

# A Structured Workshop to Improve the Quality of Resident Discharge Summaries

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## Abstract

**Background** Poor communication at hospital discharge can increase the risk of adverse events. The hospital discharge summary is the most common tool for detailing events related to hospitalization in preparation for postdischarge follow-up, yet deficiencies in discharge summaries have been widely reported. Resident physicians are expected to dictate discharge summaries but receive little formal training in this arena. We hypothesized that implementation of an educational program on chart documentation skills would result in improvements in the quality of hospital discharge summaries in a community hospital internal medicine residency program.

**Methods** A monthly, 1-hour workshop was launched in August 2007 to provide consistent and ongoing instruction on chart documentation. Guided by a faculty moderator, residents reviewed 2 randomly selected peer

chart notes per session using instruments developed for that purpose. After the workshop had been in place for 2 years, 4 faculty members reviewed 63 randomly selected discharge summaries from spring 2007, spring 2008, and spring 2009 using a 14-item evaluation tool.

**Results** Mean scores for 10 of the 14 individual items improved in a stepwise manner during the 3 years of the study. Items related to overall quality of the discharge summary showed statistically significant improvement, as did the portion of the summaries “carbon copied” to the responsible outpatient physician.

**Conclusions** The quality of hospital discharge summaries improved following the implementation of a novel, structured program to teach chart documentation skills. Ongoing improvement was seen 1 and 2 years into the program, suggesting that continuing instruction in those skills was beneficial.

*Editor’s Note: The online version of this article contains a table with responses to the pre-implementation needs-assessment survey of residents.*

## Background

Poor communication at hospital discharge can increase the risk of adverse events, medication errors, and hospital

readmission.<sup>1-4</sup> As hospital stays become shorter and increasingly complicated, and as primary care physicians become less involved in the inpatient management of their patients,<sup>5</sup> the potential for adverse events related to poor communication of discharge plans at care transition may increase.<sup>1</sup>

The hospital discharge summary is a tool commonly used to document the details of the inpatient stay for the posthospital care team. The Joint Commission<sup>6</sup> and the Society of Hospital Medicine<sup>7</sup> stress the importance of the discharge summary to enhance collaboration during patient handoffs, and the Accreditation Council for Graduate Medical Education (ACGME) requires residency programs to assess resident performance on record keeping.<sup>8</sup> However, in a study,<sup>3</sup> only 16% of internal medicine residency programs reported having a discharge planning curriculum in place. Residency programs rely on the use of templates to guide trainees in creating discharge summaries,<sup>9,10</sup> but trainees lack formal instruction<sup>11</sup> and feedback<sup>3</sup> related to that skill, and deficiencies in discharge summaries have been widely reported.<sup>12</sup>

We designed an educational program to teach residents how to effectively create a hospital discharge summary. We

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hypothesized that implementation of the educational program would result in improvements in the quality of hospital discharge summaries.

## Methods

### Setting

The intervention took place at a community hospital internal medicine residency program in Waterbury, Connecticut. There were 10 residents in each of the second- and third-year classes, and a pool of 16 faculty members rotated as general medicine ward attending physicians. There were 4 inpatient ward teams during each 4-week block, each led by a second- or third-year resident who was responsible for dictating discharge summaries for all patients admitted to his or her team. Hospital policy on summaries reflects the Joint Commission requirements.<sup>5</sup> All residents spent 9 to 11 months of each academic year onsite.

### Needs Assessment

Before the introduction of our curricular innovation, unstructured interviews with program leadership revealed that resident notes in both the inpatient and outpatient settings required considerable editing before the attending physician's co-signature. Residents were expected to dictate discharge summaries using templates provided by the medical records department. The only formal training for the residents was a 1-hour chart documentation skills session during orientation. Feedback occurred on an ad hoc basis during the course of routine clinical care or, more rarely, as a chart stimulated recall exercise.

