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Hospitalist Involvement in Family Medicine Residency Training:

A CERA Study

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BACKGROUND AND OBJECTIVES: Little is known about the impact of hospitalists on family medicine residencies. We surveyed family medicine residency directors to assess attitudes about hospitalists and their involvement in residency teaching.

METHODS: Questions were included in the 2012 Council of Academic Family Medicine Educational Research Alliance (CERA) survey of family medicine residency directors. Univariate statistics were used to describe programs, directors, and our questions on the use of hospitalists. Bivariate statistics were used to examine relationships between the use of hospitalists to teach and program characteristics.

RESULTS: Forty-one percent (n=175) of residency directors completed the hospitalist section of the CERA survey. Sixty-six percent of residency programs were community based/university affiliated. The majority of directors who have, or are planning to develop, a hospitalist service currently use an internal medicine service (92.5%), followed by family medicine (39.1%), pediatrics (35.4%), OB/laborists (18.0%), and combined services (8.7%). The majority of programs with a hospitalist training track (or plans to develop one) indicated that this was for a family medicine service. Sixty percent of programs that have a hospitalist service involve hospitalists in teaching. Twenty percent of directors reported that hospitalists serve as family medicine faculty, and 63% viewed them as “good educators.” However, 85% reported no reduction in inpatient teaching by family medicine faculty despite using hospitalist teaching services.

CONCLUSIONS: Hospitalists have a significant educational role in family medicine resident training. Further research is needed to explore how hospitalists and family medicine faculty can collaborate to promote enhanced efficiency and effectiveness as residency teachers

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residencies rely on hospital training, and Accreditation Council for Graduate Medical Education (ACGME) Program Requirements call for 6 months of inpatient training, which should occur on a family medicine or internal medicine service and must involve teaching and role-modeling by family physician faculty.³

The increase in hospitalists has raised a number of questions as to how this specialty is impacting family medicine residency training. A review of the literature revealed previous studies evaluating the impact of hospitalist services on internal medicine and pediatric residency programs; however, there are no published results related to hospitalist impact on family medicine residencies. Studies of internal medicine program directors revealed that the majority of those programs had enlisted hospitalists in some aspect of their teaching as early as 1999, with a small number of residencies developing hospitalist training tracks by 2007.^{4,5} In 2008, pediatric residencies reported that 77% of their training programs used hospitalists as teaching attendings, with 65% reporting

Inpatient care is provided by a variety of specialists; however, we have seen the rise of the hospitalist over the last decade, with dedicated providers caring for patients admitted by primary care clinicians.¹

Hospitalist programs can be either mandatory or voluntary, but regardless of the structure, there is a growing trend for primary care physicians to utilize hospitalists to provide inpatient care.² Family medicine

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that hospitalists were responsible for all general pediatric services.⁶

To understand the impact of the hospitalist movement on family medicine residency training programs, we developed a series of questions that were included in the 2012 Council of Academic Family Medicine (CAFME) Educational Research Alliance (CERA) survey of family medicine residency directors.^{7,8} Our specific objective was to understand the influence of hospitalists on family medicine inpatient training. We aimed to understand the global impact of hospitalist programs on residency training, the nature of these programs (eg, whether they are family medicine based or internal medicine based), the extent to which hospitalists are involved in teaching, and how residency programs view any such changes in inpatient teaching models. Now that the hospitalist movement has become widespread, we also wanted to understand whether there were residency program characteristics (eg, geographic differences) that differentiated programs with more or less hospitalist involvement.

Methods

An invitation to complete the CERA survey was distributed electronically to 431 family medicine residency program directors nationwide with a link to the survey to be completed via Survey Monkey. Two follow-up email notices (with survey links) were distributed to nonrespondents at 2-week intervals from the original survey (distributed in March 2012). The survey instrument included basic demographics of residency programs such as structure, size, and geographic location, plus our hospitalist content-specific questions modified from two previously published surveys of internal medicine residency programs that gathered information about the nature of existing hospitalist services and their involvement in residency teaching.⁴ We also assessed the barriers and positive and negative impacts of hospitalist services related to teaching programs. The survey was

Table 1: Demographics of Respondent Programs*, **

	n (%)
Program type	
University	30 (17.1)
Community/university affiliated	116 (66.3)
Community/non-university affiliated	20 (11.4)
Military	6 (3.4)
Other	3 (1.7)
Program location	
North/Northeast	37 (21.5)
South	32 (18.6)
Midwest	65 (37.8)
West	38 (22.1)
Size of community where program is located	
<75,000	48 (27.6)
75,000–150,000	43 (24.7)
150,000–500,000	33 (19.0)
>500,000	50 (28.7)
Year program began	
Oldest	1966
Newest	2010
Number of PGY-1 interns	
Mean (SD)	7.88 (2.65)
Median	8.00
Range	1–16
Number of PGY-2 residents	
Mean (SD)	7.84 (2.67)
Median	7.50
Range	1–16
Number of PGY-3 residents	
Mean (SD)	7.74 (2.64)
Median	7.00
Range	1–16
Proportion of current residents who are international medical graduates (IMGs)	
0%–24%	90 (52.3)
25%–49%	22 (12.8)
50%–74%	29 (16.9)
75%–100%	31 (18.0)
Gender of program director	
Male	123 (70.7)
Female	51 (29.3)
Years as program director	
Mean (SD)	7.63 (6.07)
Median	6.00
Range	1–32

