Development and validation of quality criteria tool for electronic discharge summaries to improve care transitions for patients from hospital care to primary care

Savvopoulos S, Sampalli T, Harding R, Salunkhe A, Janes S, and Blackmore G

Abstract:

Background: Timely, precise and relevant communication between hospital-based clinicians and primary care providers (PCP) at discharge is essential to ensure safe transitions from hospital back to the community. However, discharge summaries frequently utilize highly variable formats and dissemination processes, lack critical data and are often not received in an appropriate timeframe or may not even reach the PCP at all, this way resulting in significant continuity gaps and adverse outcomes. Lack of timely follow-up has generally been associated with increased hospital readmissions and a trend toward a longer length of stay with our local evidence supporting the same findings. In a pilot implementation project, we developed and utilized a standardized electronic discharge summary (e-DC) initially in a small group of hospitalists. E-DC utilizes an embedded risk of readmission calculation index named 'LACE' which, for the purpose of our study, serves as a prompt for direct communication between care providers at discharge. As such contact is not always easy or feasible to accomplish for all patients being discharged from a busy hospital, the aim is that LACE may serve to establish a simple and practical method of triaging patients that would most benefit from such direct communication and from intense post-discharge care. The early success and broad expansion of the pilot implementation project in a health authority in Nova Scotia, Canada is considered to be a result of the collaborative efforts of leadership groups in the health authority, hospital clinicians, support departments (IT, e-Health, Pharmacy, Performance Excellence, Legal, District Medical Advisory Committee), and PCPs. Building upon the success of this initiative, a recent study is developing a quality framework for e-DCs to improve quality and appropriateness of content and process at care transitions.

Methodology: In this CMPA funded study, using a triangulation methodology and mixed methods approach, the research steps towards the global objective include development and validation of quality criteria for discharge summaries based on evidence, stakeholder feedback (PCPs and hospitalists) and a retrospective chart audit process (n=150). SAS 9.3 software was used to perform statistical analysis. Additionally, the ultimate impact of high quality discharge summaries (as determined using our quality criteria through the chart audit process of the study) on readmission rates and ED visits/utilization in the 30 days post discharge will be determined. Finally, the effectiveness of the combined risk assessment component in the e-DC will be assessed by examining readmissions and post discharge ED visits/utilization for patients with high LACE score for whom the attending followed the prompt to call and alert the PCP and

arrange post DC arrangements, patients with high LACE score for whom the attending did not call to the PCP, and finally patients with low LACE score.

Results: Results from our development and validation phases will be presented which include surveys and focus group feedback from stakeholders, outcomes of evidence and chart review process and the quality criteria tool. Surveys that explored the quality dimensions of relevance to successful care transitions were administered to physicians who were e-DC users (n=47) and physicians in the community who were referring physicians or end users of the summaries (n=18). Physician users of e-DCs scored the quality of the summaries as follows: >60% of users with a score >7 for organization, 63% with a score > 7 for completeness and 63% with a score > 7 for conciseness. End users of e-DCs ranked higher with close to 70% of users providing a score of >7 for the same domains of quality. Greater than 75% of the end users also indicated preference for e-DCs over handwritten or dictated summaries. A total of 150 charts were reviewed in the retrospective chart audit process. One chart was excluded from data analysis as we could not score due to absence of information in the discharge summary. Mean score of 149 charts was observed to be 71.57 with 95% confidence interval of (68.78 – 74.37). Further, we grouped discharge summaries into electronic (n=77) versus dictated and hand written (n=72). The mean summary scores for electronic and dictated-handwritten summaries were 85.12 (95% confidence interval 83.60 – 86.63) and 57.09 (95% confidence interval 54.11 – 60.07) respectively.

Conclusions: Effective care transitions are crucial and contribute to high quality and safe health care. Safe care transitions can improve health outcomes, reduce risks for patients and improve provider and patient satisfaction. In this mixed methods study, a quality criteria tool to improve the structure and quality of the content of e-DCs has been developed. Preliminary results from the study are promising and support the importance of quality in safe and effective care transitions.

Presenting Author Contact Information:

Dr. Stavros Savvopoulos
Medical Director, Hospital Care, Central Zone,
Nova Scotia Health Authority,
Mumford Professional Centre
6960 Mumford Road, Suite 0265
Halifax, NS B3L 4P1
Email: Stavros.savvopoulos@nshealth.ca
Telephone 902-487-0615 | Fax 902-454-7107

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Submission Track: Quality and Safety in Hospital Medicine Track

Please consider for oral presentation

Results from survey:

