

National trends in billing patient portal messages as e-visit services in traditional Medicare

Terrence Liu^{1,*}, Ziwei Zhu², A Jay Holmgren³, Chad Ellimoottil²

¹Department of Internal Medicine, Institute for Healthcare Policy and Innovation, University of Michigan, Ann Arbor, MI 48109-2800, United States

²Department of Urology, Institute for Healthcare Policy and Innovation, University of Michigan, Ann Arbor, MI 48109-2800, United States

³Center for Clinical Informatics and Improvement Research, Division of Clinical Informatics and Digital Transformation, University of California, San Francisco, San Francisco, CA 94117, United States

*Corresponding author: Department of Internal Medicine, Institute for Healthcare Policy and Innovation (IHPI), University of Michigan, Ann Arbor, MI 48109-2800, United States. Email: ttliu@med.umich.edu

Key words: patient portal messages; secure messages; e-visits; Medicare; billing.

Introduction

Beginning in 2020, the Centers for Medicare & Medicaid Services introduced online digital evaluation and management (E&M) codes for clinicians to address patient concerns asynchronously through patient portal messages. These patient portal messages can be billed as “e-visits” if they require at least 5 minutes of clinician time for medical decision-making over a 7-day period. The growing volume of portal messages has raised concerns of clinician burnout and prompted health systems to find sustainable strategies to manage them.¹ E-visit billing has sparked debate on finding the right balance between enhancing patient access to care while fairly compensating for clinicians’ time.² Many clinicians have since adopted this new billing policy,^{3,4} and patterns of e-visit billing are only starting to be described.⁵ Which clinicians engage in e-visit billing and which patients are being billed at a national level remain unknown. As clinicians increasingly use portal messaging, we sought to better understand e-visit billing trends, clinician characteristics, and patient characteristics to inform ongoing policy discussions on e-visit reimbursement and implementation.

Methods

In this cross-sectional study, we identified e-visit services for 100% Medicare fee-for-service population from January 1, 2020, to December 31, 2022. Fee-for-service or traditional Medicare provides health insurance coverage to adults aged 65 or older and individuals with long-term disabilities in the United States, with 31 million beneficiaries enrolled in 2021. We used Current Procedural Terminology codes 99421-99423 to identify e-visits and measured monthly billed e-visits per 100 000 beneficiaries to account for fluctuations in enrollment during the study period. We compared these trends across

different clinician types, including primary care, medical specialties, surgical specialties, behavioral health, nurse practitioners, and physician assistants. We measured counts of most common diagnoses associated with e-visits. We examined demographic characteristics between beneficiaries who were billed for e-visits compared with those billed for other E&M services. Our study was deemed not regulated by our institutional review board.

Results

Billing for e-visit services reached a peak of 728 monthly encounters per 100 000 beneficiaries during the initial onset of the COVID-19 pandemic, and later stabilized to levels of approximately 90 monthly encounters per 100 000 beneficiaries (Figure 1A). E-visits constituted 0.09%, 0.05%, and 0.05% of all E&M services in 2020, 2021, and 2022, respectively. When compared with other specialties (medical, surgical, behavioral health, and non-physician specialties), primary care providers billed more frequently, accounting for over 50% of all billed e-visits for most of the study period. Among all billed e-visits, approximately 30% were billed at the highest level of clinician time, requiring at least 21 minutes (Figure 1B). Among all beneficiaries who received E&M services in the study period, 0.8% of beneficiaries were billed for at least 1 e-visit. Fewer of these beneficiaries lived in rural areas compared with beneficiaries using telehealth and in-person care, but otherwise shared similar demographic characteristics of age, sex, race, and ethnicity (Table 1). Hypertension was the most common diagnosis addressed in e-visits (21%), followed by diabetes (2.3%) and COVID-19 (2%).

Discussion

Our study found that billing for portal messages as e-visits represented only a minimal portion of the total evaluation and

Received: February 16, 2024; Revised: March 25, 2024; Accepted: April 1, 2024

© The Author(s) 2024. Published by Oxford University Press on behalf of Project HOPE - The People-To-People Health Foundation, Inc.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.