* n=175

** Frequencies may not total to number of respondents eligible to answer questions due to sporadic missing data

piloted with three family medicine residency directors and the director of our local family medicine hospitalist service (an internist). Their feedback was incorporated into the final survey. These questions were then incorporated into the 2012 CERA survey, an ombudsman survey that included multiple content areas.

Data were analyzed using PASW/SPSS V19 (IBM Corporation, Somers, NY). Univariate statistics were used to describe the nature of the residency programs, the residency directors, and our specific questions on the use of hospitalists in family medicine residency training. Bivariate statistics were used to examine relationships between the use of hospitalists to teach family medicine residents and program characteristics. Depending on the categorical or continuous nature of the survey questions, chi-square tests and Student's *t* tests were used to evaluate these bivariate relationships, using a $P \leq .05$ to denote statistical significance.

The University of Massachusetts Institutional Review Board reviewed our study and found it to be exempt from formal review due to the anonymity of survey respondents and the minimal risk to subjects in completing the survey.

Results

Demographics

Of the 431 surveys distributed, two were returned due to invalid or rejected email addresses. Of those

invitations received, 212 residency directors responded (37 partial responses and 175 complete responses; the 175 completed responses representing a 40.8% response rate: 175/429). Table 1 shows the frequencies and proportions of the responding residency programs and their directors. The majority of programs (66.3%) were community based/university affiliated. This compares with American Academy of Family Physicians data, noting that 59% of programs have this structure. All regions of the country were represented, as were community sizes ranging from <30,000 to >1 million people. Program histories ranged from older programs that began in 1966 to new programs that commenced in 2010.

Hospitalist Programs

The majority of program directors (89.1%) noted that their primary teaching hospital employs hospitalists. Of the 19 directors reporting that their hospital does not currently employ hospitalists, three quarters of these (73.7%) also indicated that their hospital has no plans to develop a hospitalist service. Reasons for this predominantly included lack of hospital interest (100%), lack of financial support for a hospitalist model (92.9%), and opposition by the hospital's medical staff to losing revenues generated by their inpatient practices (78.6%) as well as losing their inpatient practice (57.1%).

Of those responding family medicine residency directors who have, or are planning on, developing a hospitalist service the majority have an internal medicine service (92.5%), followed by family medicine (39.1%), pediatrics (35.4%), OB/laborists (18.0%), and combined services (8.7%) (Table 2). However, only 60.0% of programs that have a hospitalist service involve hospitalists in teaching residents. Residency directors who have a hospitalist training track, focus area, or concentration (or plan on developing one in the future) noted that a family medicine service is the one most likely to be used (59.6%), followed by internal medicine (42.3%), combined services (9.6%), pediatrics (7.7%), and OB/laborists (5.8%).

Teaching Activities

More than two thirds of respondents (72.7%) who have a hospitalist service noted that such a service does not make it difficult to involve family physicians in teaching and role-modeling. A variety of teaching activities are provided to family medicine residents by hospitalists (Table 3). Primary activities include serving as attendings on resident services (60.6%), performing direct observation of residents' inpatient clinical skills (56.4%), conducting teaching rounds (47.9%), and providing lectures (45.7%). All other teaching activities were reported to occur by less than 30% of residency directors.

Of those respondents who reported that hospitalists are involved in teaching, most (59.0%) noted that 1–2 months of family medicine inpatient training is done exclusively by hospitalists, followed by 27.9% providing 3–4 months of exclusive training. Hospitalists were viewed as “good educators” by nearly two thirds (62.8%) of the residency program directors responding. Nearly all noted that using hospitalists resulted in either no change in the quality of inpatient training for residents (55.6%) and medical students (74.4%), or it improved the quality of training for these learners (residents: 40.0%, medical students: 22.1%).

Table 2: Specialty Type of Hospitalist Programs

	Currently Have a Hospitalist Service (or Plan to Develop One) n=161* n (%)	Currently Have a Hospitalist Training Track (or Plan to Develop One) n=55* n (%)
Family medicine service	63 (39.1)	31 (59.6)
Internal medicine service	149 (92.5)	22 (42.3)
Pediatric service	57 (35.4)	4 (7.7)
OB/laborist service	29 (18.0)	3 (5.8)
Combined services	14 (8.7)	5 (9.6)

* Respondents were able to select from more than one category.

