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Shifting Patterns of Physician Home Visits

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Abstract

Objectives: Home visits have been shown to improve quality of care and lower medical costs for complex elderly patients. We investigated trends in physician home visits and domiciliary care visits as well as physician characteristics associated with providing these services. **Design:** Longitudinal analysis of Medicare Part B claims data for a national sample of direct patient care physicians in 2006 and 2011. Descriptive statistics were used to characterize the physician sample and to determine numbers of home visits and domiciliary visits in total and by physician specialty. **Setting:** Patient homes, nursing homes, and domiciliary care facilities. **Participants:** Direct patient care physicians (n = 22186). **Measurements:** Physician demographics, specialty, practice characteristics (practice type, geographic location), number of home visits, and domiciliary visits in 2006 and 2011. **Results:** We found a small increase (n = 63501) in total number of home visits made to Medicare beneficiaries between 2006 and 2011 performed by a decreasing percentage of physicians (5.1%, n = 18165 in 2006; 4.5%, n = 15296 in 2011). There was substantial growth in domiciliary care visit numbers (n = 218514) and a small increase in percentage of physicians delivering these services (2.0% in 2006, 2.3% in 2011). Physicians who performed home visits were more likely to be older, in rural locations, specialists in primary care, and more likely to provide nursing home and domiciliary care compared with physicians who did not make any home visits ($P < .05$). **Conclusion:** Home visits and domiciliary visits to Medicare beneficiaries are increasing. General internal medicine physicians provided the highest number of home and domiciliary care visits in 2006, and family physicians did so in 2011. Such delivery models show promise in lowering medical costs while providing high-quality patient care.

Keywords

geriatrics, home visits, house calls, domiciliary care visits, Medicare

Introduction

Once at the brink of extinction, home visits have started to make a comeback.[1] This could be out of recognition that our current health care system is insufficient in meeting needs of older frail patients with multiple comorbidities.[2-4] Readily available point of care testing, along with advancements in home health technology and support have improved the clinician's ability to deliver care outside the office setting.[5,6] Policy makers increased their support of home visits since 2012 via the innovative Independence at Home Act demonstration, part of the Patient Protection and Affordable Care Act (section 3024). This 3-year demonstration provides primary care services in the home to chronically ill Medicare patients, and aims to reduce cost while improving quality of care.[7,8] An interim analysis recently showed that the demonstration achieved a 25 million dollar saving in the first year, amounting to an average savings of $3070 per beneficiary.[9]

Home visits are a patient-centered health care delivery model that aligns with the Triple Aim: improving population health, reducing costs, and improving quality through patient experience and satisfaction.[10] It is well known that medical spending in the United States is skewed with the top 1% of the US population accounting for almost 23% of overall health care spending, and the top 5% accounting for 50%.[11] Various home visit–based health care delivery models demonstrated decreases in risk of functional decline,[12] hospitalizations and hospital length of stay,[13-17] skilled nursing facility placement,[14,15] and emergency room visits.[18] By targeting frail, high-cost patients with multiple chronic conditions, some home visits programs have shown significant decreases in health care costs.[13-15] Additionally, patients perceive that home visit programs build trusting relationships between medical personnel, patients, and their

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families, which results in higher satisfaction, even when compared with care provided in the hospital.[15]

Perhaps owing to these benefits and government initiatives, prior studies have found that physician home visits have increased significantly in recent years. For example, the number of physician home visits to Medicare beneficiaries more than doubled from 2000 to 2006.[19] Interestingly, the total number of physicians performing home visits decreased. This suggests that there are more physicians who perform high-volume home visits, while those who make an occasional home visit decreased. Reported number of home visits paid by Medicare Part B from 2006 to 2011 increased from 2 147 385 to 2 641 020 but this also included visits billed by nurse practitioners and physician assistants.[20] Analyses of data from 1989 and 2000 to 2006 found consistent associations between certain physician characteristics and the increased likelihood of performing home visits: older, primary care physicians, in solo practice, osteopathic physician, and male.[19,21] Because both of these studies were cross sectional, it remains unknown how many physicians continue to provide home visits over time. Additionally, in 2006 a new evaluation and management code for domiciliary care became available and home visit trends may be affected by this.

