

Responsibilities and Interests of Pediatricians Practicing Hospital Medicine in the United States

JoAnna K Leyenaar, MD, PhD, MPH¹, Wade Harrison, MD, MPH², Jessica J Truelove, DO³,
Samantha House, DO, MPH¹, Gary L Freed MD, MPH⁴, Laurel K Leslie MD, MPH^{5,6}

¹Department of Pediatrics and The Dartmouth Institute for Health Policy and Clinical Practice, Dartmouth-Hitchcock Medical Center and Geisel School of Medicine at Dartmouth, Lebanon, New Hampshire; ²Department of Pediatrics and Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; ³Pediatrics Residency Program, Dartmouth-Hitchcock Medical Center and Geisel School of Medicine at Dartmouth, Lebanon, New Hampshire; ⁴Susan B. Meister Child Health Evaluation and Research Center, University of Michigan, Ann Arbor, Michigan; ⁵The American Board of Pediatrics, Chapel Hill, North Carolina; ⁶Tufts University School of Medicine, Boston, Massachusetts.

BACKGROUND AND OBJECTIVES: In 2016, the American Board of Medical Specialties (ABMS) approved pediatric hospital medicine (PHM) as the newest pediatric subspecialty. To characterize development of the field, this article aims to: (1) describe the responsibilities and practice settings of US pediatricians self-identifying as hospitalists; and (2) determine how exclusive PHM practice, compared with PHM practice in combination with general or subspecialty care, was associated with professional development interests.

METHODS: Pediatricians enrolling in the 2017-2018 American Board of Pediatrics (ABP) Maintenance of Certification program were offered a voluntary survey about their responsibilities, interests, and practice settings. Logistic regression was employed to characterize associations between exclusive PHM practice and: (1) interest in quality improvement (QI) leadership; (2) intention to take the PHM certifying exam; (3) satisfaction with allocation of professional time; and (4) intention to maintain more than one ABP certification.

RESULTS: The survey response rate was 70.0%; 1662 (13.1%) self-reported PHM practice. Four hundred ninety-one (29.5%) practiced PHM exclusively, 518 (31.1%) practiced PHM and general pediatrics, and 653 (39.3%) practiced PHM and one or more subspecialties. Respondents reporting exclusive PHM practice were significantly more likely to report interest in QI leadership or consultation (adjusted odds ratio [OR], 1.39; 95% CI, 1.09-1.79), PHM exam certification (adjusted OR, 7.10; 95% CI, 5.45-9.25), and maintenance of more than one ABP certification (adjusted OR, 2.64; 95% CI, 1.89-3.68).

CONCLUSIONS: Hospitalists reported diverse clinical and nonclinical responsibilities. Those practicing PHM exclusively expressed high levels of interest in board certification and QI leadership. Ongoing monitoring of PHM responsibilities and practice settings will be important to support the professional development of the PHM workforce. *Journal of Hospital Medicine* 2021;16:XXX-XXX. © 2021 Society of Hospital Medicine

As one of the youngest fields of pediatric practice in the United States, pediatric hospital medicine (PHM) has grown rapidly over the past 2 decades. Approximately 10% of recent graduates from pediatric residency programs in the United States have entered PHM, with two-thirds reporting an intention to remain as hospitalists long term.^{1,2}

In October 2016, the American Board of Medical Specialties (ABMS) approved a petition for PHM to become the newest pediatric subspecialty.³ The application for subspecialty status, led by the Joint Council of Pediatric Hospital Medicine, articulated that subspecialty certification would more clearly

define subspecialty hospitalists' scope of practice, create a "new and larger cadre" of quality improvement (QI) experts, and strengthen opportunities for professional development related to child health safety within healthcare systems.⁴ Approximately 1500 pediatric hospitalists sat for the first PHM board-certification exam in November 2019, illustrating broad interest and commitment to this subspecialty.⁵

Characterizing the current responsibilities, practice settings, and professional interests of pediatric hospitalists is critical to understanding the continued development of the field. However, the most recent national survey of pediatric hospitalists' roles and responsibilities was conducted more than a decade ago, and shared definitions of what constitutes PHM across institutions are lacking.⁶ Furthermore, studies suggest wide variability in PHM workload.⁷⁻⁹ We therefore aimed to describe the characteristics, responsibilities, and practice settings of pediatricians who reported practicing PHM in the United States and determine how exclusive PHM practice, compared with PHM practice in combination with primary or subspecialty care, was

*Corresponding Author: JoAnna K Leyenaar, MD, PhD, MPH;
Email: joanna.k.leyenaar@hitchcock.org; Telephone: 603-653-0855.

Find additional supporting information in the online version of this article.