Table 3: Hospitalist involvement in Resident Teaching*, **

	n (%)
Teaching activities	
Hospitalists serve as attending on resident services	
Yes	57 (60.6)
No	37 (39.4)
Hospitalists serve as family physician faculty	
Yes	19 (20.2)
No	75 (79.8)
Hospitalists conduct teaching rounds	
Yes	45 (47.9)
No	49 (52.1)
Hospitalists perform direct observation of inpatient clinical skills	
Yes	53 (56.4)
No	41 (43.6)
Hospitalists provide lectures	
Yes	43 (45.7)
No	51 (54.3)
Hospitalists attend morning report focused on sign-out/transitions of care	
Yes	17 (18.1)
No	77 (81.9)
Hospitalists attend morning report, which has a teaching component on admitted patients	
Yes	29 (30.9)
No	65 (69.1)
Quality/impact of hospitalists	
Hospitalists at my institution are viewed as good educators	
Yes	59 (62.8)
No	35 (37.2)
Hospitalists are more accessible to residents than other inpatient teaching faculty	
Yes	24 (25.5)
No	70 (74.5)
Resident inpatient supervision has improved with the addition of hospitalists	
Yes	28 (29.8)
No	66 (70.2)
Use of hospitalists has reduced the inpatient teaching responsibilities of family medicine health center faculty	
Yes	14 (15.1)
No	79 (84.9)

* n=94

** Frequencies may not total to number of respondents eligible to answer questions due to sporadic missing data.

Teaching Barriers

Residency program directors noted a number of reasons why hospitalists are not involved in teaching (Table 4). The most common reasons included: hospitalists not supported to teach (68.9%), hospitalists interested and capable but too busy to teach (49.2%), and hospitalists

capable/qualified to teach but need faculty development (47.5%). Not being interested in any teaching, not being interested in teaching family medicine residents, and not qualified/capable of teaching were not prevalent reasons for hospitalists to not be involved in teaching. Among these top three reasons for

a lack of involvement in residency teaching by hospitalists, there were few differences in program characteristics as viewed by regions of the country, size of the community, and program type (data not shown). The only significant finding was that programs in the South were three times more likely to note that hospitalists were too busy to teach (35.2% versus 13.4% reporting “not involved”), while programs in the Midwest were nearly 50% less likely to say their hospitalists were too busy to teach (31.5% versus 46.3% reporting “no” to this barrier; $X^2=8.167$, $P=.043$). This may relate to the Society of Hospital Medicine data, which have revealed variability in the number of encounters/shifts seen in different regions of the country.⁹

Training Tracks

When asked about having a hospitalist training track, only one quarter (23.3%) of residency program directors noted having a track, focus, or area of concentration for their residents. Of those programs that do not (76.7%), nearly all (84.4%) have no plans to develop this type of training track. Reasons for not developing a track most commonly included a lack of need as residents are currently well trained for inpatient care by standing curriculum (63.1%) and no tracks or areas of concentrations of any kind are offered for residents (37.9%). Less than 10% of residency directors noted no interest in developing any tracks, that hospitalists were not interested in teaching, or that no financial support was available to offer such training. Interestingly, only two of the residency directors who reported not being interested in developing a hospitalist training track also reported that they were philosophically opposed to this idea.

Practice Patterns

Finally, we asked about the percentage of residents graduating in the last 3 years who were providing adult inpatient care in their current practices. Nearly two thirds of

programs (64.1%) reported <50% of their graduates provided inpatient care. Programs located in the South were three times more likely to have <50% providing inpatient care (24.1% versus 8.5% >50%) while programs in the Midwest were 50% more likely to have >50% providing such care (49.2% versus 31.5% <50%, $X^2=8.198$, $P=.042$). Communities with >500,000 population were more than twice as likely to have <50% providing inpatient care (37.0% versus 16.4% >50%) while communities with <75,000 population were nearly twice as likely to have >50% of recent graduates providing inpatient care (39.3% versus 21.3% <50%, $X^2=10.338$, $P=.016$). There were no significant differences in amount of inpatient care provided by graduates that related to the presence of a hospitalist service or by type of program (data not shown).

Discussion

Our survey respondents represent a sample that reflects the national presence of family medicine training programs with diverse reporting from type, size, and geographic location. The results demonstrate that the growth of hospitalist programs nationwide has had a significant impact on family medicine training programs.