In addition, we anonymously surveyed upper-level residents, asking them to rate their experiences and attitudes regarding chart documentation. Seventy-nine percent reported having received feedback about a discharge summary (survey provided as online supplemental material). In the free-form comments section, residents noted that discharge summaries were a useful tool from which to gather data on a subsequent hospitalization.

### Program Description

In August 2007, we launched a monthly, hour-long, structured workshop series entitled "Reviewing Effective and Accurate Documentation (READ)," during which, residents critiqued each other's chart notes.<sup>13</sup> Five types of notes (ie, hospital admission, inpatient progress, hospital discharge summary, medical consultation, and outpatient visit) were reviewed throughout the year, but only one type of note was reviewed during each session. Discharge summaries were reviewed during 3 sessions each academic year. The week before each workshop, 2 notes were selected from separate patient charts. Note selection was random, except for ensuring that no single resident had

#### What was known

Resident physicians are expected to be competent in preparing comprehensive, accurate discharge summaries that are important to patient safety, yet they receive little formal training in this arena.

#### What is new

A monthly, 1-hour chart review workshop in which residents reviewed 2 peer chart notes per session using an instrument specifically developed to increase awareness of discharge summary accuracy and quality.

#### Limitations

Single site, small sample, lack of a control group, and lower than desirable interrater agreement.

#### Bottom line

A simple, easy to implement chart review produced improvement in the quality of discharge summaries, which was sustained at 1 and 2 years.

multiple notes reviewed through the course of the year. Notes were de-identified for both patient and author information.

All onsite residents attended the workshop through all 3 years of training. Residents worked in small groups to read and analyze the first note, using instruments developed for this purpose to guide them. After 10 minutes of small-group discussion, the entire group of attendees engaged in a 15-minute open conversation moderated by a faculty member. We repeated this process for the second note.

All curricular materials including a detailed instructor's guide are available online at [www.stmh.org/read](http://www.stmh.org/read) and were peer reviewed by MedEd PORTAL.<sup>13</sup>

### Program Evaluation

We requested dictation logs for each of the 4 residents rotating on the inpatient medicine wards during May and June of 3 consecutive years (2007 [pre-READ], 2008, and 2009). Up to 3 summaries dictated by each resident during the specified rotation were randomly selected for review. Summaries for patients who died in the hospital or were transferred to another inpatient facility were excluded. We were unable to locate the dictation log for 1 resident. In all, 63 discharge summaries (21 from each year) were selected for review. Each summary was de-identified to author, patient, and date by an administrator not involved in the study, and then reviewed by 2 of 4 faculty members using a 14-item evaluation tool that was designed based on the Society of Hospital Medicine's hospital discharge checklist,<sup>7</sup> the Joint Commission's requirements,<sup>6</sup> and the Discharge Summary Evaluation Tool from Myers and colleagues.<sup>11</sup> Items were organized into 3 prespecified categories based on question content and format: presence of essential elements (yes/no), quality of essential elements (Likert scale), and overall quality of summary (Likert scale). Faculty reviewers received training on use of the evaluation tool and received all summaries simultaneously

TABLE 1 BASELINE CHARACTERISTICS OF PATIENTS, NOTES, AND AUTHORS

	2007 (n = 21)	2008 (n = 21)	2009 (n = 21)	P
Patient/note characteristic				
Age on admission, mean (SD)	59.4 (18.6)	57.9 (17.1)	55.6 (20.0)	.80 <sup>a</sup>
Male, No. (%)	8 (38)	9 (43)	9 (43)	.90 <sup>b</sup>
Length of stay (in d), mean (range)	4.4 (1–27)	5.2 (1–28)	3.9 (1–12)	.68 <sup>a</sup>
Word count, mean (SD)	800 (276)	913 (309)	880 (222)	.39 <sup>a</sup>
Time spent dictating (in min), mean (SD)	7.5 (2.8)	7.3 (2.3)	8.6 (3.5)	.28 <sup>a</sup>
Author characteristics				
PGY-3, No. (%)	7 (33)	12 (57)	12 (57)	.25 <sup>b</sup>
Male, No. (%)	16 (76)	9 (43)	12 (57)	.08 <sup>b</sup>
International medical graduate, No. (%)	19 (90)	18 (86)	21 (100)	.28 <sup>b</sup>
Career plan: primary care or hospitalist, No. (%)	17 (81)	12 (57)	15 (71)	.24 <sup>b</sup>
Career plan: subspecialty, No. (%)	4 (19)	9 (43)	6 (29)	.23 <sup>b</sup>

Abbreviation: PGY-3, postgraduate year-3.

