Improving Communication about Hospitalized Referral Patients

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Introduction. In October 1998, Brigham and Women’s Hospital (BWH) introduced the “Communication of Service Standards for Referring Physicians.” The goal of this initiative was to improve the responsiveness of BWH specialist physicians to the needs of referring physicians (RP’s), and to facilitate this communication process. According to the standards, direct communication between BWH specialists and RP’s is required when various non-routine clinical events happen to referred patients.

The BICS (Brigham Integrated Computing System) inpatient referral advisory project was designed to improve compliance with the standards, to remind busy BWH specialists about these important inpatient events, and to facilitate their regular communication with referring physicians.

Strategy. Computer-based advisories are generated when a referral patient has any of the following events: urgent admission to the hospital; surgery; transfer to the ICU (except post-op); or death.

The advisory is sent in the form of a Clinical Mail message (a form of secure e-mail that has higher priority than regular mail) sent to the BWH specialist who received the referral and admitted the patient. The various standard text messages (depending on the event) describe the inpatient event and urge the specialist to contact the RP. Each message also includes basic demographic information about the patient (name, age, sex, medical record number), admission information, (admitting diagnosis, admission date, room number), and the referring physician’s name, address, and phone number.

Batches of clinical e-mail are sent three times a day. Each event generates its own message, except for surgery events. Since one surgeon may do many procedures each day, surgery referral advisories are grouped by BWH specialist and sent as a daily report.

Implementation. The inpatient referral advisory project was implemented through the BICS Event Engine, a rule-based automated alerting system. The information about inpatient events is collected by a background process three times a day and passed to the Event Engine program. It triggers predefined rules (one rule per event type) and also checks whether the patient is on referral, based on data captured in the Admitting subsystem. If all conditions are satisfied, a clinical e-mail will be generated. When the event is a surgical procedure, the alert is stored in the daily report queue and sent at the end of the day.

Results. The inpatient referral advisory project went live in January 1999. In the first two months of operation, 1085 alerts (988 e-mails) were generated and sent to 113 BWH specialists. The largest number of e-mails (457) were for surgical procedures on referral patients, followed by urgent admissions (332), transfers to the ICU (169), and deaths (32).

One initial concern was whether e-mail was a viable format for communicating to busy BWH specialists. During the first month of live use, 77% of specialists who received advisories read them within 24 hours; in the second month, this increased to 83%. Satisfaction among BWH physicians with the advisories is high; the advisories helped them remember which patients were sent on referral, and made it easier for them to contact the RP. At present, the actual response to the advisories (how many calls are made to RP’s) is not being tracked; this is under consideration in the referral and marketing departments. Some physicians requested that they be allowed to designate an assistant who would also receive the referral advisories; this function has also been developed.

Conclusion. Rule-based event processing systems can be used to detect complex inpatient events, and to deliver them in a timely fashion to specialists who receive referrals. The specialists report that the advisories are helping to facilitate communication with the referring community, providing overall quality of care improvement.

References
