were enrolled in high-deductible health plans, almost half (46.9%) had a family out-of-pocket health care burden exceeding 20% of family disposable income. Although only 22% of the overall low-income population had full-year employer-sponsored insurance, their financial burden is of concern because, owing to the fact that they have offers of employer-sponsored insurance, they are likely not eligible for the premium and cost-sharing subsidies in the health care Marketplace that other adults in this income group can access. Moreover, they may not be eligible for Medicaid depending on their income and whether their state expanded Medicaid. For clinicians and patients, high out-of-pocket costs for low-income adults with employer-sponsored insurance may create a barrier to achieving effective treatment to manage multiple chronic conditions.

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Drafting of the manuscript: Abdus.
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Trends in Emergency Department Visits and Admission Rates Among US Acute Care Hospitals

Hospital-based care accounts for approximately one-third of US health expenditures, and increasingly, most hospitalizations originate from emergency departments (ED).[1-3] Value-based payment programs have focused on decreasing avoidable ED visits and hospitalizations. We describe trends in ED visits and admission rates among US acute care hospitals from January 1, 2006, through December 31, 2014.

Editor's Note page 1710

Methods | We performed a retrospective observational study of the National Emergency Department Survey, using sampling weights and strata to generate national estimates. We examined patient-level characteristics, including age, sex, insurance, median income of patient zip code, and Elixhauser comorbidity score. Admission rate from the ED was defined as the number of admissions originating in the ED divided by the number of ED visits. We excluded visits of those 18 years or younger; those who left without being seen or against medical advice, transferred, or died on arrival in the ED; and those missing disposition. Data were analyzed from January 1, 2006, through December 31, 2014. Use of this publicly available dataset does not constitute human subjects research, and therefore did not require review by our institution's review board.

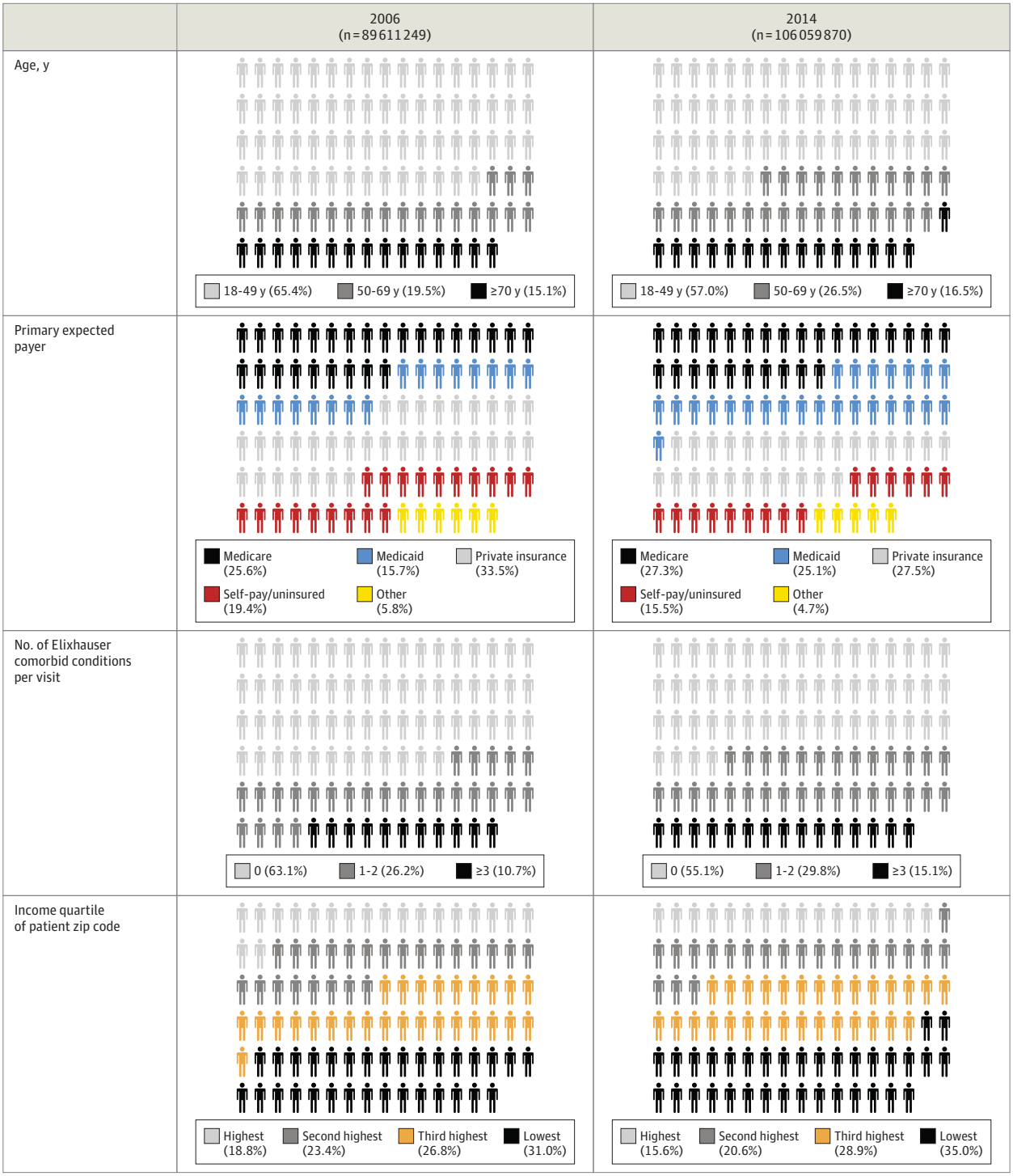
Results | From 2006 through 2014, annual ED visits increased by 18.4%, from 89.6 to 106.0 million, and total ED hospitalizations increased by 6.8%, from 17.4 to 18.6 million. During the same period, ED admission rates fell from 19.4% to 17.5%, a 9.8% relative decline.