Received: July 12, 2021; Revised: October 6, 2021; Accepted: October 7, 2021

© 2021 Society of Hospital Medicine DOI 10.12788/jhm.3720

associated with professional responsibilities and interests. We hypothesized that those reporting exclusive PHM practice would be more likely to report interest in QI leadership and intention to take the PHM certifying exam than those practicing PHM in combination with primary or subspecialty care.

METHODS

Participants and Survey

Pediatricians enrolling in the American Board of Pediatrics (ABP) Maintenance of Certification (MOC) program in 2017 and 2018 were asked to complete a voluntary survey about their professional roles and scope of practice (Appendix Methods). The survey, offered to all MOC enrollees, included a hospital medicine module administered to those reporting PHM practice, given the ABP's interest in characterizing PHM roles, responsibilities, practice settings, and interests in QI. Respondents were excluded if they were practicing outside of the United States, if they were unemployed or in a volunteer position, or if they were in fellowship training.

To ascertain areas of clinical practice, respondents were provided with a list of clinical practice areas and asked, "In which of the following areas are you practicing?" Those selecting "hospital medicine" were classified as self-identified hospitalists (hereafter, "hospitalists"). Given variation across institutions in physician roles and responsibilities, we stratified hospitalists into three groups: (1) exclusive PHM practice, representing those who reported PHM as their only area of practice; (2) PHM in combination with general pediatrics, representing those who reported practicing PHM and general pediatrics; and (3) PHM in combination with other subspecialties, representing those who reported practicing PHM in addition to one or more subspecialties. Respondents who reported practicing hospital medicine, general pediatrics, and another subspecialty were classified in the subspecialty group. The ABP's institutional review board of record deemed the survey exempt from human subjects review.

Hospitalist Characteristics and Clinical Roles

To characterize respondents, we examined their age, gender, medical school location (American medical school or international medical school), and survey year (2017 or 2018). We also examined the following practice characteristics: US Census region, part-time versus full-time employment, academic appointment (yes or no), proportion of time spent providing direct and/or consultative patient care and fulfilling nonclinical responsibilities (research, administration, medical education, and QI), hospital setting (children's hospital, community hospital, or mix of these hospital types), and work schedule type (shift schedule, on-service work in blocks, or a combination of shift and block schedules).

To examine variation in clinical roles, we determined the proportion of total direct and/or consultative clinical care that was spent in each of the following areas: (1) inpatient pediatric care, defined as inpatient general or subspecialty care in patients up to 21 years of age; (2) neonatal care, defined as labor and delivery, inpatient normal newborn care, and/or neonatal intensive care; (3) outpatient practice, defined as outpatient

general or subspecialty care in patients up to 21 years of age; (4) emergency department care; and (5) other, which included pediatric intensive care as well inpatient adult care. Recognizing that scope of practice may differ at community hospitals and children's hospitals, we stratified this analysis by practice setting (children's hospital, community hospital).

Dependent Variables

We examined four dependent variables, two that were hypothesis driven and two that were exploratory. To test our hypothesis that respondents practicing PHM exclusively would be more likely to report interest in QI leadership or consultation (given the emphasis on QI in the ABMS application for subspecialty status), we examined the frequency with which respondents endorsed being "somewhat interested" or "very interested" in "serving as a leader or consultant for QI activities." To test our hypothesis that respondents practicing PHM exclusively would be more likely to report plans to take the PHM certifying exam, we noted the frequency with which respondents reported "yes" to the question, "Do you plan to take a certifying exam in hospitalist medicine when it becomes available?" As an exploratory outcome, we examined satisfaction with allocation of professional time, available on the 2017 survey only; satisfaction was defined as an affirmative response to the question, "Is the allocation of your total professional time approximately what you wanted in your current position?" Finally, intention to maintain more than one ABP certification, also reported only in 2017 and examined as an exploratory outcome, was defined as a reported intention to maintain more than one ABP certification, including general pediatrics, PHM, or any other subspecialty.

Statistical Analysis

We used chi-square tests and analysis of variance as appropriate to examine differences in sociodemographic and professional characteristics among respondents who reported exclusive PHM practice, PHM in combination with general pediatrics, and PHM in combination with another subspecialty. To examine differences across the three PHM groups in their allocation of time to various clinical responsibilities (eg, inpatient care, newborn care), we used Kruskal-Wallis equality-of-population rank tests, stratifying by hospital type. We used multivariable logistic regression to identify associations between exclusive PHM practice and our four dependent variables, adjusting for the sociodemographic and professional characteristics described above. All analyses were conducted using Stata 15 (StataCorp LLC), using two-sided tests, and defining $P < .05$ as statistically significant.

