ORIGINAL RESEARCH

Documentation and Coding Education in Emergency Medicine Residency Programs: A National Survey of Residents and Program Directors

Jesse M. Pines, MD, MBA
Sabina Braithwaite, MD, FACEP

Department of Emergency Medicine, University of Virginia Health Sciences Center
Charlottesville, VA

Correspondence:
Jesse Pines, MD, MBA
University of Virginia Health Sciences Center
Department of Emergency Medicine
Box 800699
Charlottesville, VA 22905
pinesj@hotmail.com

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Abstract

Purposes: **To assess attitudes and practices of documentation and coding education for emergency medicine residents (EMRs).** ***Methods:*** **Questions regarding documentation teaching methods were formulated into online surveys for program directors (PDs) and EMRs.** ***Results:*** **Fifty-three of 104 PDs and 446 of 576 EMRs who received the survey completed it. Although 93% of EMRs and 63% of PDs believe proper chart documentation is an important skill, only 18% of EMRs and 25% of PDs believe their program's teaching was adequate. Eleven percent of EMRs reported that they were comfortable with their knowledge of documentation. EMRs who received formal lectures and feedback reported higher comfort levels with their knowledge of documentation (3.3 $\pm$ 1.1 vs. 4.5 $\pm$ 1.4, $p < 0.05$) than those who did not receive formal lectures and feedback.** ***Conclusions:*** **Although most physicians who were surveyed agreed that documentation and coding is a vital skill, many EMRs and PDs report inadequate instruction. Resident education may benefit from broader implementation of formal lectures and formal feedback on documentation and coding skills.**

Keywords

documentation and coding, resident education, emergency medicine, economic incentives, survey, medical record

Introduction

While not a primary focus in many emergency medicine (EM) residency programs, learning how to properly document patient charts is a vital skill for emergency medicine residents (EMRs) to acquire during training. However, the skill of efficient and complete chart documentation may not be adequately taught.

Fully documented charts are essential for patient care continuity and for transfer of information between emergency department (ED) physicians and primary care physicians, consultants, and others.[1] Given the rising costs of caring for patients, coupled with the pressure from payers and the federal government to control costs through shrinking reimbursement, appropriate documentation is extremely important for fiscal viability, particularly in academic medical centers.[2,3] Documentation is particularly important for EDs, which are cited by some as being expensive places to deliver care—especially primary care.[4-7] Also, considering that charts are legal documents, proper chart documentation can serve as practitioners' best defenses against later malpractice suits.[8-10]

Knowledge of proper patient care documentation and coding are important skills in emergency medicine (EM) practice. When EM residents graduate with

inadequate documentation skills, they lack a vital professional skill. In community practice, optimal chart documentation is crucial to group and individual physician reimbursement; therefore, internal feedback on individual performance may occur.

We constructed a survey to assess EMRs' and PDs' attitudes and practices regarding documentation and coding guideline education. The intent was to use the information to identify areas of perceived deficiency when refining a formal documentation and coding education curriculum.

Methods

Study Design. Two surveys, one for EMRs and another for PDs, were posted online on the University of Virginia Department of Emergency Medicine website. Questions regarding methods used to teach documentation and coding and regarding attitudes and teaching methods were included in both surveys. We used numerical Likert scales (1-7) for questions about attitudes. Multiple choice and freeform text answers were used for informational questions. The University of Virginia Human Investigation Committee exempted the study from informed consent.

Study Setting and Population. EMRs and PDs in 124 U.S. categorical EM residency programs were surveyed. We identified email addresses through the Society for Academic Emergency Medicine (SAEM) website.

Data Collection. A cover message and a link to the survey were sent to residency coordinators. They were asked to forward the survey to their residents and to reply to the authors when they forwarded the link. PDs were emailed directly. Survey responses were anonymous.

Table 1. How is documentation and coding taught in your residency program?

EM Residents' Responses	Percent
Not taught	10%
Informal teaching in the ED	61%
Formal lectures	53%
Peer chart review	15%
Coders chart review	19%

Data Analysis. Comparisons of responses were performed using Student's t-tests and chi-squared analysis. An *a priori* alpha of 0.05 was used for all comparisons. Statistical analysis was performed using Microsoft Excel 2000 (Microsoft Corporation, Redmond, WA).

