Establishing a Telephone Medication Order Policy and Protocol for a Small Private Hospital in Jamaica

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ABSTRACT

Objective: *To institutionalize an evidence-based policy/protocol adapted from the Agency for Healthcare Research and Quality (AHRQ) national medication standards for managing telephone medication orders (TMO) and to determine the impact of the policy/protocol on the number of telephone medication errors (TME) on two medical units of a small private hospital in Jamaica.*
Methods: *Kotter's Eight-step Change Model was used to facilitate organizational change among nurses and physicians by teaching and implementing the TMO policy/protocol adapted from AHRQ standards and collecting pre-policy and post-policy frequency of TMEs. A convenience sample of 80 nurses and physicians participated in training about the policy/protocol, took post-instructional tests and participated in the implementation of the policy/protocol. Chart audits over six weeks monitored adherence to the policy/protocol. The annual monthly mean of TMEs for the prior year was compared with the number of TMEs just prior to implementation of policy/protocol and at the end of the first six weeks of implementation.*
Results: *One hundred per cent of the convenience sample of 80 nurses and doctors passed the post-instructional test; the workforce adhered fully to the protocol during six weeks of implementation, and there was a 100% reduction in TMEs between the prior year and six weeks after policy/protocol implementation.*
Conclusion: *Kotter's eight-step framework of organizational change was a successful strategy in institutionalizing and sustaining adherence to the TMO policy/protocol, reducing the number of TMEs and positively influencing the organizational culture.*

Keywords: Medication errors, medication guidelines, organizational change, telephone medication order

Establecimiento de una política para órdenes de medicamentos por teléfono y protocolo para un pequeño hospital privado en Jamaica

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RESUMEN

Objetivos: *Institucionalizar una política/protocolo basada en evidencias, adaptada a partir de los estándares nacionales para la medicación establecidos por la Agencia de Investigación y Calidad de la Atención a la Salud (AICS) para el manejo de las órdenes de medicamentos por teléfono (OMT); y determinar el impacto de la política/protocolo sobre el número de errores de la medicación por teléfono (EMT) en dos unidades médicas de un pequeño hospital privado en Jamaica.*
Métodos: *El modelo de gestión del cambio de ocho pasos de Kotter se utilizó para facilitar el cambio organizacional entre las enfermeras y los médicos mediante la enseñanza e implementación de una política/protocolo para de OMT, adaptada de los estándares de AICS, así como la recolección de la frecuencia de ETM tanto previa como posterior a la política. Una muestra de conveniencia de 80 médicos y enfermeras tomaron parte en la capacitación sobre la política/protocolo, tuvieron pruebas post-instructionales, y participaron en la implementación de la política/protocolo. Con organigramas de auditorías se monitoreo el cumplimiento de la política/protocolo por seis sem-*

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anas. El promedio mensual anual de EMTs del año anterior se comparó con el número de EMTs justo antes de la aplicación de la política/protocolo y al final de las primeras seis semanas de la implementación.
Resultados: *El cien por ciento de la muestra de conveniencia de 80 médicos y enfermeras pasaron la prueba post-instructional; la fuerza de trabajo se adhirió completamente al protocolo durante las seis semanas de aplicación, y hubo una reducción del 100% en EMTs entre el año anterior y las seis semanas después de la implementación de la política/protocolo.*
Conclusión: *El modelo de cambio organizacional de ocho pasos de Kotter fue una estrategia exitosa a la hora de institucionalizar y mantener la adhesión a la política/protocolo de OTM, reduciendo el número de EMTs e influyendo positivamente en la cultura organizacional.*

Palabras claves: errores en la medicación, pautas de medicación, cambio organizacional, orden de medicamentos por teléfono

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INTRODUCTION

Medication errors are a serious problem placing patients and healthcare organizations at risk. Among 2029 hospitals in the United States of America (USA), 5.07% of admissions were exposed to medication errors and 0.25% had medication-related adverse outcomes, which occurred every 19.23 days, or one in every 401 admissions (1). According to the American Hospital Association (2) and Institute of Medicine (3), hospitals without a policy and protocol for managing telephone medication orders (TMO) have the highest propensity for errors, putting patients at risk. Similarly, Benjamin (4) linked a reduction in medication errors with strict adherence to effective standard procedural requirements.

Practice standards for medication administration require a current best practice approach be adopted that reliably safe guards against medication errors (5). Failure to adhere to protocol for medication administration, and the lack of clear and complete communication insert complexity and compromise patient safety (5). The Agency for Healthcare Research and Quality (AHRQ) national guidelines for telephone medication orders requires the nurse to inform the doctor of a client's personal and medical information, listen to the doctor, write down the order on appropriate documents, and read back the client's full name and prescription order as written down. The doctor is required to verbally verify the accuracy of the order as read back by the nurse and, as soon as possible, visually verify the order by inspection and sign it, if correct (5).

