Hospital Admission During Their Home Health Spell than traditional Medicare Home Health Users in Both 2011 and 2016

Both traditional Medicare and Medicare Advantage reduced their rates of hospital admission during home health spells over the 2011-2016 period after adjustment for beneficiary characteristics including primary diagnosis and functional status, and there was no statistically significant difference between Medicare Advantage and traditional Medicare reductions in

hospital overall or for community-admitted home health users (Table 7). However, readmissions from post-acute home health care use fell more slowly in Medicare Advantage than in traditional Medicare between 2011 and 2016. Across all admission types, hospital admission rates were lower for Medicare Advantage than traditional Medicare in both 2011 and 2016.

TABLE 7. Changes in the Share of Home Health Spells Requiring a Hospital Admission in MA versus TM by Home Health Admission Type, 2011-2016

	2011			2016			Change, 2011-2016		
	MA	TM	Adjusted Difference MA-TM (1)	MA	TM	Adjusted Difference MA-TM (2)	MA Adjusted Change (3)	TM Adjusted Change (4)	Adjusted Difference-in-Differences MA-TM (5)
All home health spells	16.5%	19.2%	-2.2**	15.4%	17.4%	-1.9**	-2.7**	-3.4**	0.4
Community-admitted	15.9%	17.0%	-1.9**	13.9%	15.0%	-1.6**	-2.7**	-3.0**	0.0
Post-acute	16.7%	20.5%	-2.7**	16.0%	18.7%	-2.4**	-2.7**	-3.5**	0.5*

SOURCE: Data are from 2011 and 2016 MBSF and OASIS.
NOTES: Differences are adjusted for beneficiary demographic characteristics, eligibility, state, primary diagnosis, and functional status. This table shows results from 5 separate linear regression models:
(1) A 2011 model including both MA and TM spells.
(2) A 2016 model including both MA and TM spells.
(3) An MA model including both 2011 and 2016 spells.
(4) A TM model including both 2011 and 2016 spells.
(5) A difference-in-differences model including MA and TM spells for both 2011 and 2016.
Results cannot be added across models.
**/* Estimate is significantly different from zero at the 0.01/0.05 level.

DISCUSSION

While MedPAC has expressed concerns about rising rates of community-admitted home health care in traditional Medicare between 2001 and 2017--and potential misuse of the benefit as a substitute for non-covered long-term care services and supports--these increases primarily occurred between 2001 and 2011,^{1,15} prior to our 2011-2016 study period. Though overall home health care use grew in Medicare Advantage and remained stable in traditional Medicare between 2011 and 2016 (after adjustments), this trend was not uniform across states. In particular, we found that the four states where CMS imposed a moratorium on new HHAs between 2013 and 2016 saw larger decreases in traditional Medicare home health use than states without a moratorium, while there were no statistically significant differences between changes in Medicare Advantage home health use in moratorium states compared to non-moratorium states. This suggests that the moratorium on new HHAs may have been effective at reducing high rates of traditional Medicare home health care use in those states without significantly affecting Medicare Advantage, which may have already been practicing selective contracting prior to the moratorium. Our qualitative interviews confirmed that Medicare Advantage plans used criteria beyond the Medicare certification criteria when including HHAs in their networks, so Medicare Advantage plans in these states may have excluded HHAs with a high risk of fraud and abuse from their networks prior to the CMS moratorium.

Between 2011 and 2016, the difference between Medicare Advantage and traditional Medicare home health spell lengths remained stable, with both Medicare Advantage and traditional Medicare home health spell lengths falling over the study period. Home health spells generally became shorter in all Medicare Advantage plan types except HMOs, and reductions in spell length were particularly large for community-admitted home health users enrolled in Medicare Advantage PPOs. This may suggest that the increases in home health care use in Medicare Advantage over the 2011-2016 period were primarily among enrollees needing shorter home health spells, or that Medicare Advantage plans have increased their management of home health spell lengths as enrollment in Medicare Advantage has increased. Our qualitative interviews suggested that Medicare Advantage more strictly manages the number of visits and spell length than traditional Medicare, with some interviewees suggesting that Medicare Advantage enrollees get less home health care visits than they need. In addition, interviewees indicated that Medicare Advantage generally pays a low per visit rate for home health care, making Medicare Advantage enrollees less attractive to HHAs and lowering the incentive for HHAs to seek authorization for additional visits.

LIMITATIONS

Our study has several limitations. First, we are unable to adjust for differences in health and functional status between Medicare Advantage and traditional Medicare, within Medicare Advantage, or over time in analyses of the share of beneficiaries using home health. There is ongoing disagreement about the health status and service utilization of Medicare Advantage enrollees relative to traditional Medicare enrollees, with some evidence indicating that Medicare Advantage enrollees are healthier than traditional Medicare enrollees or use fewer services,¹⁶ and other studies suggesting condition-based risk adjustment may have substantially reduced favorable selection into Medicare Advantage.¹⁷ It is therefore possible that there are unobserved differences between Medicare Advantage and traditional Medicare enrollees that are correlated with home health use, length of spell, and hospital readmissions. In addition, the growth in Medicare Advantage enrollment over the study period likely brought new types of beneficiaries into Medicare Advantage, including sicker beneficiaries, so some of the narrowing of gaps in home health care use between Medicare Advantage and traditional Medicare over this period may reflect the changing health status of Medicare Advantage enrollees.

