

### Estimating the Number and Characteristics of Hospitalist Physicians in the United States and Their Possible Workforce Implications

The specialty of hospitalist in medicine, which began in 1995, is fast emerging. Hospitalists play an important role as primary care providers in inpatient medicine.<sup>1\*</sup> They help to coordinate specialist physicians and other health care personnel involved in the care of hospitalized patients, focus on quality of care and efficient use of hospital resources, manage the transition of care within the hospital and upon discharge,<sup>2</sup> and can increase the efficiency of office-based primary care physicians.<sup>3</sup> Changes in reimbursements, restrictions on resident duty hours, expanded regulations, and the increasing complexities of hospital systems have all contributed to the growth in hospitalist positions.

The American Medical Association (AMA) Physician Masterfile and other conventional methods for estimating numbers of physicians may provide incomplete coverage of the population of hospitalists, because until recently the specialty was not formally listed. The Masterfile included only 250 hospitalists by specialty at the end of 2010. In contrast, surveys from both the Society of Hospital Medicine (SHM) and the American Hospital Association (AHA) estimated that there were approximately 30,000 hospitalists in the United States in 2010.<sup>2,4</sup> Further, due to the specialty's youthfulness, available literature also does not provide information on the age, gender, or other demographic characteristics of practicing hospitalists. Such information is crucial to understanding the specialty's likely future growth trajectory and its effect on the physician workforce.

To augment established but imperfect estimates of the current number and

demographics of hospitalists, we used a new data source in this *Analysis in Brief* to provide a different approach: the Association of American Medical Colleges (AAMC) 2009 Survey of Primary Care Physicians. We then discuss the possible workforce implications of hospitalists, especially as they relate to primary care. This new, evolving specialty warrants attention and understanding as it emerges as a prominent part of medicine.

#### Methodology

In 2009, the AAMC's Survey of Primary Care Physicians was sent to 9,000 physicians. This survey was designed to look at primary care capacity and readiness for reform, but it also included questions on hospitalists, which are discussed here. Recipients for this one-time mail survey were a random stratified sample of U.S. physicians who had a specialty of family medicine, general practice, internal medicine, and pediatrics, as well as OB/GYN, internal medicine subspecialists, and pediatric subspecialists. The sample was drawn from the AMA Masterfile—a database with information about all physicians in the United States, Puerto Rico, the Virgin Islands, and some Pacific Islands.

The strata in the sample of 9,000 were constructed with four variables: specialty, area (rural vs. urban), Massachusetts versus the rest of the U.S. aggregated,<sup>†</sup> and degree type (M.D. vs. D.O.). Just under 37 percent of sampled physicians responded to the survey (n=3,323). For this analysis of hospitalists, we further restricted the sample to those who: 1) were active in medicine providing direct patient care; 2) had a specialty of family medicine, general internal medicine or internal

medicine subspecialty, general or subspecialty pediatrics, OB/GYN, or general practice; and 3) responded to the question "Are you a hospitalist?" These conditions restricted our analysis to 2,746 cases, or 85 percent of the 3,233 physicians who responded to the survey. (See Supplemental Table 1.) Results for general practice physicians were included with family medicine in this report. For these analyses, data were weighted using the same four variables, which comprised the sampling strata, such that weighted strata were within 0.001 percent of the sampling frame (i.e., population) distributions.

#### Results

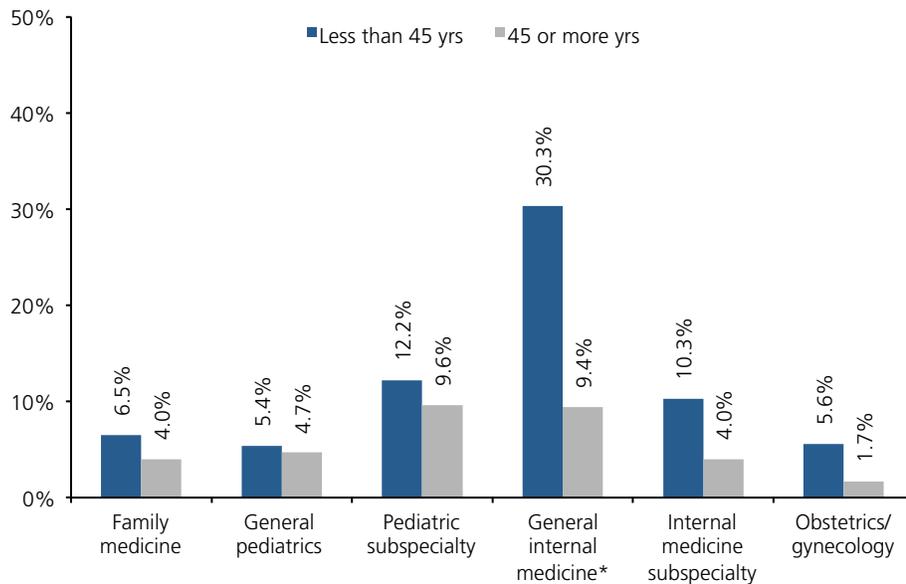
Of all the respondents, approximately 7.9 percent identified themselves as hospitalists (16.5% of general internal medicine respondents; 10.3% of pediatric subspecialists; 5.7% of internal medicine subspecialists; 5.0% of general pediatricians; 4.8% of family medicine physicians; and 2.9% of OB/GYN physicians). Age differences existed for several primary care specialties. Of all general internal medicine respondents under 45 years of age, 30.3 percent considered themselves hospitalists, compared with only 9.4 percent of those over 45. A significant age difference was also found for internal medicine subspecialists (Figure 1).

