Aligning Complex Processes and Electronic Health Record Templates:
A Quality Improvement Intervention on Inpatient Interdisciplinary Rounds

Take Away Points

- The study's main intervention was to redesign an interdisciplinary note template, with accompanying resident educational materials in order to increase note documentation rates and meet regulatory standards.
- A well-functioning multi-disciplinary team performs care coordination discussions in highly variable ways depending on both characteristics of personnel and patients, suggesting leading and documenting this collaborative work requires a heuristic rather than algorithmic approach.
- Interdisciplinary notes designed to support patient-specific communication and problem-solving processes lead to improved note completion and decreased the time needed to complete documentation.

The Issue

Interdisciplinary rounds (IDR), also referred to as "interdisciplinary team meetings," are a desirable standard of care in the inpatient medical setting. The objective of IDR is to bring together disciplines responsible for providing patient care, with the aim of improved and *standardized* communication during the inpatient stay yielding better care transitions at discharge. In addition, the Joint Commission (TJC) has a "Provision of Care, Treatment, and Service" standard which requires that interdisciplinary care be documented.

Several studies document heterogeneity of purpose, settings, and measures related to IDR. Although prior research examined structured IDR which employed standardized checklist formats, their relevance in appropriately documenting IDR work is questionable.

The objectives of this study included: (1) observe IDR in order to identify key tasks and content that should be documented, and (2) explore barriers and facilitators of IDR documentation with the key outcome of interest being documentation rate. In addition, IDR team member satisfaction and participation, discussion time and balancing metrics (i.e., excess bed days of care, length of stay, and 30-day readmissions) were also assessed.

Study Methods and Design

A Quality Improvement (QI) project consisted of structured observations and measurement of IDR with iterative Plan-Do-Study-Act (PDSA) cycles of change involving the workspace, education and training materials, in addition to revision of the IDR documentation process and format. This study was conducted at two medical inpatient units at the Iowa City Veterans Administration (VA) hospital utilizing three Internal Medicine resident teams with a total maximum census of 42 patients. IDR teams were led

by resident physicians with representation from nursing, social work, and supporting services such as physical therapy or pharmacy.

The patient population served by the three resident teams was predominantly male (96%), older (mean age=65.5 years), and rural home (65%). The most common diagnoses were heart failure, community acquired pneumonia, and chronic obstructive pulmonary disease. The resident teams admit 200-250 patients per month with an average inpatient length of stay being 3.7 days; 65% are acute admissions and 35% are observation status.

The VA QI team utilized a structured data collection worksheet during the IDR observations. The primary outcome measure was the IDR note completion index, calculated as the number of IDR notes completed per day (Monday through Friday) divided by the ward days of care calculated for that day. The project's timeline consisted of three PDSA cycles following baseline observation: (1) introduction of a new white board system to visually depict patients' status; (2) development and refinement of resident education materials, including handouts and pocket cards outlining the resident role during the IDR which followed the content of the Electronic Health Record (EHR) note template; and (3) redesign of the IDR note template for EHR. Analyses included pre- and post-intervention note completion rates using statistical process control (SPC) methods, specifically p-charts.

Key Findings and Limitations

- The redesigned IDR note led to improvements in completion rates from 27% (observed over 85 days at baseline) to 69% (observed over 115 days post-intervention). Despite daily variability, sustained completion rates were measured five months post-intervention. The authors attribute this improvement to the redesigned IDR note template which was: (1) easy to complete in real-time or shortly thereafter and (2) was created to mirror resident education on how to lead rounds, which may have made note completion more efficient.

  "Variability in fact may be a positive characteristic of complex team process; efforts to improve these processes may need to balance standardization and flexibility in order to maximize team performance."

- The redesigned IDR note template was based on a heuristic (simple, efficient decision model based on experience), rather than an algorithmic checklist. The authors noted that high-quality rounds were brief and highly variable, depending on the patient-centered discussion. A heuristic checklist allowed the team to develop provisional action plans without being prescriptive, allowing for free text.

- Interdisciplinary teams reported a high level of satisfaction with rounds, citing an important goal of avoiding last minute requests and referrals as a continuous improvement area.

- Limitations: This study did not systematically measure team function or utility of the redesigned IDR template, however the authors did observe it being used by medical personnel. Resident attitudes, educational outcomes, and direct patient-related clinical outcomes were not assessed.

Final Thoughts

- Performing care coordination discussions in highly variable ways can be seen with what appears to be a high-functioning interdisciplinary care team.
- Utilizing a template following a heuristic rather than algorithmic script with opportunity for free text may lead to improved IDR documentation rates, thus meeting regulatory standards in addition to supporting communication and problem-solving processes of an interdisciplinary group.