



“Conventional” dictated versus database-generated discharge summaries: timeliness, quality and completeness

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Dr. Carl van Walraven and colleagues present in this issue (page 319) the first randomized comparison of conventional, dictated hospital discharge summaries and a form of discharge summary collated from a written database of information collected during the patient's hospital stay.¹ The trial was conducted in an academic internal medicine inpatient service at the University of Ottawa. The authors offer the following arguments for conducting a randomized study in this field. First, in previous studies, few investigators used the patient's community-based physician as the arbiter of summary quality. In addition, this study is unique in that the authors conducted concurrent comparisons of summary types, while incorporating randomization. Finally, previous studies examined only limited aspects of discharge summary type, and none considered the possibility of a Hawthorne effect.

Although some researchers have explored issues related to the content and accuracy of discharge summaries, more have examined the important issue of timeliness. Timeliness and the inclusion of information that is highly pertinent for follow-up appear to be the critical determinants of the effectiveness of discharge summaries. Shorter hospital stays, which imply an increased need for care after discharge, and the continuing trend (at least in urban environments) toward the provision of inpatient care by “hospitalists” (physicians who work exclusively in the hospital setting) reinforce the importance of the timely generation of a complete discharge summary.

The trial involved the collection of primary data on 3 forms placed in the patient's chart during the hospital stay pertaining to preadmission, hospital and discharge information. Housestaff (physicians in training who treat patients in hospital) completed these forms during the hospital stay. The principal investigator collated this information into a structured summary. The summaries for the control group consisted of dictated letters. Outcomes included an overall assessment of quality. Physicians were asked to rate the summary on a Likert scale based on the following definition: “A high-quality discharge summary efficiently communicates information necessary for continued patient care.” Other outcomes as-

essed were completeness, organization and timeliness (defined as time from patient discharge to receipt of the summary by the community physician). The authors assessed completeness by means of a chart review, along 21 dimensions identified in previous studies. Finally, house-staff preferences regarding the 2 methods were elicited.

Overall, the study's most important finding is that the summaries generated from a clinical database were produced significantly sooner than the traditional, dictated summaries. Of the summaries generated within 4 weeks of discharge, 95% were completed in the first week after discharge in the database group, as compared with 80% in the dictation group. The summary was completed within 4 weeks after discharge for 80% of the patients in the database group but for only 57% of those in the dictation group. The specific time pattern of the production of the summaries may have been influenced by the mechanism for implementing the database system in this particular study setting, as the principal investigator was responsible for collating the data collection forms and producing the summaries. On the other hand, as the authors point out, it is likely that properly trained health records analysts could complete this task efficiently in a variety of settings.

Ten content items were more commonly cited in database-generated summaries, whereas only 4 content items were listed more frequently in dictated summaries (see Table 2 of the authors' article). Specific items on which dictated summaries excelled included the patient's social history, the admitting diagnosis, the record of inpatient consultations and the patient's functional status at discharge. Items for which database-generated summaries were more complete included preadmission medications, extreme blood test results (indicating the severity of the patient's illness), the discharge diagnosis, community services needed, pending laboratory tests and specific post-discharge recommendations. Furthermore, when examined in this fashion, the differences between the 2 methods (specifically along the 4 latter content items) have the potential to be clinically significant.

Although it seems clear that the database system is the hands-down winner with regard to timeliness and that the



picture concerning summary completeness contains results of potential clinical importance, neither system led to the universal inclusion of many seemingly valuable pieces of information. For instance, only 54% of the database-generated summaries contained specific recommendations on discharge. Similarly, pending laboratory tests, likely important in the appropriate follow-up of the patient, were listed in only 41% of the summaries in the database group. The findings were similar for community services needed (41%), results of radiology tests (47%) and diagnostic blood tests (30%), the occurrence of complications (59%) and new medical therapy (49%).

The authors have demonstrated in a rigorous randomized context the ability of a particular paper-based database discharge summary system to produce timely summaries that community-based physicians rate as essentially as good as traditional, dictated summaries. However, considerable further effort appears to be needed to improve summary completeness, for any known system of summary production. Furthermore, future studies should pursue the issue of the effectiveness of discharge summaries in the follow-up physician's hands. The attribute of completeness appears to be a critical one for any such study. Perhaps community physicians should be asked what information they felt they needed but was lacking. Further investigation is needed to determine the importance of transmitting certain specific items of information, the effects of their inclusion or omission, and the role of any summary produc-

tion system in influencing these. In addition, the thorny issue of appropriate inclusion of preadmission information needs to be addressed, as does the challenge of identifying the patients' community network (allied health workers, nurses, community-based consultants, social workers and others) in addition to their regular physician, if they are fortunate enough to have one.

The authors have made an important contribution to the long-standing problem of producing complete and timely hospital discharge summaries. However, their explorations and observations make it clear that we still have a long way to go in the transmission of timely, complete and useful information to the physicians responsible for follow-up of patients after discharge from hospital.

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Reference

1. Van Walraven C, Laupacis A, Seth R, Wells G. Dictated versus database-generated discharge summaries: a randomized clinical trial. *CMAJ* 1999;160(3):319-26.

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The importance of being Osler

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On July 12, 1999, we mark the 150th anniversary of the birth of William Osler, Canada's best remembered and most revered physician. His stature in the history of medicine is beyond dispute, but how exactly do we account for it? Did his clinical observations assure him this standing? His teaching methods? His articulation of bedside practice? Did his prototypical textbook, *The Principles and Practice of Medicine*, assure him unparalleled influence, or can the Osler phenomenon be attributed to a compelling personality that made others admire and seek to imitate him? What exactly was the catalytic spark between the historical moment and the man?

The Osler sesquicentennial will be celebrated by the American Osler Association at their meeting in Montreal from May 4 to 8. Festivities will be held at Osler's birthplace in Bondhead, Ont. on July 12, and McGill University will pay tribute to its most famous medical graduate at

an Osler Education Seminar and special convocation from Oct. 27 to 30. *CMAJ* will be making its own splash with a special Osler issue in October. We welcome your proposals for original articles on Osler's life and works. We also invite readers to contribute brief descriptions of physical signs that have been named after Osler or whose discovery is attributed to him. We are looking for articles 250 to 300 words in length accompanied by a high-quality photograph or illustration. Documentation of the original attribution to Osler is essential. We will select the best, liveliest and most edifying for publication, but submissions received by April 5 will have a greater chance of acceptance. Contributors should indicate in a cover letter that their submission is intended for the Osler issue.

Dr. Flegel is an Associate Editor of CMAJ and co-editor of the Osler special issue. Dr. Hoey is Editor-in-Chief of CMAJ.