<sup>a</sup> Using 1-way analysis of variance.

<sup>b</sup> Using Fisher exact probability test.

in August 2009. Information regarding transmission of summaries to outpatient providers and characteristics of patients and their discharge summaries were collected from the medical records department.

The Saint Mary's Hospital Institutional Review Board granted all phases of the evaluation process exemption from review and informed consent.

Data were compiled and analyzed using SPSS, version 17.0 (SPSS Inc., Chicago, IL). Interrater reliability was determined by Krippendorff  $\alpha$ . Comparisons between the groups were performed by 1-way analysis of variance and Fisher exact probability test, with significance defined at  $P < .05$ .

## Results

There were no differences in demographic characteristics of the authors of discharge summaries or of the patients during the 3 years of the study (TABLE 1). Interrater reliability was  $\alpha = 0.65$  for the 4 yes/no items related to the presence of essential elements, 0.44 for the 7 Likert scale items indicating the quality of essential elements, and 0.65 for the 3 Likert-scale items measuring overall quality of the summary.

Mean scores for 10 of the 14 individual items (71%) improved in a stepwise manner during the 3 years of the study, as did the combined scores for 2 of the 3 (67%) of the prespecified item subtypes (TABLE 2). Most discharge summaries contained the suggested components in 2007, before program implementation, and the mean score for the

item subtype related to presence of essential elements did not show statistical improvement ( $P = .10$ ). However, residents were significantly more likely to include all of the essential elements ( $P = .02$ ) and use headings to separate sections of the note ( $P = .048$ ) after program implementation (TABLE 2).

Documentation of communication with the outpatient physician occurred in few of the summaries and did not improve after the educational intervention. However, query of the medical records department revealed that the percentage of summaries actually carbon copied to the responsible outpatient physician increased from 47% to 71% to 86% during the 3 years of the study ( $P = .03$ ).

## Discussion

We found that the quality of hospital discharge summaries improved following the implementation of a structured program to teach chart documentation skills. The workshop resulted in improved discharge summary quality because we emphasized the importance of communication at the transition of care for hospitalized patients, which has been reported to have an effect. Forster and colleagues<sup>1</sup> demonstrated that 59% of preventable or ameliorable peridischARGE adverse events were directly related to lapses in communication. Other authors have shown the effect of hospital transition-related medical errors on readmission,<sup>4</sup> and the potential effect that communication<sup>14</sup> and discharge summary availability<sup>15</sup> can have on that outcome.

