Physician Adoption of an Information System in an Integrated Health Region

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Abstract
We describe the strategies used to engage organizational and physician leadership through design, preparation, and support to achieve an inpatient Computerized Physician Order Entry (CPOE) rate over 70% by 1,700 physicians.

Introduction
We implemented an acute care information system (order entry/management of all inpatient orders, order sets, alerts, medication charting, lab and imaging results, transcribed documents and flow sheets) for 2,000 beds on 3 sites. A 2-year regional design preceded “big bang” 1-day activations at each site with 5 months between the first and last site. Users include 1,250 staff physicians (most fee-for-service funded), 450 residents and 12,000 staff. This paper describes how we ensured that clinical users developed a sense of ownership of, accountability for and satisfaction with the system and how we achieved minimally intrusive high quality clinical decision support. Outside the scope of this paper is work to achieve a highly usable design, stable platform, adequate response time and non-physician staff use.

Methodology
Strategies included: Formal and informal medical and administrative leadership engagement, responsiveness to local culture, tailored engagement style to measured physician attitudes, modest compensation for training, design and support work, social networking, communication, progressive increase in physician involvement in project activities over time, and continuous evaluation and improvement of our engagement process.

The Medical Advisory Board established a goal of 100% CPOE within 18 months of activation.

Department heads appointed physicians to Clinical Informatics (16 for 5 paid full-time equivalents) as well as physicians for order set and alert design. In addition, heads were kept informed of work by volunteers from their department. We ensured input from a mix of medical content experts and busy clinicians highly respected by colleagues who could act as champions and ensure an efficient design.

Informatics physicians constantly communicated the project goals at existing venues (rounds, hallway and lounge chats, physician newsletter) and visited their department heads regularly to ensure alignment and to assist with timely completion of order sets and training. We ensured adequate resources who had deep understanding of all clinical areas and product-enabled design to help address stated needs. As the project evolved, engagement widened to include ever more physicians in a deliberate way e.g., high-profile physicians resistant to CPOE in the past were asked to respond to design or would be given special training attention. All physicians were encouraged to “touch the keys” though this was challenging when the design was very dynamic. We continuously assessed physician engagement to maximize the chances of all departments and all sites being covered.

Results
Over 60 evidence-based order sets in 4 areas (anticoagulation, diabetes, surgical infection, myocardial infarction). 1200 clinical and convenience order sets.

Over 80% physicians trained by activation. Typically by 1-on-1 in physician lounge or instructor-led class of single specialty. 100 physician superusers during largest activation, available for 1-2 weeks

Direct CPOE rate within 2 weeks at all 3 sites, even the one without past legacy CPOE system: All orders >70%; resident orders >85%; medication orders: >79%.

Conclusion
Active physician engagement in design and preparation with progressive increase in number involved over time and alignment between bedside users and their leadership resulted in high levels of satisfaction and use of CPOE.

References