The focus of this quality improvement project is a small private hospital in Jamaica, which operates without a telephone medication policy and protocol and has a medication error rate that exceeds the norm for a hospital of its size. The 45-bed hospital has an average monthly census of 70 patients, a four-day average length of stay and averages 10 medication errors per month, 50% of which are linked to TMOs. The hospital has a staff of 120 nurses and two staff physicians and approximately 300 community physicians. The objectives of this quality improvement project are: (a) to develop and implement an evidence-based policy/protocol for safely managing TMOs and (b) to evaluate the adapted evidence-based policy/protocol for safely managing TMOs.

SUBJECTS AND METHODS

Theoretical framework

Organizational change is best grounded in an effective change theory or model to ensure adaptation of a desired standard of practice through a transformative process (6, 7). Kotter's Eight-step Change Model is widely acknowledged as a framework and systematic approach for enabling organizational change and improving organizational quality. The steps include: (i) creating urgency, (ii) forming a powerful coalition, (iii) creating a vision for change, (iv) communicating the vision, (v) removing obstacles, (vi) creating short-term wins, (vii) building on the change, and (viii) anchoring the change in corporate culture (6).

Kotter's eight-step model, in conjunction with the two project objectives, formed the methodological framework by which this quality improvement project was designed and implemented.

Step 1: Creating urgency. An urgent administrative communiqué was transmitted to all physicians and nurses in the hospital acknowledging deficits in how TMOs were currently managed, creating an imperative for change.

Step 2: Forming a powerful coalition. An interdisciplinary committee of nurses and physicians was established by administration and charged to recommend a policy/protocol adapted from the AHRQ Medication Guidelines, maximize involvement of other nurses and physicians, and contribute to information dissemination.

Step 3: Creating the vision for change. The vision of a hospital operating within the medication guidelines was communicated from administration through normal hospital communication channels to keep the vision in the forefront of the organization and staff, who would be responsible for implementing the adapted policy/protocol.

Step 4: Communicating the change. Once the TMO policy/protocol was approved by the hospital's board, the evidence-based policy/protocol, the vision for the change, and a call to a meeting and educational session on the new policy/protocol were transmitted through an administrative communiqué to all nurses and physicians and the staff at-large to ensure openness and transparency within the entire envi-

ronment. Two weeks following the communiqué, an educational session was held to discuss: (a) evidence and need for change, (b) vision for change, (c) specific details of the newly approved TMO policy/protocol, (d) implementation plan, (e) effective date of implementation, (f) data collection plan and (g) avenues for ongoing communication, questions and clarification.

Step 5: Removing obstacles. Potential obstacles and barriers that could interfere with full realization of the desired change were identified. Of particular concern was the impact of old habits and forgetfulness regarding administering TMOs. To counter this potential obstacle, attractive, eye-catching visual reminders in the form of posters were strategically placed near the nurses' station and beside phones to constantly remind physicians and nurses of the new protocol. In addition, colour-coded alerts (stickers) were adopted for placement on the front of patient charts as reminders. The stickers indicated that (a) a medication order was received, transcribed in the chart by the nurse, and awaiting the physician's review and approval, or (b) the physician's review and approval were completed or there was a problem with the review.

Step 6: Creating short-term wins. This quality improvement project embraced strategies to acknowledge short-term wins by recognizing and celebrating accomplishment of milestones. These gestures fostered a sense of ownership and pride in the progress being made.

Data collection and analysis

The evaluation phase, Objective 2, collected and analysed data pertaining to three data-based measurements: (i) knowledge of the adapted policy/protocol by medical and nursing staff, (ii) compliance with policy/protocol over time by nurses and physicians and (iii) measuring change in telephone medication errors (TMEs) following implementation of the policy/protocol.

Knowledge of the TMO policy/protocol was assessed through a 10-item multiple choice, post-instructional test developed by the interdisciplinary committee, requiring a passing score of at least 90%. Tests were administered in the live instructional session or *via* self-study. Anonymous completed tests were collected or submitted by mail or drop-box. Strict anonymity of all tests was maintained.

Compliance with the TMO policy/protocol was measured through weekly chart audits each Friday on all patients discharged from the two medical units. After determining which discharged patients' medical records contained TMOs, charts were checked for compliance by physicians and nurses on six indicators: (a) presence of a colour-coded alert (sticker) on the front of the chart if the chart contained a TMO that required the physician's approval, (b) evidence that the nurse wrote the telephone medication order accurately as verbalized by the physician, (c) the physician approved the transcribed order as intended, (d) in the absence of an approved order, the physician made a correction to the order transcribed by the nurse and (e) the physician reviewed and signed the order within the designated 24-hour time frame. The reviewer assigned YES or NO to questions A−E above for each chart reviewed. During the audit, no names, diagnoses, or other medical information were recorded.

