

## AAIM Perspectives

AAIM is the largest academically focused specialty organization representing departments of internal medicine at medical schools and teaching hospitals in the United States and Canada. As a consortium of five organizations, AAIM represents department chairs and chiefs; clerkship, residency, and fellowship program directors; division chiefs; and academic and business administrators as well as other faculty and staff in departments of internal medicine and their divisions.

### Early Adoption of the CMS Rule Change for Medical Student Documentation



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#### INTRODUCTION

Clinical documentation is a critical skill for medical students to learn and is one of the Association of American Medical Colleges (AAMC) 13 core entrustable professional activities for entering residents (CEPAERs).<sup>1</sup> Documentation skills are also tested on Step 2 of the US Medical Licensing Clinical Skills Exam (Step 2 CS).<sup>2</sup> However, until recently, billing related to clinical documentation by a student had been limited to nonessential elements because of rules per the Centers for Medicare and Medicaid (CMS).<sup>3</sup> Thus, educational objectives and the reality of clinical practice were not aligned.

Paralleling federal legal barriers to student documentation was the systemic marginalization of students during wide-scale implementation of electronic health records (EHRs).<sup>4</sup> Both of these concerns led to a multiyear, multiorganizational effort representing physician educators to change the CMS rule as a first step in creating more meaningful student contributions and learning. In response, in March

2018, CMS changed its policy to allow billing based on medical student documentation of all elements of an evaluation and management visit with appropriate supervision.<sup>5</sup> Though not all billing and compensation is determined by CMS, the vast majority of insurers use CMS rules as guideposts for their own rules. This policy change has the potential to impact internal medicine clerkship students disproportionately because the great majority of notes written by internists are those impacted by the rule change.

However, policy is not process, and others have predicted hurdles with the rule change.<sup>6</sup> We hypothesized that despite the rule change, institutions may experience delays or hurdles in the implementation of student note writing because of unforeseen barriers. With a national survey of internal medicine clerkship directors (CDs), we aimed to understand the experience of those who have implemented the new rule and the barriers they overcame and continue to face. We also sought to perform a needs assessment of potential resources beneficial to educators as they operationalize the new rule.

#### METHODS

Clerkship Directors in Internal Medicine (CDIM), part of the Alliance for Academic Internal Medicine (AAIM), conducts an annual survey of CDs on issues

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relevant to its members. Approximately 88% (136 of 154) of Liaison Committee on Medical Education (LCME)-accredited schools had CDIM institutional representation during the survey period. The CDIM Survey and Scholarship Committee reviewed, revised, and pilot-tested the survey questions for content validity. The survey included 4 sections. The section “CMS rule change and medical student documentation” consisted of 14 questions, including multiple choice, five-point Likert scale, free-text response options, and included logical skip and display patterns. Because of this conditional logic or item non-response, not all questions were presented to all respondents or were answered.

The CDIM Annual Survey launched October 2, 2018. Each of 136 possible institutional respondents received a unique survey participation URL via e-mail to a Qualtrics Survey. Each non-respondent was sent four e-mail reminders and a final personal e-mail reminder from a committee member. The survey closed November 30, 2018.

Following data collection, a variable to denote respondent and nonrespondent medical schools as “public” or “private” was merged into the data set using publicly available data.<sup>7</sup> Using CDIM membership files, data on respondent and nonrespondent self-reported gender was added to the data set; US Census Bureau geographic region of schools were merged into the data set.<sup>8</sup> The data was de-identified prior to analysis. In addition to descriptive statistics for the summary results, Pearson  $\chi^2$  and Fisher exact tests were used for statistical comparisons between groups of categorical variables. Data analysis was performed in Stata 14.2.<sup>9</sup>

## RESULTS

The survey response rate was 81% (110 of 136). There were no statistically significant differences between respondents and non-respondents based on the medical school type (public or private;  $\chi^2 = 0.0952$ ,  $P = 0.758$ ), US Census Bureau region (all  $P > 0.146$ ), and CD gender ( $\chi^2 = 0.5059$ ,  $P = 0.477$ ). Demographic data for respondents are shown in Table 1.