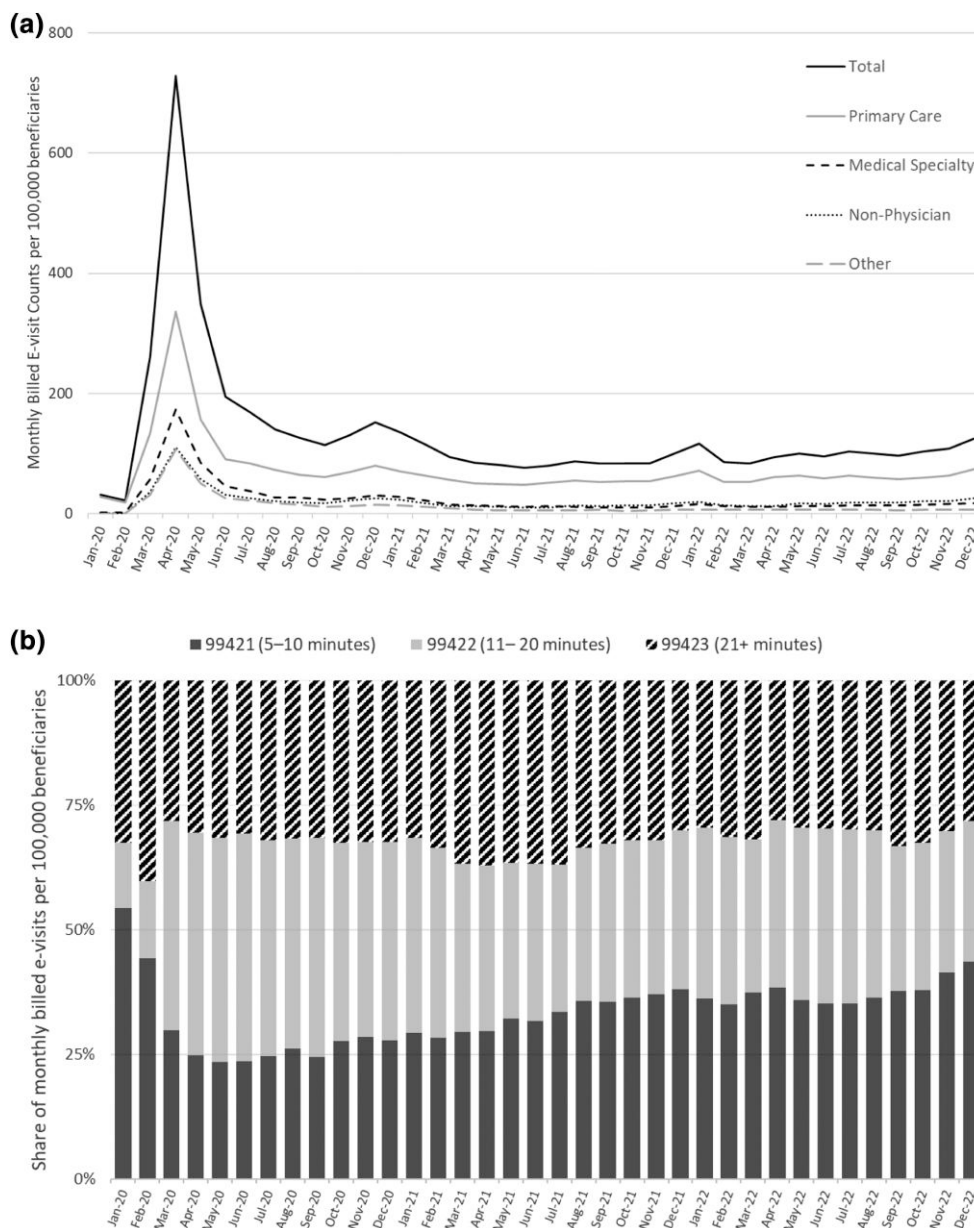


Figure 1. (A) Monthly volume of billed e-visits per 100 000 Medicare beneficiaries, by clinician type, 2020–2022. Other category includes clinicians in surgical, hospital-based, behavioral health, and OB-GYN specialties. (B) Proportion of monthly billed e-visits per 100 000 Medicare beneficiaries, by clinician time for medical decision making, 2020–2022.

management services, with no significant growth in billing for these services over time. Additionally, fewer than 1% of Medicare beneficiaries were billed for these services. These findings can help alleviate concerns regarding the potential overuse of portal message and e-visit billing. It is important to note that we were unable to measure eligible e-visits and portal messages that were not billed, which limits our ability to quantify the total volume and uncompensated workload associated with patient messaging.

Of note, while e-visits constitute a small percentage of billed care, we observed that primary care providers bill for these services more frequently than other specialties. While these findings may suggest that primary care providers disproportionately

deliver e-visit services, we did not compare rates of e-visit billing against rates of other E&M services in primary care, which limits our ability to measure relative workload. However, given the ongoing concern of increased work burden among primary care providers contributing to burnout,^{6,7} our findings can provide context for future investigation on how e-visits impact clinician workload in primary care.

