



Changes in Health Care Financing & Organization (HCFO)

findings brief

key findings

- Practices that are physician-owned and practices that use Electronic Health Records (EHRs) have lower nonemergent emergency department (ED) rates and lower emergent-primary care treatable ED rates.
- Medical practices with more nurse practitioners or physician assistants per physician have higher emergent-primary care treatable ED and higher ambulatory care sensitive (ACS) rates, but their nonemergent ED rates do not differ statistically from those of other practices.
- The ability to provide and manage accessible, coordinated care declines as medical practices grow larger and more complex.

Reducing Inappropriate Emergency Department and Avoidable Hospitalization Rates: Assessing the Influence of Medical Group Practice Characteristics

Overview

Concern is growing over escalation in the improper and avoidable use of emergency departments (ED) by patients who did not receive appropriate care from their physicians. A recent study conducted by the Medicare Payment Advisory Commission found that 60 percent of Medicare beneficiary ED visits and 25 percent of their hospital admissions could have been avoided if the patients had received proper care from their regular physicians in outpatient settings.¹ While earlier research has examined the inappropriate use of EDs, none of the studies investigated the variation in these rates at the level of individual medical practices.

In a HCFO-funded study, John Krlewski, Ph.D., M.H.A., of the University of Minnesota and Medica Research Institute and his colleagues used a national sample of 212 medical group practices during 2009 to examine practice characteristics influencing the inappropriate use of EDs and ambulatory care sensitive (ACS) hospital admissions rates

by patients. The findings raise questions about the costs of preventing these incidents at the medical group practice level.²

Sample and Methods

For their analysis, the researchers relied on a sample of 212 practices that had 2009 organizational data on file with the Medical Group Management Association and could be matched with Medicare patients. The practices were located throughout the United States and ranged in size from 5 to more than 1,500 full-time equivalent (FTE) physicians. Using the Centers for Medicare & Medicaid Services claims data, the researchers matched the 212 practices with Medicare patients.

The researchers used two main data sets and classification algorithms for their analysis. First, they used claims from Medicare Part A inpatient and outpatient files to identify ED visits. Second, they used an ED classification algorithm developed by John Billings at New York University to identify whether the ED



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visit was appropriate. They grouped the original 640 diagnoses that were used for the algorithm into the following four categories:

1. Nonemergent: Indicating that medical care was not needed within 12 hours.
2. Emergent/primary care treatable: Indicating that treatment was required within 12 hours but could have been treated in a primary care office.
3. Emergent/ED care needed-preventable/avoidable: Indicating ED care was needed, but the visit could have been prevented with timely and effective primary care.
4. Emergent/ED care needed-not preventable/avoidable (injury-related, drug-related, alcohol related, mental-health related).

The researchers focused on “nonemergent” and “emergent/primary care treatable” categories for their analysis because these two categories provided the best examples of preventable emergency department use by patients attributed to a medical group practice.

Using the Agency for Healthcare Research and Quality’s (AHRQ) ACS admissions criteria, the researchers relied on a Medicare Part A inpatient data set to identify the number of ACS hospital admissions (ACS admissions).³ The AHRQ algorithm uses the principal diagnosis and secondary diagnosis to determine if an admission was an ACS admission. The researchers applied the following practice variables from the Medical Group Management Association data: practice size, practice ownership, number of non-physician providers, electronic health record capacity, urban/rural location, and practice profit level (efficiency).

Results

The study results show that ACS hospital rates vary from 4 to 29 percent with a mean of 14 percent. The ED rate for non-emergent conditions ranges from 2 to 14 percent of ED visits (mean of 5 percent),

and the emergent but primary care treatable mean rate is 4 percent, ranging from 2 to 10 percent.

The researchers found that physician owned practices and practices that utilize EHRs have lower nonemergent ED rates and lower emergent-primary care treatable ED rates. Physician owned practices also have lower ACS hospitalization rates. The researchers found that practice ownership is the factor with the greatest influence on both inappropriate ED rates and avoidable hospital admissions rates.

The results also show that medical practices with more nurse practitioners or physician assistants per physician demonstrate higher emergent primary care treatable ED and higher ACS rates but that their nonemergent ED rates do not differ statistically from those of other practices. The findings raise questions about whether certain staffing structures create fragmentation rather than promote coordination of patient care.

In another key finding, practices with higher net revenue ratios have higher non-emergent and emergent primary care treatable ED rates and ACS hospitalization rates, suggesting that improved practice-level efficiency may exacerbate higher ED and hospitalization rates.

In addition, the researchers found that practices that use EHRs have lower non-emergent and emergent primary care treatable ED rates but that their ACS hospital rates do not differ from those without EHRs. The findings suggest that EHRs are associated with factors that decrease ED use but do not influence care management and coordination, which is often associated with ACS hospital admissions.

Discussion and Policy Implications

The study results provide several key insights into how practice characteristics affect ED and avoidable hospitalization rates. First, it is important to note that researchers often link a lack of health insurance and a lack of access to health

care to inappropriate use of EDs and avoidable hospital admissions. This study of fully insured Medicare enrollees suggests that the characteristics of ambulatory care providers are also a significant factor contributing to these rates.

Second, the research results raise potential concerns about the trend toward hospital ownership of medical practices and the formation of hospital-based accountable care organizations. According to the researchers, hospitals might be structuring their medical practices in a way that maximizes both hospital-and practice-level net revenue by substituting the use of hospital facilities for medical-practice-based programs that improve access to and management of care. If so, hospitals will find it difficult to compete under the total cost of care payment plans that require different business models when some current revenue services such as EDs and inpatient admissions become cost centers. It will also be difficult to transition to different models given the cost of implementing new ambulatory care access and care coordination management programs amid a decline in inpatient services.

Third, the researchers’ results point to cautions about the alleged advantages of large integrated health care systems. Larger practices in this study do not have lower ED rates but do have higher ACS hospitalization rates. Results show that the performance of multispecialty practices on access and care management is no better than that of primary care practices; in fact, larger multispecialty medical group practices were out-performed by smaller primary care practices.

The findings have particular relevance for understanding how medical group practices may help decrease rates of inappropriate ED use. The researchers found that the inappropriate ED rate for patients in these medical practices does cost less than the costs reported by some previous studies. However, even the lower costs still have significant implications. As the researchers noted, Medicare pays about

\$109 for an established doctor office visit for an upper respiratory tract infection compared to \$109 plus an average \$395 facility fee for the treatment of that illness in a hospital ED.

Conclusion

As policymakers consider how to control the increasing costs associated with inappropriate ED use, the study suggests that the ability to provide and manage accessible, coordinated care declines as medical group practices grow larger and more complex. Accordingly, questions remain as to how best to structure practices to

ensure the best and most appropriate setting for patient care while controlling costs in the health care system.

For more information

Contact John Krlewski, Ph.D., M.H.A., at krle001@umn.edu.

About the author

Emily Blecker, B.A., is a research assistant at AcademyHealth with the Changes in Health Care Financing and Organization (HCFO) initiative. She may be reached at 202-292-6736 or at emily.blecker@academyhealth.org.

Endnotes

1. Medicare Payment Advisory Commission, http://www.medpac.gov/transcripts/1012_presentation_ppv.pdf, February 2013.
2. For complete findings, see Krlewski J, et al., Medical Group Practice Characteristics Influencing Inappropriate Emergency Department and Avoidable Hospitalization Rates, *J Ambulatory Care Manage*, Vol. 36, No. 4, pp 286-91, 2013.
3. Agency for Healthcare Research and Quality, ACS Admissions Criteria, <http://wagner.nyu.edu/faculty/billings/acs-algorithm.php>.