Differences between men and women were evident for younger physicians: Men under 45 years of age were one and a half times as likely as women to be hospitalists (15.8% vs. 9.9%, respectively). Conversely, among older physicians—who are less likely to be hospitalists in general—no statistically significant difference was found between the percentages of men (5.1%)

\* For full reference list, please see the supplemental information for this AIB.

† Massachusetts was oversampled in the survey from which these data were drawn because it had already implemented its own health care reform measures and allowed comparisons on that basis (one of the purposes of the original survey).

Figure 1: Percentage of Physicians in Sample Who Are Hospitalists, by Self-Identified Specialty &amp; Age



\* P&lt;0.05, within specialty

Source: AAMC 2009 Survey of Primary Care Physicians

and women (5.9%) who reported being hospitalists.

To estimate the total number of active hospitalists in the United States, we applied rates from our sample based on age, sex, and specialty to AMA Physician Masterfile data on the total national population of primary care physicians in a series of analyses (see Supplemental Table 2). Based on this methodology, we estimate there were approximately 21,100 to 22,900 hospitalists who were trained as general primary care physicians practicing in the United States in 2010. When including OB/GYN, pediatric subspecialists, and internal medicine subspecialists, we estimate the total number of actively practicing hospitalists in the United States to be between 27,600 and 29,700.

### Discussion

Our data show that the hospitalist specialty is substantial in size, especially within the general primary care population. In comparison with the 2010 AMA Masterfile numbers of primary care physicians, hospitalists comprise approximately 9 percent of the primary care workforce and about 4 percent of the overall U.S. physician workforce. The AAMC

Survey of Primary Care Physicians may be another tool for understanding the current supply of hospitalists. Our alternative methodology, which included a sample randomized from the AMA, arrived at a similar estimate as those from SHM and AHA. The consistency of these estimates increases confidence in the scope of the hospitalist specialty. Further, our data allow a more detailed profile to be produced than is possible with other data to date, which are more limited in the number of variables they collect on physician characteristics.

Consequently, with data from the AAMC's Survey of Primary Care Physicians, we can see that many younger primary care physicians—particularly those specializing in general internal medicine—are choosing to go into a hospital inpatient setting to practice. If this trend continues, it may contribute to declining growth in the office-based primary care physician. On the other hand, despite potentially lower numbers in the outpatient setting, primary care hospitalists may help boost the efficiency of office-based primary care physicians, since hospitalists could free them from some of the time they have typically spent monitoring inpatient care.<sup>3</sup> Office-

based primary care physicians credit hospitalists with increasing patient and practice satisfaction without any detrimental effects on the financial aspects of outpatient primary care physician practice.<sup>5</sup> Even though successful hospitalist programs have been linked to increased inpatient efficiency<sup>3</sup> and patient satisfaction,<sup>6</sup> growth in the hospitalist system of patient care has accompanied growth in numbers of patients experiencing discontinuity of care between the inpatient and outpatient settings.<sup>7</sup> Continued growth in the number of hospitalists and the divide between inpatient and outpatient care may thus accentuate the need for effective communication among caregivers and easy-to-use, shared health records. These results all serve to highlight the complex changes that can occur when a new specialty of medicine emerges onto the landscape of U.S. medicine.

One limitation of this study is a possible misinterpretation by respondents regarding the classification of a hospitalist, since no definition was provided in the survey. Another limitation is that we restricted our analysis to respondents in six specialties as reported in the AMA Masterfile, so our numbers could underestimate the number of hospitalists and reflect coverage error. Future studies should be done to examine the number of hospitalists among other specialties. Finally, nonresponse bias of subsamples of the survey population could contribute to errors in our estimates for hospitalists. (See Supplemental Table 3.)

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