Finally, while most demographic characteristics were similar between individuals billed for e-visits vs other E&M services, fewer individuals billed for an e-visit lived in rural areas. As e-visits may be particularly advantageous to rural residents in reducing their travel burden for medical appointments, further research is needed to explore whether this difference

Table 1. Patient demographic characteristics of Medicare beneficiaries billed for e-visit, telehealth, and in-person evaluation and management (E&M) services.

	E-visit, <i>n</i> (%)	Audio-only telehealth, video telehealth, and in-person E&M services, <i>n</i> (%)
Age, mean (SD), y	76 (8)	77 (8)
Sex		
Male	90 394 (38.5%)	12 444 439 (43.7%)
Female	144 274 (61.5%)	16 011 655 (56.3%)
Race/ethnicity		
Non-Hispanic White	187 244 (79.8%)	23 284 069 (81.8%)
Black or African American	14 387 (6.1%)	1 913 452 (6.7%)
Asian or Pacific Islander	9054 (3.9%)	862 907 (3.0%)
Hispanic	15 020 (6.4%)	1 396 212 (4.9%)
American Indian or Alaskan Native	872 (0.4%)	128 193 (0.5%)
Other	2283 (1.0%)	233 004 (0.8%)
Unknown	5808 (2.5%)	638 258 (2.2%)
Region		
Midwest	51 300 (21.9%)	6 284 563 (22.1%)
Northeast	38 638 (16.5%)	5 067 643 (17.8%)
South	82 901 (35.3%)	11 273 649 (39.6%)
West	60 991 (26.0%)	5 769 784 (20.3%)
Other	838 (0.4%)	60 456 (0.2%)
Medicaid dual-eligible	37 732 (16.1%)	3 945 786 (13.9%)
Rural	31 443 (13.4%)	6 738 568 (23.7%)

arises from rural beneficiaries receiving fewer e-visits or whether their clinicians may bill less frequently.

Contribution statement

T.L. had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: T.L., C.E. Acquisition, analysis, or interpretation of data: All authors. Drafting of the manuscript: T.L. Critical revision of the manuscript for important intellectual content: All authors. Statistical analysis: T.L., Z.Z., C.E. Obtained funding: C.E. Administrative, technical, or material support: Z.Z., C.E. Study supervision: C.E.

Supplementary material

Supplementary material is available at *Health Affairs Scholar* online.

Funding

This research was supported by grant support from the Agency for Healthcare Research and Quality (R01 HS028397 to Dr. Ellimoottil).

No funding organization was involved in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Conflicts of interest

Please see ICMJE form(s) for author conflicts of interest. These have been provided as supplementary materials. No other disclosures were reported.

Notes

1. Stillman M. Death by patient portal. *JAMA*. 2023;330(3):223-224. <https://doi.org/10.1001/jama.2023.11629>
2. Meyer H. As more patients email doctors, health systems start charging fees. *KFF Health News*. Published September 14, 2023. Accessed October 20, 2023. <https://kffhealthnews.org/news/article/email-doctor-visits-new-fees-copays/>
3. Holmgren AJ, Byron ME, Grouse CK, Adler-Milstein J. Association between billing patient portal messages as e-visits and patient messaging volume. *JAMA*. 2023;329(4):339-342. <https://doi.org/10.1001/jama.2022.24710>
4. Patel M, Haddad H, Miller R, et al. An evaluation of eVisits at an academic medical center. *J Ambul Care Manage*. 2021;44(2):166-169. <https://doi.org/10.1097/JAC.0000000000000369>
5. Holmgren AJ, Oakes AH, Miller A, Adler-Milstein J, Mehrotra A. National trends in billing secure messages as E-visits. *JAMA*. 2024;331(6):526-529. <https://doi.org/10.1001/jama.2023.26584>
6. Rotenstein LS, Holmgren AJ, Downing NL, Bates DW. Differences in total and after-hours electronic health record time across ambulatory specialties. *JAMA Intern Med*. 2021;181(6):863-865. <https://doi.org/10.1001/jamainternmed.2021.0256>
7. Nath B, Williams B, Jeffery MM, et al. Trends in electronic health record inbox messaging during the COVID-19 pandemic in an ambulatory practice network in New England. *JAMA Netw Open*. 2021;4(10):e2131490. <https://doi.org/10.1001/jamanetworkopen.2021.31490>