A total of 29% of the respondents (32 of 110) allow students to document all elements of a note in the patient record during the internal medicine clerkship on behalf of an attending physician who verifies the content of the student’s note. Nineteen percent (21 of

110) of the respondents have not implemented the rule, whereas 35% (38 of 110) responded “not yet” but have started discussions to implement the changes. Others mentioned pilots occurring in areas outside of the internal medicine clerkship or with fourth-year students only.

From the 32 of 110 institutions that have implemented the rule change, the majority allow ambulatory, inpatient internal medicine clerkship students, and subintern/acting intern students to document (Table 2). In about one-third of these institutions, the residents cannot attest a student note for billing purposes. The remaining institutions allow their residents to attest a student note, but for 34% (11 of 34) only if the resident has performed a history and a physical examination independently from the student (Table 2). The attending may attest the student note after the resident’s attestation in all cases, and that note will become the note of

record and be used for billing purposes. Overall, 46% (11 of 24) estimated the majority of their ambulatory faculty use student notes, whereas 61% (17 of 28) of respondents estimated that the majority of inpatient faculty use student notes.

Despite implementation, 59% (19 of 32) continue to have barriers (Table 3). The learning site, hospital or teaching service, and service leadership presented different levels of difficulty in integrating student note writers. Moderate/great difficulty in implementing note writing was reported for 21% (4 of 19) of CDs at the main teaching hospital, 38% (5 of 13) at satellite teaching hospitals, and 56% (5 of 9) at community hospitals. Even within the same hospitals, specialty services created moderate/great difficulty for 53.4% (8 of 15) of CDs compared with general medicine services where only 16% (3 of 19) had moderate/great difficulty. Moderate/great difficulty occurred for 42% (5 of 12) in resident or fellow outpatient clinics and 33% (6 of 18) attending outpatient clinics. Only 13% (2 of 15) reported moderate difficulty in integrating student note writing with hospitalist services. Denominators varied based on whether the service, hospital, outpatient clinic, or course structure existed at each school of medicine.

Thematic analysis of free text responses was performed to describe barriers for those who have not yet implemented the updated CMS guidelines (38 of 110, 35%) as well as those who answered “other” to the question of whether medical students were allowed to document (16 of 110; 15%). Barriers fell into broad

## PERSPECTIVES VIEWPOINTS

- Federal Centers for Medicare and Medicaid Services (CMS) rule changes allowing student note writing are perceived positively.
- A minority of educators have been able to implement student note writing.
- Students can contribute meaningfully to the work of caring for patients.
- Barriers include faculty development, workflows, and electronic health records.
- Early adopters of the rule changes offer solutions to meet these challenges.

**Table 1** Respondent Demographic, Personal, and Institutional Attributes

		N* (%)
Gender	Male	60 (55)
	Female	50 (45)
Age (median)	43 years old	32-69 range, 10.0 SD
Role	Clerkship Director	95 (86)
	Co-Clerkship Director	10 (9)
	Other	5 (5)
	Years in Role	
	<1 year	8 (7)
	1-2 years	12 (11)
	3-5 years	35 (32)
	6-10 years	25 (23)
	11-15 years	12 (11)
	16-20 years	8 (7)
	>20 years	8 (7)
Academic Rank	Assistant Professor	39 (36)
	Associate Professor	50 (46)
	Professor	21 (19)
Class size	<51	3 (3)
	51-80	9 (8)
	81-120	22 (20)
	121-200	61 (56)
	>200	15 (14)
Medical School type	Public	65 (59)
	Private	45 (41)
Census Bureau Region of United States	Northeast	24 (22)
	Midwest	29 (26)
	South	51 (46)
	West	17 (16)
	Un-incorporated	1 (1)

\*N =110. SD = standard deviation.