RESULTS

Study Sample

Of the 19,763 pediatricians enrolling in MOC in 2017 and 2018, 13,839 responded the survey, representing a response rate of 70.0%. There were no significant differences between survey respondents and nonrespondents with respect to gender; differences between respondents and nonrespondents in age, medical school location, and initial year of ABP certification

year were small (mean age, 48.1 years and 47.1 years, respectively [$P < .01$]; 77.0% of respondents were graduates of US medical schools compared with 73.7% of nonrespondents [$P < .01$]; mean certification year for respondents was 2003 compared with 2004 for nonrespondents [$P < .01$]). After applying the described exclusion criteria, 1662 of 12,665 respondents self-identified as hospitalists, reflecting 13.1% of the sample and the focus of this analysis (Appendix Figure).

Participant Characteristics and Areas of Practice

Of 1662 self-identified hospitalists, 881 (53.0%) also reported practicing general pediatrics, and 653 (39.3%) also reported practicing at least one subspecialty in addition to PHM. The most frequently reported additional subspecialty practice areas included: (1) neonatology ($n = 155$, 9.3%); (2) adolescent medicine ($n = 138$, 8.3%); (3) pediatric critical care ($n = 89$, 5.4%); (4) pediatric emergency medicine ($n = 80$, 4.8%); and (5) medicine-pediatrics ($n = 30$, 4.7%, asked only on the 2018 survey). When stratified into mutually exclusive groups, 491 respondents (29.5%) identified as practicing PHM exclusively, 518 (31.2%) identified as practicing PHM in combination with general pediatrics, and 653 (39.3%) identified as practicing PHM in combination with one or more other subspecialties.

Table 1 summarizes the characteristics of respondents in these three groups. Respondents reporting exclusive PHM practice were, on average, younger, more likely to be female, and more likely to be graduates of US medical schools than those reporting PHM in combination with general or subspecialty pediatrics. In total, approximately two-thirds of the sample ($n = 1068$, 64.3%) reported holding an academic appointment, including 72.9% ($n = 358$) of those reporting exclusive PHM practice compared with 56.9% ($n = 295$) of those also reporting general pediatrics and 63.6% ($n = 415$) of those also reporting subspecialty care ($P < .001$). Respondents who reported practicing PHM exclusively most frequently worked at children's hospitals (64.6%, $n = 317$), compared with 40.0% ($n = 207$) and 42.1% ($n = 275$) of those practicing PHM in combination with general and subspecialty pediatrics, respectively ($P < .001$).

Clinical and Nonclinical Roles and Responsibilities

The majority of respondents reported that they spent >75% of their professional time in direct clinical or consultative care, including 62.1% ($n = 305$) of those reporting PHM exclusively and 77.8% ($n = 403$) and 66.6% ($n = 435$) of those reporting PHM with general and subspecialty pediatrics, respectively ($P < .001$). Overall, <10% reported spending less than 50% of their time providing direct patient care, including 11.2% ($n = 55$) of those reporting exclusive PHM practice, 11.2% ($n = 73$) reporting PHM in combination with a subspecialty, and 6% ($n = 31$) in combination with general pediatrics. The mean proportion of time spent in nonclinical roles was 22.4% (SD, 20.4%), and the mean proportions of time spent in any one area (administration, research, education, or QI) were all <10%.

The proportion of time allocated to inpatient pediatric care, neonatal care, emergency care, and outpatient pediatric care varied substantially across PHM practice groups and settings.

Among respondents who practiced at children's hospitals, the median percentage of clinical time dedicated to inpatient pediatric care was 66.5% (interquartile range [IQR], 15%-100%), with neonatal care being the second most common clinical practice area (Figure 1A, Appendix Table). At community hospitals, the percentage of clinical time dedicated to inpatient pediatric care was lower, with a median of 10% (IQR, 3%-40%) (Figure 1B). Among those reporting exclusive PHM practice, the median proportion of clinical time spent delivering inpatient pediatric care was 100% (IQR, 80%-100%) at children's hospitals and 40% (IQR, 20%-85%) at community hospitals. At community hospitals, neonatal care accounted for a similar proportion of clinical time as inpatient pediatric care for these respondents (median, 40% [IQR, 0%-70%]). With the exception of emergency room care, we observed significant differences in how clinical time was allocated by respondents reporting exclusive PHM practice compared with those reporting PHM in combination with general or specialty care (all P values < .001, Appendix Table).

