Orthopedic Grand Rounds Can Change Resident Practice

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Abstract

This study sought to determine whether a grand rounds presentation could change resident practice.

A 6-month review of all hip fracture patients 65 years and older at a single academic medical center was performed. The rate of addressing advanced directives and code status as documented in the medical record was noted. A grand rounds presentation was then given to the orthopedic department, and the medical records of hip fracture patients for the 12 months following the grand rounds were reviewed.

In the 6 months prior to the grand rounds, orthopedic residents did not document code status or advanced directives in any of their admission or consultation notes. Following the grand rounds, orthopedic residents addressed advanced directives, code status, and contact person in 76% of their admission notes.

There was a marked difference in the rate of documentation among residents who attended the grand rounds (88%), compared with residents who did not attend grand rounds (20%). Based on the results of this study, specifically whether residents attended grand rounds, this form of teaching can lead to changes in resident behavior.

Resident education continues to be the subject of increasing attention in the medical literature.[1-33] Although there are many approaches to teaching residents (didactic lectures, problem-based cases, online lectures and tutorials, simulated practice, direct apprenticeship), the optimal technique or combination of techniques remains a matter of debate.[2,4,29,30,34-47]

Grand rounds is a time-honored means of education for medical and surgical residents. Historically, grand rounds involved patient presentation, including history taking and physical examination by the physician leading the rounds. Over time, the format of grand rounds changed, and now it often takes the form of didactic lecture, which may or may not include discussion of actual cases. Some have questioned the value of didactic lectures in modern resident education.

We conducted a study to determine whether attending a multidisciplinary grand rounds presentation could lead to a change in resident practice. Specifically, whether it could contribute to orthopedic residents' improvement in assessing advanced directives and code status (AD-CS) in elderly patients with hip fractures.

Materials and Methods

After obtaining institutional review board approval, we reviewed the history and physical examination documents of all hip fracture patients 65 years and older admitted over a 6 month period. For each patient, any orthopedic surgery and internal medicine notes were reviewed to see how often either service documented whether the patient had an AD and whether a CS (full code, do not resuscitate, do not intubate, other) was recorded. While these charts were being reviewed, a survey was sent to the orthopedic surgery residents to assess their perception of how often they were documenting AD-CS and to evaluate their attitude toward AD-CS. The residents were asked what they perceived as barriers to addressing AD-CS.

After the survey, a 1-hour AD-CS grand rounds presentation was given to the Department of Orthopedic Surgery at Dartmouth-Hitchcock Medical Center. The 12 residents in attendance were unaware of the planned study. There were 3 grand rounds speakers: an orthopedic surgery attending physician, an orthopedic surgery resident, and a palliative care attending physician. The orthopedic attending physician discussed the value of addressing AD-CS, and the orthopedic resident described the results of the resident survey. The new admission and consultation note templates were introduced—these include fields that prompt users to document AD-CS—and the steps for accessing the templates were reviewed. The palliative care attending physician provided further information and practical instruction on addressing AD-CS.

One year later, we reviewed the admission records of all hip fracture patients 65 years and older, recorded their AD-CS documentation rates, and determined who the residents were and whether they had attended the grand rounds presentation. We also gave the orthopedic surgery residents a follow-up

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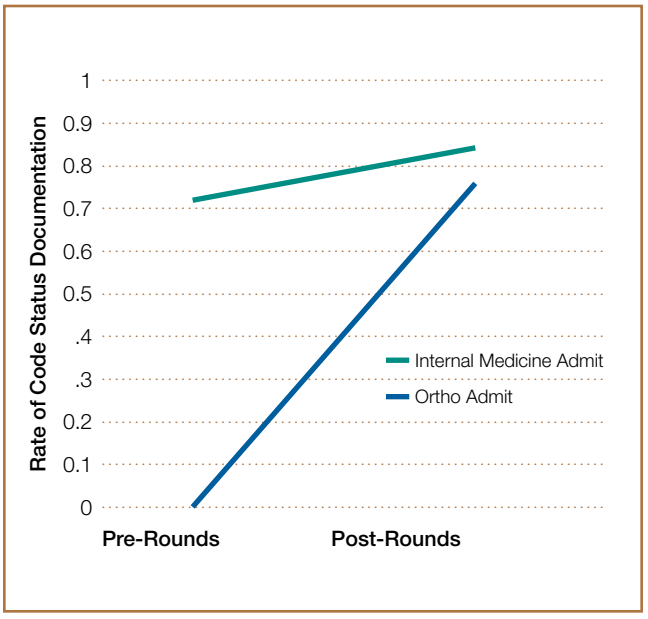