Results

A total of 104/124 (84%) of the EM program directors' email addresses were operational (not returned). Eighteen percent (22/124) of EM residency coordinators forwarded the survey to 567 residents. Surveys were completed by 446 EMRs (79% of those who received it) and 53 EM PDs (51% of those who received it). The 446 residents who filled out the survey represent less than 10% of the almost 5000 EM residents in the United States.

Table 1 shows resident responses regarding teaching modalities in their residency programs. Ninety-three percent of EMRs and 63% of PDs reported that proper documentation was a "very important" (1 or 2 on the 1-7 scale) skill. Eighteen percent of EMRs and 25% of PDs believed their program's teaching was "very adequate." Only a small portion (11%) of EMRs felt very comfortable about their knowledge of documentation and 17% of PDs felt very comfortable about their residents' knowledge of documentation. Table 2 lists factors impacting education on documentation and coding.

Fifty-nine percent of residents reported that they "always" or "almost always" adequately document their charts, while 40% of EM PDs reported that their residents "always" or "almost always" adequately document.

Fifty-four percent of EMRs reported that their programs offered formal lectures on documentation and coding. Fifteen percent of residents reported receiving both formal lectures and formal feedback. No PDs reported a lack of faculty who could

Table 2. What are barriers to adequate documentation and coding in your residency program?

EM Residents' Responses	Percent
Inadequate teaching	44%
Not enough time (i.e., too busy)	78%
Inadequate coding by coders	7%
Attending staff not really interested in coding and documentation	13%
Residents not really interested in coding and documentation	35%
Inadequate resident or faculty knowledge about coding and documentation	39%

adequately teach about documentation and coding. EM residents who received both formal lectures and formal feedback had a significantly higher reported comfort level with their knowledge of documentation and coding (3.3 ± 1.1 vs. 4.5 ± 1.4, $p < 0.05$).

Forty-two percent of residents and 52% of PDs reported that formal lectures would make them pay more attention to documentation, while 61% of residents and 62% of PDs reported that formal feedback would.

Discussion

A 1999 American Board of Emergency Medicine (ABEM) in-training exam survey identified problems with the educational curriculum regarding documentation in residency programs, including discomfort with knowledge of chart documentation and lack of formal instruction on billing, documentation, and coding.[11] The study found that only 4% of residents were extremely confident in their ability to document charts. They also reported a poor understanding of charges for services rendered in the emergency department. Our surveys were constructed to detail the current state of documentation and coding education in EM residencies, and to elucidate specific elements that residents perceive as successful in teaching them these skills. These techniques could be used to refine a documentation and coding curriculum being developed by one of the authors.

Medical school and residency education traditionally focuses on teaching the clinical and human aspects of taking care of patients and tends to de-emphasize economic and legal aspects of medical care.[12] However, when residents graduate, they find that understanding the details of the economic and legal aspects of care are vital skills for a 21st century physician.[13] Proper chart documentation is a critical skill that residents need to attain during residency training, but our surveys confirm that few are comfortable with their skills in this area. The recently published "Model of the Clinical Practice of Emergency Medicine" does mention documentation as a key skill.[14] Specifically, emergency physicians must "…communicate patient care information in a concise manner that facilitates quality care and coding."[15]

Our survey results identified two elements for inclusion in documentation and coding education: formal lectures and formal feedback, which were felt by both residents and program directors to increase attention to this topic. An example of formal feedback similar to the one currently being implemented at University of Virginia is included in Figure 1. Retrospective review of charts with the coding staff, the PD or another faculty member may also be a useful way to teach documentation. Coder chart review gives residents a chance to see the coding forms and the process of assigning a documentation level. Faculty can also be helpful in teaching chart documentation retrospectively, specifically with regard to ensuring an appropriate documentation level, as well as including pertinent positives and negatives that indicate the clinical decision-making of the patient encounter.

Further areas for improvement include addressing barriers to accurate coding and documentation as

Figure 1. Example of Formal Feedback for Residents (9 total residents)

August 2002 Patient Seen Documentation Levels
Fiscal University Emergency Medicine Residency

Resident	Total Patients	Documentation Level 99211	99212	99213	99214	99215	Avg Level	
PGY1								**Avg PGY1**
Resident A	132	20	33	45	20	14	2.81	2.92
Resident B	146	31	25	55	18	17	2.76	
Resident C	135	12	15	64	22	22	3.20	
PGY2								**Avg PGY2**
Resident D	215	12	23	83	54	43	3.43	3.31
Resident E	247	42	31	72	49	53	3.16	
Resident F	219	23	24	61	78	33	3.34	
PGY3								**Avg PGY3**
Resident G	235	16	42	56	67	54	3.43	3.22
Resident H	172	24	25	62	38	23	3.06	
Resident I	221	45	11	61	71	33	3.16	

identified by EMRs and PDs in the survey, such as lack of time for interaction in the ED due to patient care load and inadequate teaching of material to residents. PD perception of resident lack of interest, which was not confirmed by the resident survey results, needs to be addressed as well.