Professional Development Interests

Approximately two-thirds of respondents reported interest in QI leadership or consultation (Table 2), with those reporting exclusive PHM practice significantly more likely to report this (70.3% [$n = 345$] compared with 57.7% [$n = 297$] of those practicing PHM with general pediatrics and 66.3% [$n = 431$] of those practicing PHM with another subspecialty, $P < .001$). Similarly, 69% ($n = 339$) of respondents who reported exclusive PHM practice described an intention to take the PHM certifying examination, compared with 20.4% ($n = 105$) of those practicing PHM and general pediatrics and 17.7% ($n = 115$) of those practicing PHM and subspecialty pediatrics ($P < .001$). A total of 82.5% ($n = 846$) of respondents reported that they were satisfied with the allocation of their professional time; there were no significant differences between those reporting exclusive PHM practice and those reporting PHM in combination with general or subspecialty pediatrics. Of hospitalists reporting exclusive PHM practice, 67.8% ($n = 166$) reported an intention to maintain more than one ABP certification, compared with 22.1% ($n = 78$) of those practicing PHM and general pediatrics and 53.9% ($n = 230$) of those practicing PHM and subspecialty pediatrics ($P < .001$).

In multivariate regression analyses, hospitalists reporting exclusive PHM practice had significantly greater odds of reported interest in QI leadership or consultation (adjusted odds ratio [OR], 1.39; 95% CI, 1.09-1.79), intention to take the PHM certifying exam (adjusted OR, 7.10; 95% CI, 5.45-9.25), and intention to maintain more than one ABP certification (adjusted OR, 2.64; 95% CI, 1.89-3.68) than those practicing PHM in combination with general or subspecialty pediatrics (Table 3). There was no significant difference across the three groups in the satisfaction with the allocation of professional time.

DISCUSSION

In this national survey of pediatricians seeking MOC from the ABP, 13.1% reported that they practiced hospital medicine, with approximately one-third of these individuals reporting

TABLE 1. Demographic and Practice Characteristics of survey Respondents Comparing Those Who Report Practicing PHM Exclusively With Those Who Report Practicing PHM in Combination With General Pediatrics and Subspecialty Care

Respondent Characteristics	Full hospitalist sample (N = 1662)		Exclusive PHM practice (n = 491)		PHM, general pediatrics (n = 518)		PHM, subspecialty care (n = 653)		P value
Age, mean (SD), y	46.2 (8.4)		43.9 (7.9)		46.1 (8.1)		48.0 (8.7)		<.001
Sex, female	1015	(61.1)	342	(69.7)	317	(61.2)	355	(54.4)	<.001
Medical school location	.004								
American medical school	1346	(81.0)	413	(84.1)	430	(83.0)	503	(77.0)	
International medical school	316	(19.0)	78	(15.9)	88	(17.0)	150	(23.0)	
US census region of practice	.04								
Midwest	385	(23.2)	123	(25.1)	133	(25.7)	129	(19.8)	
Northeast	300	(18.1)	97	(19.8)	84	(16.2)	119	(18.2)	
South	507	(30.5)	144	(29.3)	150	(29.0)	213	(32.6)	
West	441	(26.5)	125	(25.5)	139	(26.8)	177	(27.1)	
Work hours, full-time	1451	(87.3)	429	(87.4)	438	(84.6)	584	(89.4)	.04
Academic appointment, yes	1068	(64.3)	358	(72.9)	295	(56.9)	415	(63.6)	<.001
Hospital type ^a	<.001								
Children's hospital only	799	(48.1)	317	(64.6)	207	(40.0)	275	(42.1)	
Community hospital only	676	(40.7)	121	(24.6)	272	(52.5)	283	(43.3)	
Children's and community hospitals	180	(10.8)	53	(10.8)	36	(6.9)	91	(13.9)	
Hospital medicine schedule ^b	<.001								
Shift	495	(29.8)	193	(39.3)	130	(25.1)	172	(26.3)	
Block	481	(28.9)	136	(27.7)	164	(31.7)	181	(27.7)	
Combination of shift and block/other	680	(40.9)	162	(33.0)	221	(42.7)	297	(45.5)	
Professional time in direct clinical/consultative care, %	<.001								
<25	58	(3.5)	18	(3.7)	14	(2.7)	26	(4.0)	
≥25-49	101	(6.1)	37	(7.5)	17	(3.3)	47	(7.2)	
≥50-74	360	(21.7)	131	(26.7)	84	(16.2)	145	(22.2)	
≥75	1143	(68.8)	305	(62.1)	403	(77.8)	435	(66.6)	
Clinical responsibilities (yes)-									
Inpatient general pediatric care	1365	(82.1)	461	(93.9)	433	(83.6)	471	(72.1)	<.001
Inpatient subspecialty pediatric care	252	(15.2)	58	(11.8%)	21	(4.1)	173	(26.5)	<.001
Neonatal care	979	(58.9)	209	(42.6)	385	(74.3)	385	(59.0)	<.001
Pediatric intensive care	199	(12.0)	36	(7.3)	23	(4.4)	140	(21.4)	<.001
Emergency department care	277	(16.7)	65	(13.2)	73	(14.1)	139	(21.3)	<.001
Nonclinical responsibilities, mean (SD) total professional time, %									
Administration	9.7	(14.0)	10.8	(15.4)	8.1	(12.6)	10.0	(13.9)	<.01
Research	2.3	(7.7)	3.0	(9.5)	1.0	(4.2)	2.8	(8.2)	<.001
Medical education	6.9	(8.8)	7.8	(9.5)	6.3	(8.3)	6.8	(8.6)	.01
Quality improvement activities	3.5	(5.1)	3.9	(6.2)	2.8	(3.7)	3.7	(5.0)	<.001
Total ^d	22.4	(20.4)	25.6	(21.4)	18.2	(17.8)	23.3	(20.9)	<.001
Survey year	<.001								
2017	1025	(61.7)	245	(49.9)	353	(68.1)	427	(65.4)	
2018	638	(38.4)	246	(50.1)	165	(31.9)	226	(34.6)	