Because of the development of new billing codes and because prior research was not provider specific, we aimed to examine trends in total number of physician home and domiciliary care visits to Medicare beneficiaries using a longitudinal sample from 2006 to 2011 and examine physician characteristics.

Methods

Sample

We used a unique state-weighted sample of direct patient care physicians drawn from the 2007 American Medical Association (AMA) Masterfile. Physicians in smaller states were oversampled. A data request was made to the Centers for Medicare & Medicaid Services for the claims data of all Medicare beneficiaries seen at least once by the physicians in our sample in 2006 and in 2011. Only active physicians who submitted at least one claim to Medicare in each year were included in the sample.

Variables

Physician demographics were obtained from the AMA Masterfile, National Plan and Provider Enumeration System (NPPES), and Medicare claims data. Physician age was calculated as of June 30, 2011. Information on type of medical school training such as allopathic (MD) versus osteopathic (DO) graduates, American Medical School graduate versus International Medical Graduates (IMG) was obtained from the AMA Masterfile. Physician specialty was determined from the AMA Masterfile and was coded to enable comparison to prior research: geriatrician, family physician, general internal medicine, general practitioner, and "other," which included all other physician specialties. Physician trainees were not included. Geographic location was determined by geocoding the physician's practice address in the 2011 NPPES file and linked to rural/urban designations. To enable comparisons to past research, we identified physicians in solo practice from the primary practice employment code in the AMA Masterfile. We identified home visits by Current Procedures and Technology (CPT) codes (99341-99345 for new patients and 99347-99350 for established) and domiciliary visits by CPT codes (99324-99328 for new and 99334-99337 for established). Physicians were classified as making a home visit or domiciliary visit in each year by whether they billed for at least 1 visit type.

Analytic Strategy

We used descriptive statistics to characterize the physician sample and to count numbers of home visits and domiciliary visits in total and by physician specialty. Weighted analyses were conducted to make national estimates in numbers of visits and percentages of physicians. Statistical significance was determined using 2-sided t tests and chi-square tests with a P value of .05. Ethical approval was granted by the American Academy of Family Physicians Institutional Review Board.

Results

Our sample consisted of 22 186 physicians. In the bivariate analysis of our longitudinal sample, physicians who performed at least 1 home visit were more likely to be older physicians who did not make any home visits either in 2006 in 2011 and less likely to have allopathic training (Table 1). Family physicians were most likely to provide home visits in both 2006 and 2011. Physicians who provided home visits were also more likely to provide nursing home care (64.3% vs 12.5% in 2011, $P < .05$) and domiciliary care (20.5% vs 1.2%, $P < .05$) than those who did not provide home visits. In 2011, male physicians were somewhat more likely to make home visits but not in 2006. Physicians in solo practice and those in rural areas were more likely to make home visits than those in urban or group practices in both 2006 and 2011.

In 2011, there were 689 physicians who had stopped and 503 physicians who had started performing home visits since 2006. For domiciliary care visits 261 stopped providing these between 2006 and 2011 while 290 physicians started.

In weighted analysis, we found that from 2006 to 2011, the percentage of physicians billing Medicare for at least 1

Table 1. Physician Characteristics by Performing Home Visits to Medicare Beneficiaries in 2006 and 2011.

	2006 (N = 22 186)		2011 (N = 22 186)	
	Home Visits (5.6%, n =1232)	No Home Visits (94.4%, n = 20 954)	Home Visits (4.7%, n = 1046)	No Home Visits (95.3%, n = 21 140)
Age in years in 2011, mean (SD)	55.3 (8.6)	52.6 (8.8)*	54.6 (8.7)	52.7 (8.8)*
Male gender, %	77.0	77.4	73.6	77.6*
MD, %	88.3	93.6*	89.6	93.5*
International medical graduate, %	18.0	16.3	17.5	16.4
Specialty, %				
Family medicine	45.7	14.8*	47.2	15.0*
General internal medicine	32.4	13.3*	32.7	13.4*
General practice	4.4	0.9*	4.2	0.9*
Geriatric medicine	2.1	0.4*	3.2	0.4*
Other	15.4	70.7*	12.8	70.3*
Provides nursing home care, %	66.0	15.0*	64.3	12.2*
Provides domiciliary care, %	14.7	1.2*	20.5	1.2*
Solo practice, %	27.4	14.5*	27.5	14.6*
Rural, %	36.0	19.2*	35.6	19.4*