Little more than half of residents receive informal documentation teaching, such as direct teaching with specific charts, in the emergency department. When a chart is identified as inadequately documented, a brief discussion with the resident about how to document better for legal and reimbursement reasons is timely and valuable to resident education. This does, however, assume that faculty understand documentation coding levels well enough to teach residents. Only about half of residents receive formal lectures on documentation and coding. Lack of formal teaching is apparently not due to a lack of knowledge in academic emergency groups, based on the PD survey responses. It should be noted, however, that even with a thorough understanding of chart documentation and coding, translating that knowledge into the practice of proper chart documentation is a considerable challenge. Recognition that this is an important skill early in a career in emergency medicine (during residency) can make life much easier after graduation.

Other factors negatively impacting education on this subject include inadequate coding by coders and disinterest by residents and attending staff in documentation. In a busy ED, documentation can take significant time away from direct patient care. One study found that residents spend 21% of their time documenting charts.[15] Resident workload is difficulty to control since it is affected by many factors, including patient volume, acuity, and resident proficiency. However, since less than half of residents and program directors report that inadequate teaching is a significant barrier, emphasis on teaching this vital skill is needed from academic faculty.

While such a curriculum has not been formally tested prospectively, based upon the results of this survey, we recommend that programs implement formal lectures and formal feedback into their teaching of documentation and coding (See Figure 2). In addition,

faculty should make a concerted effort to teach documentation at the point of service. Coders' chart review (having coders sit down with residents to go over a handful of charts) is also included as a recommendation on the formal curriculum. This gives residents an opportunity to interact with coders and to better understand the thought processes behind coding charts. While a satisfactory number of charts to review has not been studied, we recommend approximately 20-30 charts of varying acuity for review in order to understand the thought process behind the assignment of evaluation and management (E&M) codes.

There are significant limitations to this study. Only 18% of residency coordinators reported forwarding the survey website to their residents over the course of three emails from the authors. It is unknown why so few of them forwarded the email to their residents. One residency coordinator replied that her residents only filled out SAEM approved surveys. Thus, although we achieved a high response rate of 78%, the residents who responded to this survey represent a small sample of the EM residents in US residency programs. Another possibility is that more were forwarded to residents but the program coordinators failed to reply that they had sent the email. We had a 51% response rate for EM program directors, which represents less than half of the program directors at the 124 accredited EM residency programs. Another significant limitation of this study is that due to the survey design, the results reflect the only perceptions of the respondents on documentation and coding.

Methodologically, there were other limitations to this study. We included a seven-point Likert scale for questions without clear instructions about the specific meaning of a "1" or a "2." We extrapolated an answer of "1" as "very comfortable" and a "2" as "comfortable" for the purposes of analysis.

The next step is for programs to prospectively study the effects of formal feedback and formal lectures on subjective and objective measures of resident documentation. The proposed curriculum in Figure 2 should be studied in a rigorous fashion. Consideration should be given to including chart documentation as part of the core curriculum.

Conclusions

It is widely agreed ~~upon~~ that documentation is a vital skill in emergency department practice. However, residents think that this skill is not adequately taught. There are significant barriers to ensuring that charts are documented properly, some that are controllable, others that are not. We have identified steps that residency programs can use to alter their curricula to include formal lectures and formal feedback on

Figure 2. Sample Documentation Curriculum.

	Content	Annual Hours
Formal Lectures	Intro to documentation and coding, E&M levels	3
	Critical care, procedures, and observation coding and documentation	2.5
Formal Feedback	Semi-annual comparison with peers of same PGY-level (blinded)	N/A
Coders' Chart Review	Annual review of 10 charts with coders to review strategies to maximize E&M levels	1
Informal Feedback	Ongoing during ED shifts throughout training	>5

documentation and coding. In addition, informal teaching in the emergency department may also be useful.

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