Purpose essay

Technology, Innovation

Executive Summary of a Hospital's Computerized Prescriber Ordering System Hospital Project

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The purpose of the computerized prescriber ordering system (CPOE) project is to reduce the relative risk for medication errors and associated adverse events and costs at the hospital through implementation of an electronic prescribing (e-prescribing) system. The ultimate goal of the project is to improve the safety, value, and quality of patient care. Reduction of medication errors is thus an intermediate goal in the pursuit of the overall goal. The purpose of the project is aligned with the hospital's mission. The hospital's mission is to provide quality health care which is accessible to all, cognizant of the intrinsic value and dignity of all individuals, to create a healing environment where health workers can work together in providing personalized care, and to be a leader in the development and implementation of quality health care programs. Another major goal of the project is to ensure compliance with stage 1 meaningful use eligibility. Implementation of CPOE is an integral requirement of the 2009 Healthcare Information Technology for Economic and Clinical Health Act (HITECH) and all hospitals that will not have achieved this standard by 2015 will be penalized (Radley et al., 2012).

Target Population

The project is targeted at all health care workers working in the hospital who are involved in the prescription, ordering, issuing, monitoring, and

administration of medications in the hospital. They include specialists, physicians, nurses, and pharmacists.

Benefits of the Program

Statistics from the Institute of Medicine (IOM) suggest that hospitalized patients are at risk for at least 1 medication error every day. The IOM also estimates that approximately a quarter of all medication errors are preventable (Berger & Kichak, 2003). CPOE systems allow electronic prescribing and include other functions such as clinical decision support, alerts on harmful drug interactions, and drug dosage supports. Accumulating evidence from an array of studies suggests that these systems help reduce potential medication errors. A meta-analytic study by Radley et al. (2012) concluded that use of CPOE to process prescription drugs decreases the probability of errors for each drug by 48%. Based on this data, the authors estimated that utilization of CPOE in US hospitals would reduce medication errors by 12. 5% which translates to 17. 4 million averted medication errors per year. Another systematic review by Ammenwerth et al., (2008) concluded that CPOE significantly reduced the relative risk for potential medication errors by 13-99%. The relative risk for adverse drug events was also significantly reduced by a range of 35% to 98%. The potential effects of CPOE on medication errors emanate from certain characteristics of electronic prescribing systems that make them better than paper-based prescribing systems. They include the ability to reduce errors related to poor or illegible handwritings and to reach pharmacies faster. E-prescribing systems are additionally less prone to errors related to similarities in drug names, more easily incorporated into decision-support systems and medical records,

easily linked to warnings on drug-drug interactions, less susceptible to apothecary related-errors, foster easier identification of prescribing physicians, facilitate education and training, available for immediate data analysis, are easily linked to adverse drug events reporting systems, easily linked to algorithms on cost-effective medications, mitigate underprescribing and overprescribing, and reduce incorrect drug choices (Koppel et al., 2005). The ability to mitigate the relative risk for potential medication errors translates to significant cost benefits for hospitals. The latter aspect is especially critical due to the precedent set by the Centers for Medicare and Medicaid for non-reimbursement for certain adverse events.

Cost Justification

The implementation of CPOE systems is a costly venture. The hospital will incur costs related to purchase of necessary software and hardware as well as costs related to system implementation such as training and support costs, and ongoing maintenance expenses. The hidden costs to be incurred include drops in the productivity of the various hospital units in the initial implementation stage (Berger & Kichak, 2003). These costs are, however, justified because of the potential ability of CPOEs to detect and reduce medication errors. Medication errors are the second most prevalent forms of medical errors and a significant proportion of these errors are preventable. Treatment for medical errors is costly and is estimated at a moderate figure of $2000 per each ADE. This estimate does not include costs related to malpractice suits, extra work generated, and injuries borne by patients (Radley et al., 2012). Therefore, the reduction of medication errors will result in significant costs benefits to the hospital in the long run. Further it is hoped

that the reduction in medical errors will translate to improved patient outcomes. Lastly, implementation of e-prescribing systems is mandated by legislations such as the HITECH act hence it is paramount that the hospital implements this system before 2015 to avoid being penalized (Radley et al., 2012).

Evaluation of the Program

The impact of the program will be evaluated by assessing and comparing the actual number of ADEs prior and after implementation of the program. Other parameters to be evaluated include the number of nonintercepted potential medication errors and nonintercepted potential ADEs after implementation of the CPOE system. Evaluation will be done by two blind reviewers.

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