TABLE 2 COMPARISON OF RESPONSES TO ITEMS ON DISCHARGE-SUMMARY EVALUATION INSTRUMENT<sup>a</sup>

	2007, mean (SD), n = 21	2008, mean (SD), n = 21	2009, mean (SD), n = 21	p <sup>b</sup>
Set 1: Presence of essential elements <sup>c,d</sup>				
Combined mean	0.87 (0.32)	0.89 (0.29)	0.92 (0.26)	.10
Essential elements present	0.91 (0.26)	0.95 (0.20)	0.97 (0.14)	.02
Essential elements separated by headings	0.86 (0.32)	0.98 (0.11)	1.00 (0)	.048
Procedures listed	1.00 (0)	0.95 (0.23)	1.00 (0)	.92
Communication with outpatient MD documented	0.37 (0.47)	0.36 (0.45)	0.33 (0.44)	.95
Set 2: Quality of essential elements <sup>d,e</sup>				
Combined mean	3.32 (0.66)	3.57 (0.49)	3.83 (0.47)	.01
History section effective	3.17 (0.95)	3.41 (0.82)	3.98 (0.58)	<.01
Pertinent physical exam documented	3.12 (1.22)	3.83 (0.78)	3.83 (0.56)	.02
Pertinent diagnostic studies documented	3.62 (0.80)	3.95 (0.57)	4.12 (0.38)	.03
Hospital course effective	2.98 (1.02)	3.21 (0.78)	3.79 (0.68)	<.01
Hospital course supports diagnoses listed	3.50 (0.81)	3.62 (0.77)	3.69 (0.73)	.72
Discharge condition evident	3.57 (0.71)	3.36 (0.78)	3.64 (0.74)	.44
Length appropriate for complexity of illness	3.26 (0.80)	3.62 (0.61)	3.79 (0.56)	.04
Set 3: Overall note quality				
Combined mean	2.87 (0.89)	3.21 (0.58)	3.63 (0.58)	<.01
Summary well written <sup>e</sup>	2.83 (0.98)	3.00 (0.81)	3.69 (0.75)	<.01
Note would help me care for patient at follow-up <sup>e</sup>	3.43 (0.90)	3.83 (0.47)	4.00 (0.42)	.01
Rate overall quality on scale <sup>f</sup>	2.36 (0.98)	2.79 (0.71)	3.21 (0.77)	<.01

Abbreviation: MD, doctor of medicine.

<sup>a</sup> Items appear in the order listed on the evaluation instrument.

<sup>b</sup> Using 1-way analysis of variance.

<sup>c</sup> Items in set 1 were rated yes/no and scored as yes = 1; no = 0.

<sup>d</sup> Essential elements included primary diagnosis, history of present illness, past medical history, physical exam, hospital course, pending results requiring follow-up, discharge medications, and discharge follow-up visit plan.

<sup>e</sup> Rated on a 5-point Likert scale ranging from 5 = strongly agree to 1 = strongly disagree.

<sup>f</sup> Rated on 10-point Likert scale from 10 = perfect to 1 = terrible, with scores collapsed into 5-point scale for calculations.

Residents' exposure to the literature on care transitions may have motivated them to improve their chart documentation and to be more deliberate about sending a carbon copy of summaries to outpatient physicians.

Residents benefited from receiving feedback on their notes. Other authors have demonstrated that chart review and feedback can positively affect resident documentation.<sup>16,17</sup> Because individual feedback to each resident was minimal, with only 6 discharge summaries reviewed during the course of each academic year, we conclude that education was enhanced by the novel structure of the workshop. Residents were engaged in active learning through peer assessment, a well-described classroom strategy for adult learners<sup>18</sup> that has been shown

to be effective for both recipients<sup>19</sup> and providers<sup>20</sup> of feedback.

The READ workshop provided a forum for education and assessment regarding resident medical record keeping, while addressing the ACGME competencies<sup>7</sup> of interpersonal and communication skills, systems-based practice, and practice-based learning and improvement with minimal trainee or faculty time commitment.

Despite our high baseline rate of inclusion of essential elements and no significant improvement in that metric, we found improvement in the overall quality of the notes, suggesting that meeting basic requirements on a dictation template does not translate to a high-quality discharge summary. Residents should be instructed to create

discharge summaries that exceed the Joint Commission's requirements by including specific information that will be relevant to outpatient providers (eg, rationale for decisions made, pending results, contingency plans). The Society of Hospital Medicine discharge checklist<sup>7</sup> may serve as a more useful training tool.

Our study had several limitations including single-site intervention, lack of a control group, and small sample size, which translated into suboptimal interrater agreement scores. The improvement we detected in carbon copy rates to outpatient providers was unrelated to the evaluation tool and, therefore, not affected by interrater agreement. Finally, it is unclear whether the improvements we detected during training will persist once trainees are in practice.

### Conclusions

Our findings show that through peer assessment and faculty emphasis on the importance of the discharge summary, residency programs can equip residents with skills to improve their discharge summaries beyond typical template use.