Evaluation of the impact of the policy/protocol on the number of the hospital's TMEs was measured, comparing the prior year's mean monthly TMEs with the number of TMEs immediately prior to and after implementation of the policy/protocol. Data collected prior to implementation was to control for possible Hawthorne effect resulting from widely circulated information on the policy/protocol prior to implementation. Upon implementation of the new policy/protocol, the overall number of TMEs on two medical units was determined over six weeks. Lastly, the mean monthly TMEs for the year preceding implementation of the new policy was identified and compared to the TMEs for TMOs following the chart audit.

RESULTS

A convenience sample of 100 nurses and doctors participated in live or self-study educational sessions and took the multiple-choice post-instructional test. Twenty participants did not indicate their profession and were eliminated from further analysis. Of the 80 remaining, 75 self-identified as nurses (94%) and five self-identified as physicians (6%). All 80 (100%) passed the post-test with a score of 90% or better, suggesting a working knowledge of the policy/protocol. The 80 participants represented 19% of the nurse/physician workforce of 422 at the hospital.

The frequency of TMEs was measured via data collected through the weekly chart reviews. Over the six-week period, 183 charts of discharged patients were reviewed, with 51 (27.9%) containing TMOs. Review of the 51 qualifying charts revealed no areas of non-compliance with the protocol. Thus, it was concluded that the policy/protocol was understood and was correctly practised within the hospital setting.

The final data-based measurement compared prior-year data on TMEs with data collected during the chart audit. The total number of TMEs for calendar year 2013 was 54, with a monthly mean of 4.5. The number of TMEs for the two months preceding implementation of the protocol was nine, with a monthly mean of 4.5, indicating there was no effect from institutional communication to create urgency when launching the project. Between January and February 2014, chart audits revealed the total number of TMEs was zero. By comparison, the data showed a 100% decline in the monthly mean of TMEs between 2013 and the six weeks of chart audits.

DISCUSSION

The first objective of this quality improvement project, to develop and implement an evidence-based TMO policy and protocol, was achieved. The second objective, to evaluate implementation of the TMO policy/protocol and its impact on TMEs, was also achieved. The data showed a decline in the mean monthly frequency of TMEs from 4.5 to 0. This finding is consistent with other studies (2−4) which confirm that strict

adherence to a standard evidence-based procedure for medication administration correlates with reduction in medication errors.

The use of Kotter's Eight-step Change Model to systematically facilitate organizational change in the management of TMOs was consistent with other health systems' quality improvement projects (8, 9). The first six steps were used to design and implement this quality improvement project, while the last two spoke to the impact of the project on continuous quality improvement and impact on organizational culture. *Step 7: Building on the change*, was immediately evident following the poor physician participation rate during the information session. Administration was swift in mandating that all physicians be informed of the details of the policy/protocol and that they participate fully in its implementation. This in-stitutional response was also aligned with Kotter's 5th step of *Removing obstacles*.

Step 8: Kotter's model, *Anchoring or sustaining the change*, speaks to continuous quality improvement by building on progress, and by cultivating a corporate culture that collectively values quality. The probability of sustaining the TMO policy/protocol is high due to its incorporation in the published procedural manual, inclusion in orientation and training activities with new and continuing employees, and annual analysis of TMOs.

This successful project has thepotential to serve as a stimulus and inspire momentum for quality improvement throughout the hospital.

REFERENCES

1. Bond C, Raehl C, Franke T, Medication errors in United States hospitals. Pharmacotherapy 2001; **21:** 1023−36.
2. Pathways for medication safety. 2002 [cited 2013 Dec 1]. Available from http://www.ismp.org/tools/pathwaysection1.pdf
3. Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. Washington, DC: National Academy Press; 2000.
4. Benjamin DM. Reducing medication errors and increasing patient safety: case studies in clinical pharmacology. J Clin Pharm 2003; **43:** 768−83.
5. Health Care Association of New Jersey. Medication management guideline. Hamilton, NJ: Health Care Association of New Jersey (HCANJ); 2007; 1–38.
6. Kotter J. Leading change: Kotter's 8 step change model. Kotter International; 1996 [cited 2013 Dec 1]. Available from http://www.kotterinternational.com/our-principles/changesteps/changesteps
7. Kotter J. Change management vs. change leadership -- what's the difference? Forbes; 2011 Jul 12 [cited 1 Dec 2013]. Available from: http://www.forbes.com/sites/johnkotter/2011/07/12/change-management-vs-change-leadership-whats-the-difference/
8. Appleby H, Tempest S. Using change management theory to implement the International Classification of Functioning, Disability and Health in clinical practice. Br J Occup Ther 2006; **69:** 477−80.
9. Heitman SE. Improving safety in the first hour following total joint replacement surgery [Thesis]. St Paul, MN: St Catherine University; 2012. Available from: http://sophia.stkate.edu/dnp_projects/24