**Table 2** Policies and Procedures in Place for the 32 Institutions Allowing Medical Student Documentation

	Number of institutions, N (%)
Students Allowed to Write Notes in the EHR	
Ambulatory clerkship students	25 (78)
Inpatient clerkship students	29 (91)
Subinternship/Acting Internship students	28 (88)
Preclinical students	2 (6)
Attestation Policies	
Residents can attest student note for billing if the resident independently performs history and physical	11 (34)
Residents can attest student note for billing if the resident performs direct observation of history-taking and physical examination by student	10 (31)
Residents cannot attest student notes for billing	11 (34)
Attendings can attest the note after the resident attestation of the student note to be used as the note of record	20 (100)*
Educational Policies and Guidelines	
Educational guidelines for medical student documentation	23 (72)
Resident guidelines for medical student documentation	22 (69)
Compliance requirements for when a student's note can be used for billing	19 (59)
Faculty development on appropriate documentation practices with students	19 (59)
Limits on the number of notes a student can write	10 (31)
Restrictions for whom students can write notes	5 (16)

\*There were only 20 respondents for this question. EHR = electronic health record.

categories: difficulty engaging hospital leadership, billing compliance, legal concerns, pedagogical conflict (concern that interns would write fewer notes), student EHR integration, and student ability to write notes in various settings or specialty services. Among respondents answering “not yet” to full implementation, legal concerns as well as EHR workflow issues predominated. Many institutions allowed only fourth-year students to write notes or allowed it in either the inpatient or ambulatory settings but not both. Several CDs with students across multiple sites noted that decisions were institution-dependent or dependent on the type of note (eg, admission vs progress notes).

About one-half (48%, 51 of 106) of respondents believe that the CMS rule change for student documentation will somewhat/greatly increase the recruitment and retention of ambulatory preceptors. The majority of respondents believed that the new rule would not change recruitment or retention of inpatient preceptors (75%, 80 of 107). In contrast, respondents believed that the rule change would somewhat/greatly increase

the level of satisfaction for ambulatory (68%, 72 of 106) and inpatient (51%, 55 of 107) preceptors.

The respondents overwhelmingly believed that the rule change would either somewhat/greatly increase student involvement in clinical practice or the wards (84%, 92 of 109), student satisfaction with learning internal medicine (84%, 91 of 109), student documentation competency (86%, 94 of 109), student clinical reasoning skills (68%, 74 of 109), and student ability to receive feedback on notes (90%, 98 of 109).

CDs desire student documentation assessment tools (78%, 84 of 107), faculty development tools for student documentation (74%, 79 of 107), note writing curriculum (70%, 75 of 107), compliance guideline examples (70%, 75 of 107), implementation process examples (64%, 68 of 107), and tools to improve workflows that accommodate learner documentation (55%, 59 of 107).

**Table 3** Persistent Barriers Identified by Early Adopters (of the 19 Early Adopters Who Noted Any Barriers)

	Moderate/Great amount of difficulty, n (%)
Lack of preceptor knowledge/faculty development about the new rule	13 (69)
Workflow difficulties	12 (63)
Preceptor unwillingness to let students write notes	10 (56)
Concerns about legal liability	9 (47)
Residents' level of knowledge of new rule	9 (47)
Variety of EHRs and training required	7 (37)
Compliance department at my institution	7 (37)
Inability to deliver appropriate faculty development about the rule due to lack of resources	7 (37)
Limited student access in the EHRs	3 (16)
Poor quality of medical student notes	2 (11)

EHR = electronic health record.

Respondents expressed interest in leveraging organizational influence with EHR companies to improve workflows to include student notes. CDs queried whether competency or learner stage should dictate student note suitability for billing. Respondents desired guidance on resident attestation of student notes, rubrics for resident evaluation of notes in the EHR, and how to measure impact on resident education and satisfaction. Some respondents desired clarification of the rule as it relates to third-party payers or the need for faculty physical presence during encounters involving residents. They also expressed concerns that level of billing may decrease, adversely affecting faculty compensation.