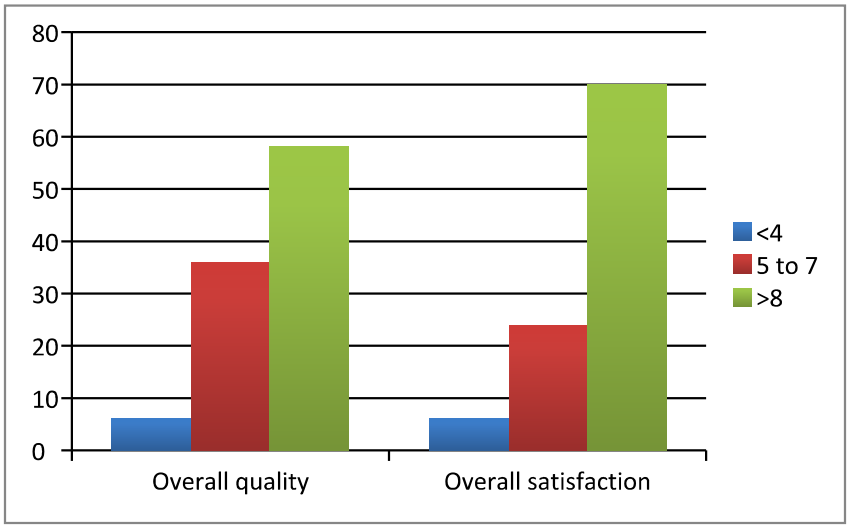

Figure 1 Feedback from referring physician survey (n=17) regarding e-DC

** <4 = poor quality, 5-7 = average quality, >8 = above average quality*

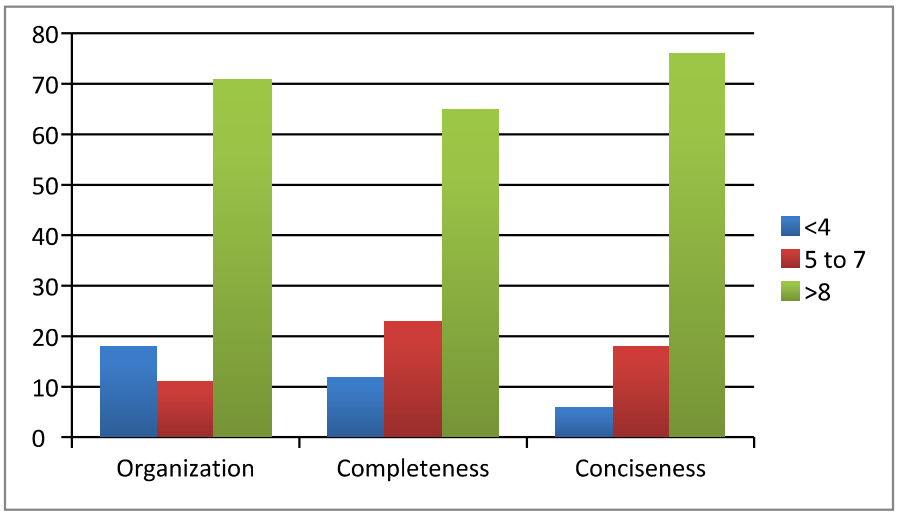

Figure 2 Feedback from referring physician survey (n=18) regarding quality domains in e-DC

** <4 = poor quality, 5-7 = average quality, >8 = above average quality*

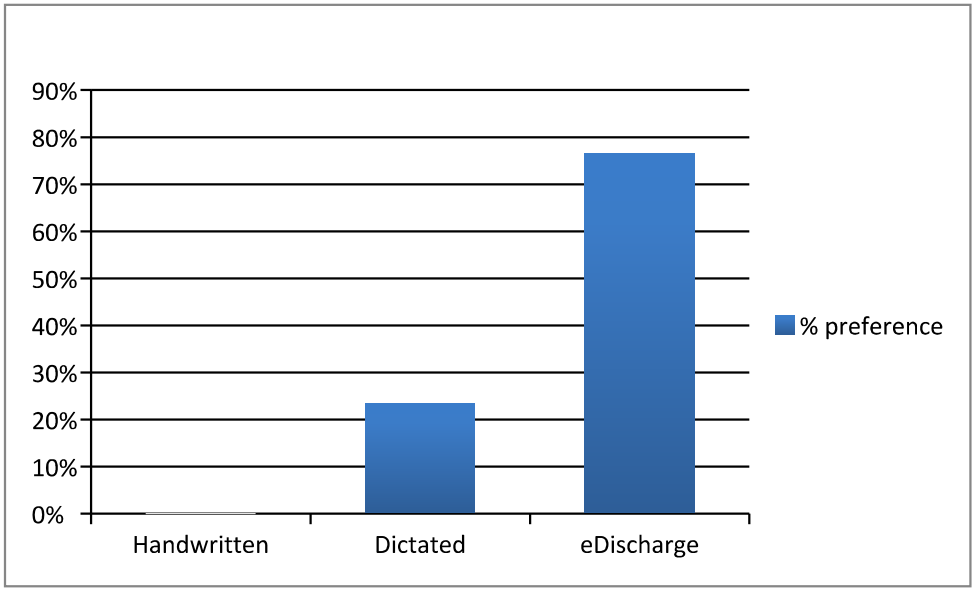

Figure 3 Preference indicated by referring physicians

Results from chart review:

Table 1 Quality score results from chart audit – comparing EDS with handwritten/ dictated versus e-DC

Summary type	N	Mean	Std Dev	Lower 95% CL for Mean	Upper 95% CL for Mean
D/HW	72	57.09	12.67	54.11	60.07
e-DC	77	85.12	6.68	83.60	86.63

Table 2 Quality score for length of e-DC

Page Length	N	Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
1-2 Page	36	60.57	57.40	63.74
1/2 - 1 Page	18	41.32	36.90	45.73
2-4 Page	93	81.49	79.41	83.58
4-6 Page	2	80.75	25.98	135.52