* $P < .05$.

home visit decreased from 5.1% to 4.5%, while those billing for domiciliary care visits increased from 2.0% to 2.3% (Table 2). Sampled physicians billed Medicare for 39 068 home visits and 33 057 domiciliary care visits in 2006, and 35 973 home visits and 45 299 domiciliary care visits in 2011 (weighted, this represents 917 202 home visits and 730 236 domiciliary care visits in 2006 and 980 703 home visits and 1 048 178 domiciliary care visits in 2011). This is an increase of 6.9% in home visits and a 30% increase in domiciliary care visit numbers between 2006 and 2011.

In both 2006 and 2011, geriatricians had the highest percentage of physicians in their specialty making home visits and domiciliary care visits, whereas "other" physicians had the lowest in both years. In terms of change in home visit numbers from 2006 to 2011, geriatricians showed the largest growth in the percentage of physicians making home visits (relative percentage change of 7.6%), whereas physicians in all other specialties decreased. For domiciliary care visits, only geriatricians decreased (relative percentage change −0.9%) whereas all other specialists increased. General practitioners and family physicians made the largest increases in percentage of physicians making domiciliary care visits (relative percentage increase of 36% and 23%, respectively).

Family physicians also showed the largest increase in the number of home visits (69%), while there was a decrease in the number of home visits in general internal medicine (−22%), general practice (−12%), and geriatric medicine (−36%). In 2006, general internal medicine made the highest number of home visits overall (weighted 357 475) accounting for more than a third of all home visits, while in 2011 family physicians made the highest number of home visits (weighted 320 518). The same trend was found for domiciliary care visits.

Discussion

In a nationally representative sample of 22 186 physicians, the number of physician home visits made to Medicare beneficiaries increased 6.9% between 2006 and 2011, with an 11.7% decrease in the percentage of physicians making home visits. The increase in physician home visits was much lower than the 108% increase between 2000 and 2006.[19] Since ours was a longitudinal sample, we were able to track individual practices over time. More physicians stopped making home visits from 2006 to 2011 than the number who started during this time period. The overall trend of more home visits being performed by fewer physicians could be reinforced by policies that support high-volume home visit practice models such as the Independence at Home demonstration and the Veteran's Administration Home-Based Primary Care model. Home care is also shifting toward more interprofessional home care teams involving nurse practitioners and physician assistants. It is possible that older physicians who make regular home visits to well-known elderly patients are retiring, which may also contribute to the decrease in overall physician numbers.

The decreasing growth in home visits may be partially explained by the significant growth in domiciliary care visits from 2006 to 2011. Domiciliary visit CPT codes became available in 2006, and are intended for services rendered to patients living in Assisted Living Facilities, Group Homes, Custodial Care Facilities, and Residential Substance Abuse Facilities.[22] Before 2006, it is possible that visits to patients

Table 2. Weighted Trends in Home Visits and Domiciliary Care by Physician Specialty to Medicare Beneficiaries in 2006 and 2011.