Results are represented as No. (%) unless otherwise noted.

^aMissing for 7 respondents.^bMissing for 6 respondents.^cMissing for 11 respondents.^dTotal nonclinical time includes total professional time dedicated to administration, research, medical education, and quality improvement activities.

Abbreviation: PHM, pediatric hospital medicine.

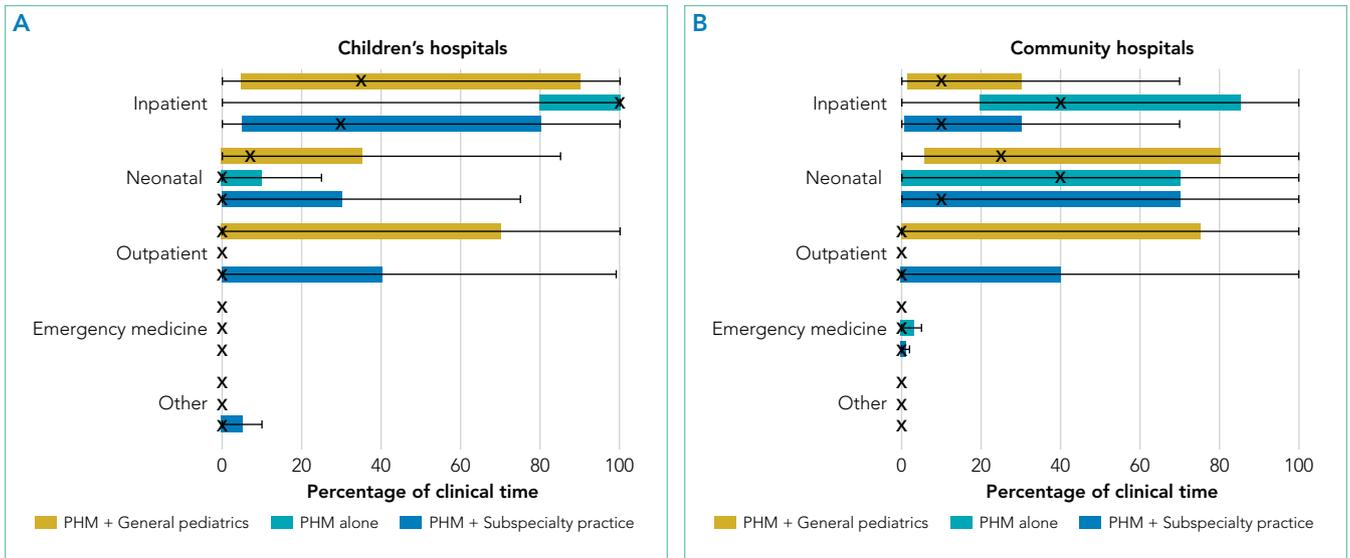


FIG. Box Plots. The plots demonstrate allocation of direct clinical and consultative time reported by pediatricians practicing PHM exclusively or in combination with general pediatrics or subspecialty care at (A) children’s hospitals and (B) community hospitals. X’s indicate the median value. *Inpatient* includes clinical time spent providing general or specialty pediatric care; *neonatal* includes clinical time spent providing normal newborn care, labor and delivery care, and neonatal intensive care; *outpatient* indicates clinical time spent at children’s hospitals or community hospitals providing pediatric general or specialty outpatient care; *emergency medicine* includes clinical time providing emergency department care; *other* includes clinical time spent providing pediatric intensive care, care of adults, and other clinical activities not previously specified.