Hospitalist programs have clearly infiltrated the inpatient care world with a vast majority of respondents (89%) noting that their associated teaching hospitals have a hospitalist service in place, although only 60% report involvement of those hospitalists in their teaching programs. This contrasts with pediatric programs reporting that as of 2008, 77% of their training programs use hospitalists as teaching attendings, and 65% reported that they were responsible for all inpatient teaching.⁶ Internal medicine programs reported an even higher percentage of teaching involvement in 2009, with 92% reporting hospitalists serving as faculty attendings on their hospital ward services.⁴

Table 4: Reasons for Lack of Hospitalist Involvement in Resident Teaching*,**

	n (%)
Hospitalists not interested in any teaching	
Yes	12 (19.4)
No	50 (80.6)
Hospitalists not interested in teaching family medicine residents	
Yes	13 (21.3)
No	48 (78.7)
Hospitalists not qualified to be members of our faculty	
Yes	5 (8.2)
No	56 (91.8)
Hospitalists not capable/qualified to teach family medicine residents	
Yes	4 (6.6)
No	57 (93.4)
Hospitalists capable/qualified to teach family medicine residents but need faculty development	
Yes	29 (47.5)
No	32 (52.5)
Hospitalists not supported to teach	
Yes	42 (68.9)
No	19 (31.1)
Hospitalists interested and capable but too busy to teach	
Yes	30 (49.2)
No	31 (50.8)

* n=62

** Frequencies may not total to number of respondents eligible to answer questions due to sporadic missing data.

Hospitalists' involvement in family medicine teaching for the majority (61%) of programs was to serve as the teaching attending (conducting teaching rounds, directly observing clinical skills, and providing lecturing). However, it was not felt that the hospitalists were more accessible to the residents or that inpatient supervision had improved with the addition of the hospitalist. Only 20% serve as family medicine faculty, despite the majority of program directors (63%) reporting that hospitalists at their institution were viewed as good educators, which is consistent with reports from internal medicine and pediatric programs.⁹ Surprisingly, the majority (85%) also reported no reduction in inpatient teaching responsibility of their family medicine health center faculty despite the use of hospitalist teaching services.

Those programs reporting that their hospitalists were not involved in teaching noted that for the majority (69%) the hospitalists were

not supported to teach, and half (49%) also indicated that they were too busy to teach. A similar number (47%) felt that the hospitalists were qualified to teach but needed faculty development. This too, is consistent with internal medicine and pediatric programs.^{10,11}

Regarding educational programming, less than a quarter (23%) of the residency directors reported the development of a hospitalist training track—the majority had no plans to develop such tracks. The most common reason cited was “no need” (63%) as the residents were well trained for inpatient care with the standing curriculum. Interestingly, over a third (38%) of the programs offered no tracks or concentration of any kind for their residents.

Finally, we note the declining inpatient care being provided by recent graduates. Indeed, two thirds (64%) of programs reported that less than half of their recent graduates (in the last 3 years) included

inpatient care in their current practices. Not surprisingly, given the needs of smaller communities, only those with <75,000 in population and programs in the Midwest were significantly more likely to report that their graduates provided inpatient care. These differences did not relate to the presence of hospitalist services at their training programs or on the type of residency program reporting.

This study includes some limitations. Although respondents to the CERA survey appear to represent a sample of programs by type, location, and size, the 41% response rate may over- or under-estimate the involvement of hospitalists in family medicine training programs depending on the philosophy of the residency program director toward hospitalist involvement in training family medicine residents. Additionally, we did not present a specific definition of the “hospitalist,” which we intended to be that of physicians working exclusively in an inpatient system. While this is consistent with the Society of Hospital Medicine definition, some respondents may have a looser definition. The survey data was self-reported—no attempts were made to verify the accuracy of the findings as they relate to the presence or absence of hospitalists nor their teaching roles. Finally, while we asked about the quality of inpatient teaching, we did not ask about the curriculum and have no specifics about how such teaching addresses understandings of care transitions and communication issues. Further research to understand how such curricular needs are being addressed is necessary.

Hospitalist services have become a central component of inpatient care, with significant involvement in family medicine resident teaching as well. This involvement is likely to grow, which highlights a need for faculty development initiatives targeted

to hospitalists. It is also apparent that future directions will need to include careful consideration for the structure of such programs in order to balance time devoted to service, with teaching responsibilities, and to ensure support for such activities.¹²

There may continue to be an “uneasy fit” between hospitalists and family medicine¹³ as reflected in the fact that the majority of our respondents noted that despite the increasing role of the hospitalist in teaching, there was not a corresponding reduction in the inpatient teaching responsibilities of health center faculty. Why such work hasn’t declined needs to be explored. This coupled with the reporting that the majority of recent graduates (except those training in smaller communities and in the Midwest) are not practicing inpatient medicine, adds to the debate about the appropriate amount of inpatient training for our residents.^{14,15}

Future directions include curriculum and faculty development along with consideration of teaching efficiencies to allow health center faculty to focus on the increasingly complex needs of outpatient care, particularly as we move to implement patient-centered medical homes.

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