	Home Visits		Domiciliary Care Visits		Absolute Change in Percentage		Relative Percentage Change	
	2006 (n = 18165)	2011 (n = 15296)	2006 (n = 7310)	2011 (n = 8109)	Home Visits	Domiciliary Care Visits	Home Visits	Domiciliary Care Visits
Percentage of providers making at least one home visit or domiciliary care visit								
Total	5.1	4.5	2	2.3	–0.6	0.3	–11.76	15
Family medicine	14.2	13.5	4.8	5.9	–0.7	1.1	–4.93	22.92
General internal medicine	12.4	10.3	5.7	6.1	–2.1	0.4	–16.94	7.02
General practice	25.4	20.6	4.5	6.1	–4.8	1.6	–18.90	35.56
Geriatric medicine	28.8	31	23.5	23.3	2.2	–0.2	7.64	–0.85
Other	1.2	0.9	0.5	0.5	–0.3	0	–25	0
Number of home visits or domiciliary care visits					Change in visit numbers			
Total	917202	980703	730236	948750	63501	218514	6.92	29.92
Family medicine	190047	320685	231124	393319	130638	162195	68.74	70.18
General internal medicine	359479	280518	304215	365780	–78961	61565	–21.97	20.24
General practice	133112	117023	19150	17595	–16089	–1555	–12.09	–8.12
Geriatric medicine	66548	42604	44794	23628	–23944	–21166	–35.98	–47.25
Other	168016	219873	130953	148428	51857	17475	30.86	13.34

in domiciliary settings were billed as home visits, and there may have been a transition to the new code over time. Rapid increases in domiciliary care visits may be spurred by financial incentives as the average Medicare reimbursement being slightly higher than a home visit (in 2011, visits of equal complexity: 99349 home visits for established patient and 99336 domiciliary care visits for established patient were $169.88 and $183.81, respectively), and it may be easier for providers to see multiple patients at the same site as opposed to traveling between patient's homes. In 1998, Medicare reimbursement for home visits almost doubled, but since then there has not been any major increase in the payment schedule, which could also account for less growth in home visits.[23,24] The recession starting in 2007 affected health care delivery, and may have caused physicians to limit time-consuming services of lower profit,[1] such as home visits.

Prior research showed that from 2000 to 2006, family physicians showed the smallest increase in home visits, but interestingly, in this study we found that family physicians made a significantly larger increase in home visit numbers (69%) than physicians in any other specialty. Prior to 2014, residents were required to make a minimum of 2 home visits to fulfill training requirements. While the required numbers were small, this could have provided enough familiarity for more family physicians to make home visits a part of their practice. Now that home visits are no longer required in family medicine training, it will be intruiging to see whether family physicians will continue their upward trend in providing this service.

Limitations of our study are that our data are derived from Medicare claims, so visits that were not billed, or made to Medicaid and private insurance patients were not included. Second, our sample was limited to physicians, and other research has shown significant growth in home visits provided by nurse practitioners and physician assistants.[1] Further research using all claims data may better track overall trends in home visit and how physicians and other providers collaborate to provide these services. Third, we do not have information about individual practice models, so we can only make inferences about what contributes to the trends and changes in home visit and domiciliary care visits over our study period.

Conclusion

In our large nationally representative sample, we found that the overall number of home visits from 2006 to 2011 was increasing but the rate has decreased compared to previously reported growth. Since the development of coding to track domiciliary care visits, our study demonstrated a rapid increase in utilization of domiciliary care visits in this time frame. Policies such as the Independence at Home Demonstration showed cost savings with improved quality metrics, and it is clear that societal need for this model of care is increasing. Educating the upcoming generation of physicians to make or lead home visits and supporting physicians who provide this service will likely benefit both our patients and the health care system overall.

Authors' Note

The ABFM Foundation had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; or decision to submit the manuscript for publication.