Abbreviation: PHM, pediatric hospital medicine.

TABLE 2. Professional Development Interests, Comparing Those Who Report Practicing PHM Exclusively With Those Who Report Practicing PHM in Combination With Primary and Subspecialty Care

	Full sample (n = 1656)	Exclusive PHM practice (n = 491)	PHM, general pediatrics (n = 515)	PHM, subspecialty pediatrics (n = 650)	P value
Interest in quality improvement leadership or consultation	1073 (64.8)	345 (70.3)	297 (57.7)	431 (66.3)	<.001
Intention to take PHM certifying exam	559 (33.8)	339 (69.0)	105 (20.4)	115 (17.7)	<.001
	n = 1025	n = 245	n = 353	n = 427	
Satisfied with allocation of professional time ^a	846 (82.5)	205 (83.7)	293 (83.0)	348 (81.5)	.75
Intention to maintain more than one ABP certification ^a	474 (46.2)	166 (67.8)	78 (22.1)	230 (53.9)	<.001

Results are represented as No. (%).

^aAvailable only for 2017 Maintenance of Certification participants.

Abbreviation: ABP, American Board of Pediatrics; PHM, pediatric hospital medicine.

that they practiced PHM exclusively. The distribution of clinical and nonclinical responsibilities differed across those reporting exclusive PHM practice relative to those practicing PHM in combination with general or subspecialty pediatrics. Relative to hospitalists who reported practicing PHM in addition to general or subspecialty care, those reporting exclusive PHM practice were significantly more likely to report an interest in QI leadership or consultation, intention to sit for the PHM board-certification exam, and intention to maintain more than one ABP certification.

These findings offer insight into the evolution of PHM and have important implications for workforce planning. The last nationally representative analysis of the PHM workforce was

conducted in 2006, at which time 73% of hospitalists reported working at children’s hospitals.⁶ In the current analysis, less than 50% of hospitalists reported practicing PHM at children’s hospitals only; 10% reported working at both children’s hospitals and community hospitals and 40% at community hospitals alone. This diffusion of PHM from children’s hospitals into community hospitals represents an important development in the field and aligns with the epidemiology of pediatric hospitalization.¹⁰ Pediatric hospitalists who practice at community hospitals experience unique challenges, including a relative paucity of pediatric-specific clinical resources, limited mentorship opportunities and resources for scholarly work, and limited access to data from which to prioritize QI interventions.^{11,12} Our

TABLE 3. Professional Development Interests Among Hospitalists Reporting Exclusive PHM Practice Compared With Those Reporting PHM Practice in Combination With Primary or Other Subspecialty Care

	Unadjusted logistic regression OR (95% CI)	Adjusted logistic regression ^a OR (95% CI)
Interest in quality improvement leadership or consultation	1.42 (1.13-1.78) ^b	1.39 (1.09-1.79) ^b
Intention to take PHM certifying exam	9.58 (7.53-12.19) ^b	7.10 (5.45-9.25) ^b
Satisfied with allocation of professional time ^c	1.11 (0.76-1.63)	1.11 (0.74-1.68)
Intention to maintain more than one ABP certification ^c	3.22 (2.37-4.36) ^b	2.64 (1.89-3.68) ^b

^aAdjusting for age, sex, medical school location (American or international medical graduate), US Census region, full-time vs part-time position, academic appointment (yes/no), hospital type, schedule type, and survey year; all variables selected a priori.

^bP < .05.

^cAvailable only from 2017 survey data.

Abbreviations: ABP, American Board of Pediatrics; OR, odds ratio; PHM, pediatric hospital medicine.

findings also illustrate that the scope of practice for hospitalists differs at community hospitals relative to children's hospitals. Although the PHM fellowship curriculum requires training at a community hospital, the requirement is limited to one 4-week block, which may not provide sufficient preparation for the unique clinical responsibilities in this setting.^{13,14}

Relative to past analyses of PHM workforce roles and responsibilities, a substantially greater proportion of respondents in the current study reported clinical responsibility for neonatal care, including more than 40% of those self-reporting practicing PHM exclusively and almost three-quarters of those self-reporting PHM in conjunction with general pediatrics.^{6,15} Given that more than half of the six million US pediatric hospitalizations that occur each year represent birth hospitalizations,¹⁶ pediatric hospitalists' responsibilities for newborn care are consistent with these patterns of hospital-based care. Expanding hospitalists' responsibilities to provide newborn care has also been shown to improve the financial performance of PHM programs with relatively low pediatric volumes, which may further explain this finding, particularly at community hospitals.^{17,18} Interestingly, although emergency department care has also been demonstrated as a model to improve the financial stability of PHM programs, relatively few hospitalists reported this as an area of clinical responsibility.^{19,20} This finding contrasts with past analyses and may reflect how the scope of PHM clinical responsibilities has changed since these prior studies were conducted.^{6,15}