## DISCUSSION

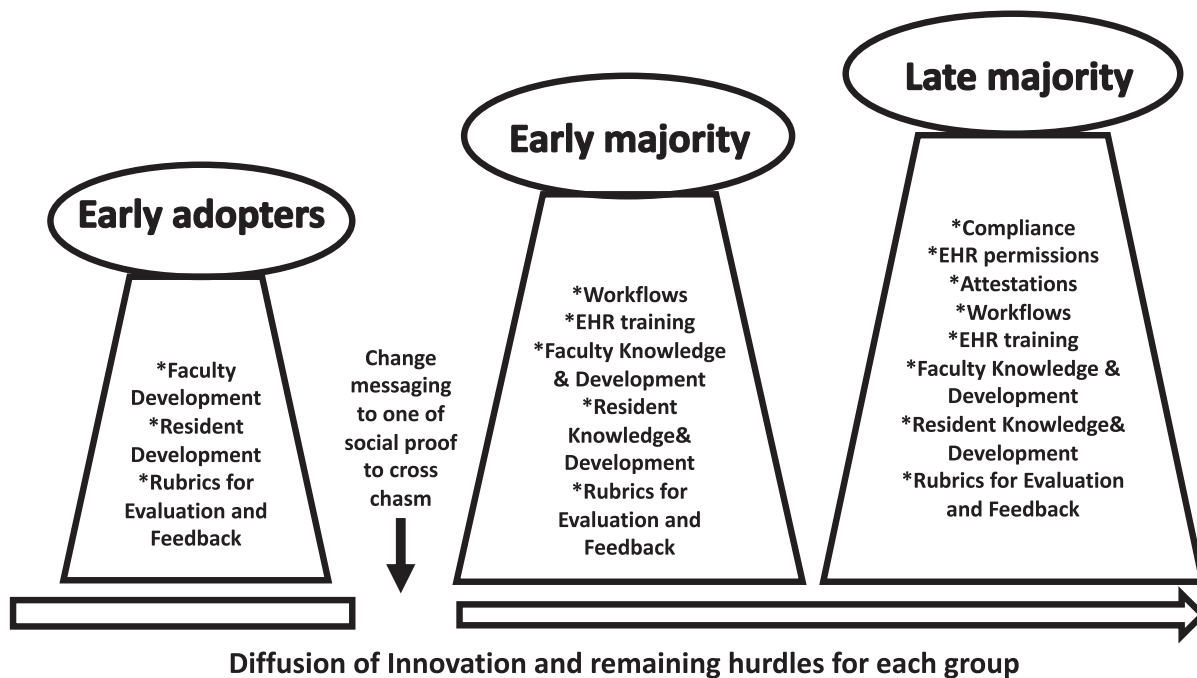
Our study demonstrates that recent federal CMS rule changes are having an immediate impact on medical student education. Effective written communication skills have long been taught by internists, endorsed by Association of American Medical Colleges as a CEPAER,<sup>1</sup> evaluated on Step 2 CS,<sup>2</sup> and required by LCME.<sup>7</sup> Teaching these skills effectively should involve highly supervised practice to build trust between teachers and learners and ultimately create confident learners who contribute meaningfully.<sup>10</sup> But teaching written communication skills to students efficiently in the usual flow of patient care has been difficult because of factors such as student inability to document in EHRs and time constraints for physicians to review and give feedback while still needing to complete their own documentation. The recent CMS rule change allows appropriately supervised medical students to document patient encounters and for

physicians to edit these notes and use them for billing, potentially creating trust and meaningful student contributions to patient care.<sup>10</sup> But policy is not process, and there remain substantial barriers to this ideal scenario.

The most impressive finding of our study is that the great majority of respondents find the rule change to be positive for both students and educators. Although the majority continue to experience barriers to implementation, our analysis of their responses can provide guidance for those who continue to struggle or may be resistant to change. Rogers' diffusion of innovation theory<sup>11</sup> provides a framework for understanding the adoption of the CMS rule change at individual institutions. (Figure 1)