The proportion of ED visits by patients older than 50 years, with Medicare or Medicaid insurance, with 1 or more comorbid Elixhauser conditions, and from lower income areas increased from 2006 to 2014 (**Figure 1**). Patients of increasing age experienced larger reductions in ED admission rates, and ED admission rates decreased the most among Medicare-reimbursed ED visits relative to other insurance types (**Figure 2**). Patients with the most comorbid illness experienced the largest magnitude decrease in admission rates from the ED—by 15% among patients with at least 3 comorbid Elixhauser conditions, and by 11% among patients with 1 to 2 comorbid Elixhauser conditions.

Discussion | From 2006 to 2014, ED visits increased 18.4%, and ED admission rates decreased 9.8%. The increase in ED visits, outpacing population growth, underscores an unabating demand for acute, unscheduled care. Declining ED admission rates represent a significant reduction in hospital-based care that has received little attention to date.

Our findings are unlikely to be explained by lower acuity ED visits, given the increase in age and comorbidities. In fact, ED visits with the highest burden of comorbid illness experienced the largest reductions in ED admission rates. Decreasing ED admissions may be attributed to a combination of clinical factors, such as outpatient clinical pathways (eg, diagnostic protocols for chest pain), and policy factors, such as the 2010 Recovery Audit Contractor program and 2014 Two-Midnight Rule, which increased

Figure 1. Patient Characteristics of Adult Emergency Department (ED) Visits, 2006 and 2014