Because PHM had not been recognized as a subspecialty prior to 2016, a national count of pediatric hospitalists is lacking. In this study, approximately one in eight pediatricians reported that they practiced PHM, but less than 4% of the survey sample reported practicing PHM exclusively. Based on these results, we estimate that of the 76,214 to 89,608 ABP-certified pediatricians currently practicing in the United States, between 9984 and 11,738 would self-identify as practicing PHM, with between 2945 and 3462 reporting exclusive PHM practice.

Hospitalists who reported practicing PHM exclusively were significantly more likely to report an interest in QI leadership or consultation and plans to take the PHM certifying exam. These

findings are consistent with PHM's focus on QI, as articulated in the application to the ABMS for subspecialty status as well as the PHM Core Competencies and fellowship curriculum.^{4,13,21,22} Despite past research questioning the sustainability of some community- and university-based PHM programs and wide variability in workload,⁷⁻⁹ more than 80% of hospitalists reported satisfaction with the allocation of their professional time, with no significant differences between respondents practicing PHM exclusively or in combination with general or subspecialty care.

This analysis should be interpreted in light of its strengths and limitations. Strengths of this work include its national focus, large sample size, and comprehensive characterization of respondents' professional roles and characteristics. Study limitations include the fact that respondents were classified as hospitalists based on self-report; we were unable to ascertain if they were classified as hospitalists at their place of employment or if they met the ABP's eligibility criteria to sit for the PHM subspecialty certifying exam.¹⁹ Additionally, respondents self-reported their allocations of clinical and nonclinical time, and we are unable to correlate this with actual work hours. Respondents' reported interest in QI leadership or consultation may not be correlated with QI effort in practice; the mean time reportedly dedicated to QI activities was quite low. Additionally, two of our outcomes were available only for respondents who enrolled in MOC in 2017, and the proportion practicing medicine-pediatrics was available only in 2018. Although this analysis represents approximately 40% of all pediatricians enrolling in MOC (2 years of the 5-year MOC cycle), it may not be representative of pediatricians who are not certified by the ABP. Finally, our outcomes related to board certification examined interest and intentions; future study will be needed to determine how many pediatricians take the PHM exam and maintain certification.

In conclusion, the field of PHM has evolved considerably since its inception, with pediatric hospitalists reporting diverse clinical and nonclinical responsibilities. Hospitalists practicing PHM exclusively were more likely to report an interest in QI leadership and intent to sit for the PHM certifying exam than

those practicing PHM in combination with general pediatrics or another specialty. Continuing to monitor the evolution of PHM roles and responsibilities over time and across settings will be important to support the professional development needs of the PHM workforce.

Disclosures: Dr Leslie is an employee of the American Board of Pediatrics (ABP), and Dr Leyenaar is a contracted health services researcher with the ABP Foundation. Dr Harrison is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) as part of a National Research Service Award (NRSA, T32HP14001) totaling \$2,000,000.

Funding: This study was supported in part by the American Board of Pediatrics (ABP) Foundation. Aside from Dr Leslie's and Dr Leyenaar's time, the funder/sponsor did not participate in the conduct of the work. The contents are those of the author(s) and do not represent the official views and policies of, nor an endorsement, by the ABP, ABP Foundation, HRSA, HHS, or the US government.