Figure. Rate of orthopedic surgery and internal medicine resident documentation of patient code status before and after grand rounds.

survey to try to determine if their perspective had changed and, if so, for what reason.

R version 2.11.1 (64-Bit) for Windows was used for all statistical analyses, and the Fisher Exact Test was used to compare proportions among groups.

Results

According to the charts reviewed before the grand rounds presentation, 0 of the 33 hip fracture patients admitted to the orthopedic service had either AD or CS documented in an orthopedic admission note. In addition, 12 of the 17 patients (70%) admitted to the internal medicine service had AD or CS documented. When internal medicine consulted on an orthopedic admission, it documented CS in 12% of its internal medicine consultation notes.

Table I summarizes the results of the orthopedic resident survey conducted before the grand rounds presentation. Many residents reported documenting AD either sometimes (42%) or most of the time (8%). Two of the reasons residents cited 'most of the time' for not addressing AD were that they felt medicine or another service was better equipped to address the issue (75%) and they felt it was not a priority for them (33%).

After the grand rounds presentation, orthopedic residents

Table I. **Survey Administered to Orthopedic Residents Before Grand Rounds Presentation**

1. What year of training are you in?	
PGY-2	33.30%
PGY-3	16.70%
PGY-4	25%
PGY-5	25%
2. How often would you say that you address advanced directives and/or DNR orders with hip fracture patients on admission?	
Always	0%
Most of the time	8.30%
Sometimes	41.70%
Rarely	50%
Never	0%

3. Please rate how often the following things keep you from addressing DNR and/or advanced directives with hip fracture patients on admission.

	Always	Most of the Time	Sometimes	Rarely	Never	N/A
Patient mental capacity/cognition	0%	8.30%	91.70%	0%	0%	0%
Inability to contact family	0%	8.30%	50%	25%	8.30%	8.30%
Inability to contact PCP	8.30%	0%	25%	25%	16.70%	25%
Not a priority for me on admission	0%	33.30%	50%	8.30%	8.30%	0%
I feel medicine (or another service) is better equipped to address this issue	8.30%	75%	16.70%	0%	0%	0%
Too busy or distracted	0%	16.70%	58.30%	16.70%	8.30%	0%
The patient wishes not to discuss it	0%	8.30%	16.70%	33.30%	33.30%	8.30%

Abbreviations: DNR, do not resuscitate; N/A, not applicable; PCP, primary care provider; PGY, postgraduate year.

Table II. **Survey Administered to Orthopedic Residents 1 Year After Grand Rounds Presentation**

1. What year of training are you in?	
PGY-2	20.0%
PGY-3	13.3%
PGY-4	20.0%
PGY-5	13.3%
2. Did you attend the orthopedic grand rounds addressing advanced directives and code status in July 2009?	
Yes	53.3%
No	46.7%
3. If you attended the grand rounds, do you feel that you learned anything that assisted in your ability to better care for patients?	
Yes	53.3%
No	0.0%
I didn't attend the above grand rounds	46.7%
4. Do you think that it is important to address advanced directives and code status in hip fracture patients that orthopedic residents admit or consult on in the emergency department?	
Yes	100.0%
No	0.0%
5. Since July 2009, has your impression of the importance of advanced directives and code status in orthopedic patients …	
Increased?	66.7%
Decreased?	0.0%
Stayed the same?	33.3%
6. Are you aware of the departmental template in CIS for hip fracture admission notes that includes a section for addressing advanced directives and code status?	
Yes	66.7%
No	33.3%
7. Do you use this template?	
Yes	53.3%
No	46.7%
8. How often do you address advanced directives and code status with hip fracture patients at time of admission and include it in your admission or consult note?	
Never	7.7%
<25% of the time	15.4%
25%-50% of the time	7.7%
50%-75% of the time	15.4%
>75% of the time	30.8%
Always	23.1%

