State of the National Emergency Department Workforce: Who Provides Care Where?

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Study objective: We describe the current US emergency medicine workforce in terms of clinician type and examine rural and urban emergency medicine workforce differences.

Methods: Using the 2014 Medicare Public Use Files, we performed a cross-sectional study of all clinicians receiving reimbursement for evaluation and management (E/M) services (levels 1 to 5) to Medicare fee-for-service Part B beneficiaries in the emergency department. Providers were defined as emergency physicians, nonemergency physicians, or advanced practice providers, corresponding with the Medicare Public Use Files data set. The primary outcome was the number of clinicians providing greater than 10 E/M claims tabulated as a distinct encounter. Urbanicity data were obtained from the National Bureau of Economic Research.

Results: Of 58,641 unique emergency medicine clinicians, 35,856 (61.1%) were classified as emergency physicians, 8,397 (14.3%) as nonemergency physicians, and 14,360 (24.5%) as advanced practice providers. Among nonemergency physicians categorized as emergency medicine clinicians, family practice and internal medicine predominated (41.7% and 19.9%, respectively). Among advanced practice providers, physician assistants (68.4%) and nurse practitioners (31.5%) predominated. A total of 58,565 emergency medicine clinicians were mapped to 2,291 US counties or equivalents. Urban counties had a higher proportion of emergency physicians (63.9%) compared with rural counties (44.8%); 27.1% of counties had no emergency medicine clinicians and 41.4% of counties had no emergency physicians reimbursed by Medicare fee-for-service Part B.

Conclusion: This work establishes a new baseline estimate of the emergency care workforce, encompassing nearly 60,000 emergency medicine clinicians, of whom fewer than 2 in 3 were emergency physicians. Notable differences exist in the type of clinician staffing of emergency care between urban and rural communities. [Ann Emerg Med. 2018;■:1-6.]

Please see page XX for the Editor's Capsule Summary of this article.

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INTRODUCTION

Background

Despite slow acceptance of the emergency medicine specialty in its nascent stages, it is now widely recognized that emergency care requires specialized skills, and emergency departments (EDs) need a unique and expert workforce.[1] Increases in patient visit volume during the last 4 decades have created workforce shortages despite an increase in number and size of emergency medicine residency training programs that has led to growth in numbers of graduates that outpaces that of any other specialty.[1] Accordingly, ED staffing gaps are often filled by nonemergency-medicine-trained physicians and by advanced practice providers such as nurse practitioners and physician assistants.[1]

Importance

The makeup of the national emergency medicine workforce has not been examined in a data-driven fashion in nearly a decade.[2,3] Furthermore, previous analyses of the emergency care workforce have been based on clinician surveys subject to recall bias or data sets compiled from state licensure files that cannot accurately describe national practices based on current participation in patient care.[2,3] Because workforce shortages are likely ongoing and may be particularly severe in rural areas because of fewer incentives and greater barriers for staffing,[1] it is essential to understand the current state and distribution of the emergency medicine workforce. Accordingly, the release of the Medicare Public Use Files creates a unique opportunity to identify emergency medicine clinicians through current administrative claims data.

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Editor's Capsule Summary

What is already known on this topic

Emergency departments are staffed by many types of providers.

What question this study addressed

What proportion of the emergency care workforce are emergency physicians, nonemergency physicians, and advanced practice providers?

What this study adds to our knowledge

According to Medicare data, emergency physicians compose 61% of the emergency care workforce; nonemergency physicians, 14%; and advanced practice providers, 25%.

How this is relevant to clinical practice

This does not directly affect clinical practice but may be useful in planning the need for future emergency physicians and advanced providers.

Goals of This Investigation

We describe the US national emergency care workforce in terms of 3 broad categories of emergency medicine clinicians: emergency physicians, nonemergency physicians, and advanced practice providers. As a secondary objective, we compare the makeup of emergency medicine clinicians in rural and urban areas.

MATERIALS AND METHODS

Study Design

This cross-sectional analysis was performed with the Centers for Medicare & Medicaid Services' 2014 Provider Utilization and Payment Data Physician and Other Supplier Public Use Files (Medicare Public Use Files) (https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/index.html). The study was deemed exempt from institutional review board approval because no patient identifiers were used.

The Medicare Public Use Files include all clinicians with active national practitioner identification numbers who were reimbursed for professional or procedural services greater than 10 times by Medicare Fee-for-Service Part B in 2014. Medicare Public Use Files provide clinician-level information such as specialty, credentials, National Plan and Provider Enumeration System–registered address, services billed, and number of reimbursements.

Of Medicare Public Use Files providers, only those with addresses registered to the 50 states and Washington, DC, were included. For details on excluded locations (eg, US territories), see Table E1, available online at http://www.annemergmed.com. Emergency medicine clinicians were defined as any clinician who received greater than 10 reimbursements for any ED levels 1 to 5 evaluation and management (E/M) claim, based on Healthcare Common Procedure Coding System codes 99281 to 99285. Of these, emergency physicians were defined by the Medicare Public Use Files provider type variable listed as emergency medicine. Nonemergency physicians were defined as those with any other medical specialty. Emergency physicians and nonemergency physicians were confirmed to have credentials of MD, DO, or MBBS. Advanced practice providers were defined as having any provider type value corresponding to the Centers for Medicare & Medicaid Services definition of advanced practice providers, including nurse practitioners, physician assistants, certified registered nurse anesthetists, certified clinical nurse specialists, and certified nurse-midwives.[4]

The source of the Medicare Public Use Files provider type variable is claims data as received by Medicare from participating institutions during claims submissions. Methods for designating provider type on claims may be institution specific. For example, at the corresponding author's institution, the medical biller uses the specialty associated with the highest level of training for each clinician. For clinicians identified as belonging to multiple specialties, the Medicare Public Use Files report the specialty for which the clinician billed the highest number of services that year.

Primary Data Analyses

We tabulated numbers of emergency physicians, nonemergency physicians, and advanced practice providers among emergency medicine clinicians, as well as medical specialties composing nonemergency physicians (Table E2, available online at http://www.annemergmed.com).

Sensitivity Analyses

To evaluate robustness of data from the main analyses, additional sensitivity analyses were performed with increasingly strict cutoffs to define emergency medicine clinicians: 20 and 70 levels 1 to 5 E/M claims. The 20-claim cutoff was chosen to correspond to 100 total claims per year because Medicare claims comprise approximately 20% of all E/M claims.[5] The 70-claim cutoff was chosen to correspond to at least 10% of a full-time ED provider schedule, assuming that a provider treats 2 ED patients per hour, full time is approximately

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