References

- House S, Frintner MP, Leyenaar JK. Factors influencing career longevity in pediatric hospital medicine. *Hosp Pediatr*. 2019;9(12):983-988. <https://doi.org/10.1542/hpeds.2019-0151>
- Leyenaar JK, Frintner MP. Graduating pediatric residents entering the hospital medicine workforce, 2006-2015. *Acad Pediatr*. 2018;18(2):200-207. <https://doi.org/10.1016/j.acap.2017.05.001>
- The American Board of Pediatrics. ABMS approves pediatric hospital medicine certification. November 8, 2016. Accessed October 12, 2021. <https://www.abp.org/news/abms-approves-pediatric-hospital-medicine-certification>
- American Board of Medical Specialties. Application for a new subspecialty certificate: pediatric hospital medicine.
- American Board of Pediatrics. 2019 Annual Report. Accessed October 12, 2021. <https://www.abp.org/sites/abp/files/pdf/annual-report-2019.pdf>
- Freed GL, Dunham KM, Research Advisory Committee of the American Board of Pediatrics. Pediatric hospitalists: training, current practice, and career goals. *J Hosp Med*. 2009;4(3):179-186. <https://doi.org/10.1002/jhm.458>
- Alvarez F, McDaniel CE, Birnie K, et al. Community pediatric hospitalist workload: results from a national survey. *J Hosp Med*. 2019;14(11):682-685. <https://doi.org/10.12788/jhm.3263>
- Fromme HB, Chen CO, Fine BR, Gosdin C, Shaughnessy EE. Pediatric hospitalist workload and sustainability in university-based programs: results from a national interview-based survey. *J Hosp Med*. 2018;13(10):702-705. <https://doi.org/10.12788/jhm.2977>
- Gosdin C, Simmons J, Yau C, Sucharew H, Carlson D, Paciorkowski N. Survey of academic pediatric hospitalist programs in the US: organizational, administrative, and financial factors. *J Hosp Med*. 2013;8(6):285-291. <https://doi.org/10.1002/jhm.2020>
- Leyenaar JK, Ralston SL, Shieh MS, Pekow PS, Mangione-Smith R, Lindnauer PK. Epidemiology of pediatric hospitalizations at general hospitals and freestanding children's hospitals in the United States. *J Hosp Med*. 2016;11(11):743-749. <https://doi.org/10.1002/jhm.2624>
- Leary JC, Walsh KE, Morin RA, Schainker EG, Leyenaar JK. Quality and safety of pediatric inpatient care in community hospitals: a scoping review. *J Hosp Med*. 2019;14:694-703. <https://doi.org/10.12788/jhm.3268>
- Leyenaar JK, Capra LA, O'Brien ER, Leslie LK, Mackie TI. Determinants of career satisfaction among pediatric hospitalists: a qualitative exploration. *Acad Pediatr*. 2014;14(4):361-368. <https://doi.org/10.1016/j.acap.2014.03.015>
- Jerardi KE, Fisher E, Rassbach C, et al. Development of a curricular framework for pediatric hospital medicine fellowships. *Pediatrics*. 2017;140(1):e20170698. <https://doi.org/10.1542/peds.2017-0698>
- ACGME Program Requirements for Graduate Medical Education in Pediatric Hospital Medicine. July 1, 2021. Accessed October 4, 2021. https://www.acgme.org/globalassets/PFAssets/ProgramRequirements/334_PediatricHospitalMedicine_2020.pdf?ver=2020-06-29-163350-910&ver=2020-06-29-163350-910
- Freed GL, Brzozowski K, Neighbors K, Lakhani I, American Board of Pediatrics, Research Advisory Committee. Characteristics of the pediatric hospitalist workforce: its roles and work environment. *Pediatrics*. 2007;120(1):33-39. <https://doi.org/10.1542/peds.2007-0304>
- Moore B, Freeman W, Jiang H. Costs of Pediatric Hospital Stays, 2016. Healthcare Cost and Utilization Project Statistical Brief #250. Accessed October 25, 2021. <https://www.ncbi.nlm.nih.gov/books/NBK547762/>
- Carlson DW, Fentzke KM, Dawson JG. Pediatric hospitalists: fill varied roles in the care of newborns. *Pediatr Ann*. 2003;32(12):802-810. <https://doi.org/10.3928/0090-4481-20031201-09>
- Tieder JS, Migita DS, Cowan CA, Melzer SM. Newborn care by pediatric hospitalists in a community hospital: effect on physician productivity and financial performance. *Arch Pediatr Adolesc Med*. 2008;162(1):74-78. <https://doi.org/10.1001/archpediatrics.2007.15>
- Krugman SD, Suggs A, Photowala HY, Beck A. Redefining the community pediatric hospitalist: the combined pediatric ED/inpatient unit. *Pediatr Emerg Care*. 2007;23(1):33-37. <https://doi.org/10.1097/01.pec.0000248685.94647.01>
- Dudas RA, Monroe D, McColligan Borger M. Community pediatric hospitalists providing care in the emergency department: an analysis of physician productivity and financial performance. *Pediatr Emerg Care*. 2011;27(11):1099-1103. <https://doi.org/10.1097/PEC.0b013e31823606f5>
- Stucky ER, Ottolini MC, Maniscalco J. Pediatric hospital medicine core competencies: development and methodology. *J Hosp Med*. 2010;5(6):339-343. <https://doi.org/10.1002/jhm.843>
- Maniscalco J, Gage S, Teferi S, Fisher ES. The Pediatric Hospital Medicine Core Competencies: 2020 revision. *J Hosp Med*. 2020;15(7):389-394. <https://doi.org/10.12788/jhm.3391>