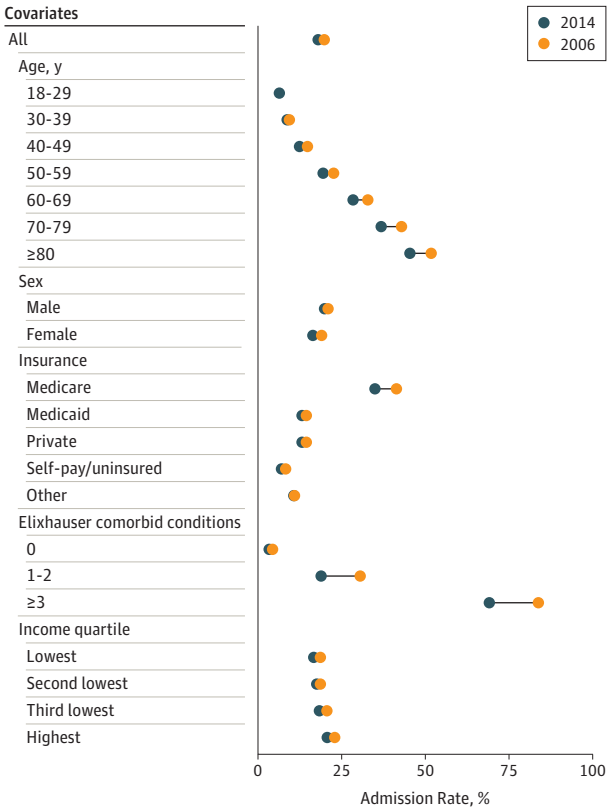


The proportion of ED visits by female patients was 56.7% in 2006 and 57.6% in 2014. Data are obtained from the National Emergency Department Survey, using sampling weights and strata to generate national estimates. Percentages of patients have been rounded and may not total 100. Each data marker represents 1% of US ED visits.

scrutiny of short-stay hospitalizations, and the 2009 Patient Protection and Affordable Care Act,[4] which contributed to increased ED visits and improved access to follow-up care, likely reducing hospitalizations.[5] Increases in non-ED admissions are also unlikely to explain our findings, given prior work demonstrating that, increasingly, most hospitalizations originate from the ED.[2]

Further research is needed to examine unintended consequences of reduced ED admissions, such as morbidity, mor-

Figure 2. Emergency Department Admission Rate



Data are obtained from the National Emergency Department Survey, using sampling weights and strata to generate national estimates.

tality, readmissions, or ED revisits. Our findings are limited by our administrative data set, which lacks data on clinical factors and use of observation care; however, the 0.4% increase in observation care from 2006 to 2014 is less than the 1.9% reduction in hospitalization we observed.[6] The increase in comorbid conditions per visit can be explained in part by more complete documentation, which has contributed to decreases in hospital readmission rates[7]; however, documentation likely does not explain the entire observed effect, given the increasing age among ED visits. Our findings highlight the major role EDs play in the shift from inpatient to outpatient care—a role that will expand as ED visits and the proportion of hospitalizations originating in the ED continue to increase.

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Correction: This article was corrected on November 19, 2018, to fix transposed data marker colors in the legend of Figure 2.

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Concept and design: Lin, Richardson, Schuur.
Acquisition, analysis, or interpretation of data: Lin, Baker, Richardson.
Drafting of the manuscript: Lin, Baker.
Critical revision of the manuscript for important intellectual content: Lin, Richardson, Schuur.
Statistical analysis: Lin, Baker.
Administrative, technical, or material support: Lin, Richardson.
Supervision: Lin, Schuur.

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Editor's Note

Decreased Admission Rate From the Emergency Department With Increased Emergency Department Visits—The Good and the Bad

In this issue of *JAMA Internal Medicine*, Lin et al[1] analyze National Emergency Department Survey data and find that overall visits to the emergency department (ED) have substantially increased from 2006 to 2014, but the proportion of visits that results in admission has declined. The editors of *JAMA Internal Medicine* found these ED trends interesting and important: What does this mean?

Lin et al[1] see the decreased admission rate as a sign of success of efforts to decrease hospital admissions. Overall, the patients coming to the ED are older, more likely to have 1 or more comorbid conditions, and more likely to be poor, so the decrease in admission rate is unlikely owing to patients being less sick on arrival at the ED. As the Lin et al note,[1] the drop may be owing to the combined effects of several factors, including increased use of observational status and

greater acceptance of rapid outpatient assessment of coronary artery disease and other conditions.