Abbreviations: CIS, Computer information system; PGY, postgraduate year.

documented both AD and CS in 29 of 38 admission notes (76%), compared with 0% before the presentation (P<.001). The internal medicine service documented CS in 21 of 25 patients (84%) admitted to that service, compared with 12 of 17 patients (71%) admitted to that service before the presentation (P>.81). The comparative increase in AD-CS documentation rates between the orthopedic surgery and internal medicine services was significant (P<.001). These rates are represented in the **Figure.** The orthopedic service documentation rates were 88.4% for the residents who had attended

the presentation, and 20% for the nonattendees (P<.001).

Table II summarizes the results of the orthopedic residents' follow-up survey. All those who had attended the grand rounds presentation felt it provided information that helped them address AD-CS. Two-thirds reported having a better understanding of the importance of AD-CS since the presentation. More than half reported now addressing AD-CS either always (23%) or more than 75% of the time (31%). Fifty-three percent reported routinely using the AD-CS templates; these were the same residents who had attended the presentation.

Discussion

Grand rounds began in the 19th century.[48] This bedside-based teaching format was used by Sir William Osler and other esteemed clinicians. As the audience for instructors grew, they had to move their presentation and discussion of patients to amphitheaters that could accommodate more attendees. This teaching format is similar in many ways to today's problem-based learning.

Over time, a more didactic approach was applied to grand rounds. According to a recent survey, 291 of 300 (97%) of United States hospitals offered grand rounds as part of continuing medical education, but patients were present less than 3% of the time.[48] The format for most of the grand rounds in the survey was a lecture series. Only 10% involved clinical case presentations or workshops/small groups. Grand rounds was the most expensive conference in 78% of departments.[48]

Of the multiple formats for resident education, small problem-based interactive sessions are supported for optimal retention of new knowledge.[18,49-51] Although the value of modern grand rounds has been questioned, the present study showed that such lectures have a place in resident education. All residents who attended the grand rounds presentation reported learning information that helped them address AD-CS with patients. In addition, their rate of CS documentation in admission notes increased from 0% to 88.4%. Nonattendees did not show such dramatic improvement.

To be effective, quality improvement projects must provide information that is meaningful, practical, immediately applicable, and measurable. Why did our orthopedic surgery residents change their practice after the grand rounds presentation? There are no definitive conclusions, only explanations. First, the presentation was multidisciplinary. Attending staff in orthopedic surgery and palliative care were involved, and the palliative care physician answered questions outside the realm of expertise of the orthopedic staff and cited evidence supporting the value of the endeavor. Second, the resident-speaker likely served as a role model. Third, the effect of incorporating templates into the admission notes was substantial. All residents who attended the presentation adopted the templates, and the nonattendees did not. Third, the process involved the residents. They completed surveys before and after the presentation.

This study had several limitations. As with any behavioral study, there are potential confounding factors. At least theoretically, presentation attendees and nonattendees were subject to the same confounders. In addition, the surveys assessed residents' perceptions about AD-CS documentation but did not specifically test the accuracy of those perceptions. Finally, other than for the internal medicine and orthopedic residents who did not attend the presentation, no true comparison group (eg, an interactive small group) was used to determine whether a different teaching method would have been more successful. However, our study goal was to determine whether information from a modern grand rounds presentation could change resident practice, and the answer to that seems to be yes.

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