Declaration of Conflicting Interests

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References

1. American Academy of Home Care Medicine. House call trends 2006-2013. Number of house calls by specialty. http://c.ymcdn.com/sites/www.aahcm.org/resource/resmgr/News_Room/House_Call_Trends_2006-2013.pdf. Accessed October 23, 2015.
2. Hayashi J, Leff B. Medically oriented HCBS: house calls make a comeback. *Generations*. 2012. http://www.asaging.org/blog/medically-oriented-hcbs-house-calls-make-comeback. Accessed October 23, 2015.
3. Landers SH. Why health care is going home. *N Engl J Med*. 2010;363:1690-1691.
4. Kao H, Conant R, Soriano T, McCormick W. The past, present, and future of house calls. *Clin Geriatr Med*. 2009;25:19-34, v.
5. Landers SH, Peterson LE, Madigan EA, Xu F, Koroukian SM. Trends in home diagnostic testing for medicare beneficiaries. *J Am Geriatr Soc*. 2007;55:138-140.
6. Landers SH. The case for "connected health" at home. *Cleve Clin J Med*. 2013;80(electronic suppl 1):eS27-sS29.
7. Centers for Medicare & Medicaid Services. Independence at home demonstration fact sheet. 2014. https://www.cms.gov/Medicare/Demonstration-Projects/DemoProjectsEvalRpts/downloads/IAH_FactSheet.pdf. Accessed December 11, 2014.
8. Centers for Medicare & Medicaid Services. Independence at home demonstration. http://innovation.cms.gov/initiatives/independence-at-home/. Accessed December 11, 2014.
9. Centers for Medicare & Medicaid Services. Affordable Care Act payment model saves more than $25 million in first performance year. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2015-Press-releases-items/2015-06-18.html. Accessed October 23, 2015.
10. Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. *Health Aff (Millwood)*. 2008;27:759-769.
11. Wajnberg A, Wang KH, Aniff M, Kunins HV. Hospitalizations and skilled nursing facility admissions before and after the implementation of a home-based primary care program. *J Am Geriatr Soc*. 2010;58:1144-1147.
12. Edes T, Kinosian B, Vuckovic NH, Nichols LO, Becker MM, Hossain M. Better access, quality, and cost for clinically complex veterans with home-based primary care. *J Am Geriatr Soc*. 2014;62:1954-1961.
13. De Jonge KE, Jamshed N, Gilden D, Kubisiak J, Bruce SR, Taler G. Effects of home-based primary care on Medicare costs in high-risk elders. *J Am Geriatr Soc*. 2014;62:1825-1831.
14. Cryer L, Shannon SB, Van Amsterdam M, Leff B. Costs for 'hospital at home' patients were 19 percent lower, with equal or better outcomes compared to similar inpatients. *Health Aff (Millwood)*. 2012;31:1237-1243.
15. Edwards ST, Prentice JC, Simon SR, Pizer SD. Home-based primary care and the risk of ambulatory care-sensitive condition hospitalization among older veterans with diabetes mellitus. *JAMA Intern Med*. 2014;174:1796-1803.
16. Beck RA, Arizmendi A, Purnell C, Fultz BA, Callahan CM. House calls for seniors: building and sustaining a model of care for homebound seniors. *J Am Geriatr Soc*. 2009;57:1103-1109.
17. NIHCM Foundation. Health care's 1%: the extreme concentration of U.S. health spending. http://www.nihcm.org/concentration-of-health-care-spending-chart-story. Accessed December 16, 2014.
18. Stuck AE, Egger M, Hammer A, Minder CE, Beck JC. Home visits to prevent nursing home admission and functional decline in elderly people: systematic review and meta-regression analysis. *JAMA*. 2002;287:1022-1028.
19. Peterson LE, Landers SH, Bazemore A. Trends in physician house calls to Medicare beneficiaries. *J Am Board Fam Med*. 2012;25:862-868.
20. American Academy of Home Care Medicine. Number of house calles paid by Medicare Part B. http://www.aahcm.org/general/custom.asp?page=Number_house_calls. Accessed November 11, 2014.
21. Meyer GS, Gibbons RV. House calls to the elderly—a vanishing practice among physicians. *N Engl J Med*. 1997;337:1815-1820.
22. Centers for Medicare & Medicaid Services. Medicare claims transmittal 775. December 2005. https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/downloads/R775CP.pdf. Accessed December 18, 2014.
23. Landers SH. Home care: a key to the future of family medicine? *Ann Fam Med*. 2006;4:366-368.
24. American Academy of Home Care Medicine. Home visit/dom care Medicare payment history—2004 to 2013. https://aahcm.site-ym.com/resource/resmgr/news_room/paymenthistory-06to13.pdf. Accessed December 11, 2014.
25. AcademyHealth. Briefs and reports: impact of the economy on health care. August 2009. https://www.academyhealth.org/files/HCFO/findings0809.pdf. Accessed October 23, 2015.

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