### References

- Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med.* 2003;138(3):161–167.
- Bergkvist A, Midlov P, Hoglund P, Larsson L, Bondesson A, Eriksson T. Improved quality in the hospital discharge summary reduces medication errors. *Eur J Clin Pharmacol.* 2009;65(10):1037–1046.
- Aiyer M, Kukreja S, Ibrahim-Ali W, Aldag J. Discharge planning curricula in internal medicine residency programs: a national survey. *South Med J.* 2009;102(8):795–799.
- Moore C, Wisnivesky J, Williams S, McGinn T. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. *J Gen Intern Med.* 2003;18(8):646–651.
- Meltzer DO, Chung JW. US trends in hospitalization and generalist physician workforce and the emergence of hospitalists. *J Gen Intern Med.* 2010;25(5):453–459.
- The Joint Commission. Standard RC.02.04.01: The Hospital Documents the Patient's Discharge Information. <https://amp.jcrrinc.com/Login.aspx>. Accessed December 21, 2010.
- Halasyamani L, Kripalani S, Coleman E, Schnipper J, van Walraven C, Nagamine J, et al. Transition of care for hospitalized elderly patients: development of a discharge checklist for hospitalists. *J Hosp Med.* 2006;1(6): 354–360.
- Accreditation Council for Graduate Medical Education. ACGME Program Requirements for Graduate Medical Education in Internal Medicine. July 1, 2009. [http://www.acgme.org/acWebsite/downloads/RRC\\_progReq/140\\_internal\\_medicine\\_07012009.pdf](http://www.acgme.org/acWebsite/downloads/RRC_progReq/140_internal_medicine_07012009.pdf). Accessed December 21, 2010.
- Flyer B, Rubenstein LZ, Robbins AS, Wieland GD, Henry D, Cugalj N. An intervention to improve the hospital discharge summary. *J Med Educ.* 1988;63(5):407–409.
- Rao P, Andrei A, Fried A, Gonzalez D, Shine D. Assessing quality and efficiency of discharge summaries. *Am J Med Qual.* 2005;20(6): 337–343.
- Myers JS, Jaipaul CK, Kogan JR, Krekun S, Bellini LM, Shea JA. Are discharge summaries teachable? *Acad Med.* 2006;81:55–58.
- Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. *JAMA.* 2007;297(8):831–841.
- Talwalkar JS, Ouellette JR. A structured workshop to improve chart documentation among housestaff. Paper presented at: the Pediatric Academic Society national meeting; May 2009; Baltimore, MD. MedEdPORTAL; 2009. <https://www.mededportal.org/publication/5095>. Accessed January 16, 2012.
- Jack BW, Chetty VK, Anthony D, Greenwald JL, Sanchez GM, Johnson AE, et al. A reengineered hospital discharge program to decrease rehospitalization. *Ann Intern Med.* 2009;150(3):178–187.
- van Walraven C, Seth R, Austin P, Laupacis A. Effect of discharge summary availability during post-discharge visits on hospital readmission. *J Gen Intern Med.* 2002;17(3):186–192.
- Opila DA. The impact of feedback to medical housestaff on chart documentation and quality of care in the outpatient setting. *J Gen Intern Med.* 1997;12(6):352–356.
- Harchelroad FPJ, Martin ML, Kremen RM, Murray KW. Emergency department daily record review: a quality assurance system in a teaching hospital. *QRB Qual Rev Bull.* 1988;14(2):45–49.
- Bonwell CC, Eison JA. *Active Learning: Creating Excitement in the Classroom.* Washington, DC: George Washington University; 1991. ASHE-ERIC Higher Education Report No. 1.
- Keely E, Myers K, Dojeji S, Campbell C. Peer-assessment of outpatient consultation letters: feasibility and satisfaction. *BMC Med Educ.* 2007;7:13.
- Dochy F, Segers M, Sluijsmans D. The use of self, peer and co-assessment in higher education: a review. *Stud High Educ.* 1999;24:331–350.