

Title: Comparing Paper vs Electronic Transition of Care Methods in the Emergency Department

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Introduction: Transition of Care (TOC) is the process of handing off between shifts in the Emergency Department (ED). Miscommunication during this process is a major source of medical error. Despite that, 57% of EM physicians report that their EDs do not implement a standardized TOC tool. Through this study, we are able to illicit physicians' feedback so that this information can inform our efforts to optimize standardized TOC.

Purpose: The purpose of the study is to illicit quantitative feedback from physicians on paper TOC checklists (pTOC) vs electronic TOC checklists (eTOC), compare the utility of both formats and analyze the results in order to optimize workflow and patient care.

Methods: Physicians in the ED were asked to fill out a survey to gauge their satisfaction with the implemented TOC system (N=17). The survey was administered through an anonymous online website. Attitudes towards pTOC vs eTOC methods were compared using one-tailed t-tests. 347 eTOCs and 419 pTOCs were used to compare the utility of the two modalities. Checklist completion was defined as filling out all of the fields on the form. The association between format and completion rate was calculated with a Chi-Square test. Only 291 eTOCs and 363 pTOCs were used to compare TOC time due to insufficient information.

Results: Physicians of different levels of training completed the survey (3 PGY-Is, 5 PGY-IIs, 4 PGY-IIIs, 1 EM Fellow, and 3 Attending Physicians). The average rate of satisfaction with the pTOC process was 2.67/5 (53.40%). Physicians found that an eTOC process would be more useful to patient care than the pTOC process ($p=0.04$). They also thought that an eTOC process would be more useful to workflow than the pTOC process ($p=0.03$). Overall, 23.53% of physicians preferred the pTOC, 64.71% preferred an eTOC, and 11.76% preferred them equally. 29% of physicians reported that they filled out the pTOCs a little or not at all when it was their responsibility to do so. They also said that they observed others filling out the pTOCs only a little 24% of the time. After implementing an eTOC, the paper and electronic formats were compared. The time it took to complete the TOCs decreased when using the eTOC ($p<0.01$) and the rate of completion increased from 18% to 37% ($p<0.01$).

Conclusion: On average, physicians' satisfaction with pTOC formats is low and about a quarter report not filling out the pTOC or filling them out a small amount. eTOC formats are more useful for workflow and patient care, decrease TOC care, and increase form completion rate. Using QR codes made the electronic forms easy to access and the information became easy to track for leadership to assess resident TOC. In the future, eTOC formats can organically make a transition towards interprofessional TOC and teaming.