The early adopters offer a roadmap to successfully navigating the initial barriers (Figure 1). Early adopters have at least partially surmounted EHR, compliance, and legal concerns at their institutions. Newer barriers revolve around faculty/resident knowledge and workflows that may vary by site or service. These institutions have developed acceptable policies with their compliance departments, workflows in their EHRs, or educational policies that explicitly lay out the numbers of notes per half-day or per service that a student should be expected to write. For example, UW Health, University of Wisconsin School of Medicine, and their compliance department have developed guidelines and attestation statements for billing physicians to use with medical student notes. University of North Carolina (UNC) created educational policies limiting students to 3 notes per half-day in clinic for patients seen, examined, and presented at the bedside. Notes are then edited, assumed, and attested by the precepting attendings for billing. Internal medicine leaders at University of Chicago collaborated on guidelines and materials for the implementation of student note writing on resident teaching teams.<sup>12</sup>

Early adopters exploit documented deficiencies and disparities to surmount barriers and drive further change.<sup>11</sup> They have leveraged the new CMS rule<sup>4</sup> and CEPAERs<sup>1</sup> to advocate for EHR access, student integrated workflows, and changes from their compliance and billing offices. For example, our study shows that early adopters used deficiencies in preceptor satisfaction or recruitment to push for student note writing. Our study shows disparities in implementation across sites and services. An early adopter can leverage variation and LCME accreditation standard 8.7<sup>13</sup> that states sites must provide comparable educational activities to advocate for change. CDs will still need faculty development resources and policies that are site specific. Additionally, evidence that faculty utilization of student notes for billing increases student feedback on note writing and augments student education will be critical to support further adoption.



**Figure 1** Hurdles that each group must still overcome to successfully implement student note writing. EMR = electronic medical record.

The next group of adopters, the early majority, have interest in change but may require a different strategy. Whereas the early adopters garnered stakeholder support based on deficiencies in student learning opportunities, the psychology of persuasion<sup>14</sup> suggests that the early majority should seek stakeholder support based on the success of the early adopters. The early majority consists of pragmatists and social coercion, to which the early majority will respond, is linked to social proof or demonstrated success.<sup>14</sup> The early majority may need to translate the success of others into small scale pilots to demonstrate success is possible at their own institutions. For example, University of Alabama has piloted workflows only on general medicine services with fourth-year students. A partnership between the compliance officer and the vice-chair for education sprung from existing processes and policies at other institutions.<sup>12</sup> Success on the general medicine service will hopefully lead to spread to other services. Based on our results, the early majority may find that “shrinking the change” to 1 or 2 general medicine resident or hospitalist services at the main teaching hospital is easiest.

Our study also identified needed CD resources, including note writing curricula, specifics of different EHR workflows, and grading rubrics for evaluating student notes in the EHR. Building links to faculty development tools in the EHRs as “just-in-time” modules could increase the usefulness. To aid others, a searchable repository for attestation statements, compliance policies, and workflows has been compiled through a

collaboration with AAIM, the authors, and the Alliance for Clinical Education.<sup>12</sup>

Future directions should measure the impact of the rule change on students. More responsibility could worsen burnout. Alternatively, more engagement and meaningful roles could actually improve burnout. Students may feel more prepared for residency and more comfortable with EHRs.<sup>15</sup> Impact on student learning should be evaluated. Faculty and residents should be surveyed to understand the impact of the student note writing on their time and workflows in the EHR. Because some respondents expressed concern about the educational impact on residents, it would be useful to quantify whether this positively or negatively impacts their education, teaching, and evaluation skills.<sup>16</sup>

**LIMITATIONS**

Only internal medicine CDs were surveyed and, because there was only one responder per medical school, we assume they accurately represented what may occur at various sites. As our study focused on the CMS rule change; we did not attempt to dive into the complexities of EHR access to students, how this may vary by site, or how it plays a role in students making meaningful contributions to patient care. Our data may not represent changes on all learning services or learner levels. However, internal medicine may be a specialty where the rule change is especially relevant. The



survey was done approximately 10 months after the CMS rule change. There may be other barriers and solutions not yet encountered nor reported in this article. There may be long-term consequences, such as litigation, that may pose further difficulties.

## CONCLUSION

The CMS rule change is perceived as a positive change by CDs, but barriers exist in process, compliance, and faculty and resident education. Sharing lessons learned from early adopters may help broaden the educational impact of the federal rule change.

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## SUPPLEMENTARY DATA

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amjmed.2020.05.007>.