This drop in hospital admissions might be seen as a hopeful sign of decreasing costs in US health care were it not accompanied by a major increase in ED visits. We appear to have an insatiable desire for immediate acute care. Given the low overall hospital admission rate, many of these patients likely would have been more appropriate for office visits rather than ED. However, as we know, most physician offices are open Monday through Friday, 9 AM to 5 PM, and many do not have ability to schedule additional patients for acute care at the last minute. The result is a rational decision on the part of the patient to seek care in a place that is always open and has excellent immediate access to advance screening and specialty referral. Ultimately this decision is likely to result in long waits for the patients, higher expenses for systems and patients, and more unnecessary care. The growing lack of access to timely primary care in the United States has many ramifications; increased ED visits, identified in this study,[1] may be another one.

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HEALTH CARE POLICY AND LAW

Evaluation of Industry Relationships Among Authors of Clinical Practice Guidelines in Gastroenterology

Financial conflicts of interest (FCOI) may unduly influence physician decision-making. For this reason, the Institute of Medicine recommends that guideline development teams be composed of at most 50% authors who have financial relationships to disclose, and recommends abstaining from financial conflicts for a period of 1 year following guideline publication.[1] Several studies have evaluated the extent of FCOI between industry and authors of clinical practice guidelines (CPGs) in dermatology,[2] oncology,[3] and otolaryngology[4]; however, such an analysis has not been performed in gastroenterology. Our objectives were to evaluate industry payments received by, and FCOI disclosure practices of, authors of 15 gastroenterology clinical practice guidelines.

Editor's Note page 1715

Related article page 1712

Methods | We retrieved information about CPGs, including the names of authors and their disclosed FCOIs, from the American College of Gastroenterology (ACG) website.[5] Individual payment data was retrieved for each guideline author using the 2014 to 2016 Centers for Medicare and Medicaid Services (CMS) OpenPayments database (OPD) (**Table**).[6] Because the ACG does not clearly delineate a recommended conflict-free interval for its guideline authors, we assessed a period beginning 6 months prior to and ending 6 months following guideline publication, for a total of 12 months, which was the longest possible timeframe permitting analysis of the same number of months of OPD payment records for each ACG guideline published between 2014 and 2016. OpenPayments identifies 4 payment categories: general, research, associated research, and ownership. The general category includes compensation for food/beverage, travel, speaking fees, consulting fees, honoraria and other services. Transactions falling outside the prespecified date range or those categorized as food/beverage were excluded. We calculated medians and interquartile ranges (IQRs) for each guideline for both total and general payments received. We also evaluated, qualitatively, whether authors did or did not disclose any FCOI in a CPG and whether or not any evidence of potential FCOI was found on OPD. All statistical analyses were performed using Microsoft Excel (version 15.38, Microsoft).

Results | Among the 15 CPGs identified from the ACG website, there were 83 total authors (median number of authors per CPG, 4; IQR, 3-6). Overall, 44 of 83 (53%) authors received industry payments and the median percentage of guideline authors with FCOIs per CPG was 50% (IQR, 50%-75%). The median total payments received by guideline authors was $1000 (IQR, $0-$39 938). Both the number of authors with industry relationships and the magnitude of those relationships varied greatly between guidelines (Table). Among the 83 authors, only 16 (19%) both disclosed FCOIs in the CPG and had received payments according to OPD or had disclosed no FCOIs and had received no payments according to OPD. Among 146 cumulative FCOIs disclosed by authors and 148 relationships identified on OPD, only 49 (34%) were both disclosed as FCOI and evidenced by OPD payment records.

Discussion | Our investigation sought to understand and characterize the extent of relationships between authors of CPGs in gastroenterology and their efforts to disclose those relationships to relevant stakeholders. Our findings suggest that although almost half of authors have no industry relationships, those who do often receive sizable sums. Our finding that FCOI disclosure only corroborates with OPD payment records between 19% and 34% of the time also suggests that guidance from the ACG may be needed to improve FCOI disclosure efforts in future iterations of gastroenterology CPGs. One limitation of our study is that we were only able to evaluate a period of 12 months for each guideline. The ICMJE advocates for disclosure of relationships for 36 months prior to CPG authorship, so our analysis may underestimate the prevalence of industry relationships among gastroenterology CPG authors. We recommend that the ACG draft new policies with specific expectations for FCOI disclosure among authors of gastroenterology CPGs, and that large-scale efforts be made to improve the comprehensiveness and reliability of the OpenPayments Database.