Second, we do not observe home health visits or therapy use in the OASIS, so it is unclear whether there are differences between Medicare Advantage and traditional Medicare in the intensity of home health care use, and how those differences have changed over time. In addition, the 60-day cycle for the OASIS reflects traditional Medicare, not Medicare Advantage, payment structures, and HHAs may not have an incentive to file discharges immediately in Medicare Advantage. Qualitative interviews with Medicare Advantage plans confirmed that Medicare Advantage plans do not use OASIS records for payment or quality measurement activities.

Finally, we do not observe other types of care that may be provided in the home, such as home-visiting programs or in-home personal care that may be provided directly by Medicare Advantage plans, particularly SNPs,¹⁸ without referral to a HHA. SNPs grew in popularity over the study period, optionally exposing more Medicare Advantage enrollees to these alternative in-home benefits over time.

END NOTES

1. Medicare Payment Advisory Commission. (2017). *Report to the Congress: Medicare Payment Policy: Home Health Care Services*. Washington, DC: MedPAC. Available at: http://www.medpac.gov/docs/default-source/reports/mar17_medpac_ch9.pdf.
2. Kim, H., & Norton, E.C. (2015). Practice patterns among entrants and incumbents in the home health market after the prospective payment system was implemented. *Health Economics*, 24(1), 118-131.
3. Huckfeldt, P.J., Escarce, J.J., Rabideau, B., Karaca-Mandic, P., & Sood, N. (2017). Less intense postacute care, better outcomes for enrollees in Medicare Advantage than those in fee-for-service. *Health Affairs*, 3(1), 91-100.
4. Waxman, D.A., Min, L., Setodji, C.M., Hanson, M., Wenger, N.S., & Ganz, D.A. (2016). Does Medicare Advantage enrollment affect home healthcare use? *American Journal of Managed Care*, 22(11), 714-720.
5. Benjamin, A.E. (1993). An historical perspective on home care policy. *Milbank Quarterly*, 71(1), 129-66.
6. Medicare Payment Advisory Commission. (2011). *Report to the Congress: Regional Variation in Medicare Service Use*. Washington, DC: MedPAC.
7. Medicare, Medicaid, and Children's Health Insurance Programs: Announcement of Revisions to the Provider Enrollment Moratoria Access Waiver Demonstration for Part B Non-Emergency Ground Ambulance Suppliers and Home Health Agencies in Moratoria-Designated Geographic Locations. (2018). 83 FR 42037.
8. In addition to moratoria on new HHAs, CMS also implemented a home health value-based purchasing program in nine states in 2016, including Arizona, Florida, Iowa, Massachusetts, Maryland, Nebraska, North Carolina, Tennessee, and Washington. We do not analyze the effects of this program here, as our most recent year of data was the first year of implementation (2016).
9. For additional information, see Centers for Medicare & Medicaid Services. (2019). *Home Health Quality Measures*. Baltimore, MD: CMS. Available at: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Measures.html>.

10. When we examined spells in the OASIS that only signaled a start of care, they still showed high rates of recommended therapy visits and were not coded to indicate they were expected to be a 1-visit home health spell. Potentially, this indicates that these spells were missing discharge or continuation-of-care data and, as such, should not be interpreted as a 1-visit home health spell.
11. Employer-sponsored Medicare Advantage plans can have either an HMO or PPO structure. Employer plans have been removed from the HMO and PPO estimates presented here.
12. Most SNPs use an HMO network structure. SNP HMOs have been removed from the HMO estimates presented here.
13. Healthcare Cost and Utilization Project. (2018). *Beta Clinical Classifications Software (CCS) for ICD-10-CM/PCS*. Rockville, MD: Agency for Healthcare Research and Quality.
14. Plotzke, M., Christian, T.J., Fout, B., Keane, N., & White, A. (2016). *Medicare Home Health Prospective Payment System: Case-mix Methodology Refinements: Overview of the Home Health Groupings Model*. Cambridge, MA: Abt Associates.
15. Medicare Payment Advisory Commission. (2019). *June 2019 Data Book: Post-Acute Care*. Washington, DC: Medicare Payment Advisory Commission.
16. Jacobson, G., Neuman, T., & Damico, A. (2019). *Do People Who Sign up for Medicare Advantage Plans have Lower Medicare Spending?* Menlo Park, CA: Kaiser Family Foundation.
17. Newhouse, J.P., Price, M., McWilliams, J.M., Hsu J., Souza, J., & Landon, B.E. (2012). Adjusted mortality rates are lower for Medicare Advantage than traditional Medicare, but the rates converge over time. *Health Affairs*, 38(4), 554-560.
18. For a list of in-home services that may be provided by qualified SNPs, see: Centers for Medicare & Medicaid Services. (2016). *Medicare Managed Care Manual: Chapter 16-B: Special Needs Plans* [Internet]. Baltimore, MD: CMS. Available at: <https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/mc86c16b.pdf>.