



Implementation of a point of care pharmacy service in a cardiovascular progressive care unit: defining clinical roles and determining the best pharmacy practice model



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BACKGROUND

- Traditionally, hospital pharmacists spent most of their time tending to the needs of the patients and doctors from a centralized pharmacy location.
- Today, more pharmacists are working at the point-of-care (POC), in collaboration with other healthcare professionals, to positively influence patient outcomes.

OBJECTIVES

This four-week pilot program is designed to place the pharmacist at the POC in order to:

- Foster collaboration, and improve the satisfaction of healthcare professionals with pharmacy services.
- Evaluate the cost-savings and cost-avoidance from the POC services to justify additional POC pharmacist positions.
- Define the role of the POC pharmacist.
- Determine the best pharmacy practice model for Community Regional Medical Center (CRMC).

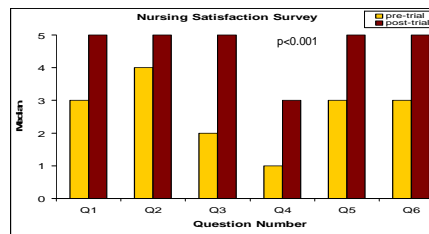
METHODOLOGY

- A four-week pilot program that will be conducted from October 1, 2007 through October 26, 2007, Monday through Friday, 0800 through 1600.
- The POC pharmacist will be working in the cardiovascular progressive care unit (CPCU), which consists of 60-beds.
- A pre-and-post trial nursing satisfaction survey will be administered to the CPCU nurses. The survey will evaluate the accessibility of the pharmacist, medication turn-around times, medication administration records (MARs) accuracy, and overall satisfaction with pharmacy services.
- Clinical interventions made by the POC pharmacist will be documented using Quantifi®, a clinical documentation and reporting tool that can provide key financial data, such as potential cost-savings and cost-avoidance, to demonstrate pharmacy value to the CRMC administration. Clinical interventions will include, but is not limited to TPN evaluation, therapeutic drug recommendations, and PK monitoring.
- The POC pharmacist will compile a weekly report documenting their clinical activities, as well as any challenges they encounter, to serve as a guide in formally defining the POC pharmacist's role.
- The study proposal was reviewed by the CRMC Institutional Review Board (IRB), where it was determined to be exempt from IRB oversight.
- Statistical Analysis : A traditional five-point Likert scale will be utilized in the pre-and-post trial Nursing Satisfaction Surveys. Wilcoxon rank sum will be used to test for a difference between the median values.

RESULTS

Preliminary Results

- Nursing Satisfaction Survey
 - Pre-trial $n=33$; Post-trial $n=43$
 - Likert Scale: 1=Dissatisfied, 5=Extremely Satisfied
 - Paired Pre-and-Post Trial Questions
 - Q1: Pharmacist interaction
 - Q2: Provision of drug information
 - Q3: Turn-around times
 - Q4: Missing medications
 - Q5: Accuracy of the MARs
 - Q6: Overall satisfaction with the pharmacy services
 - Additional Post-trial Questions
 - 92.9% of the post-trial responders report an increase in pharmacy services utilization as a result of the POC pharmacy program.
 - 100% of the post-trial responders were satisfied with the POC pharmacist.



CONCLUSIONS

- The POC pharmacy practice program significantly increased the level of satisfaction of the medical staff with pharmacy services, which may translate to an improvement in patient care.
- Based on the preliminary results, it seems advantageous to transition CRMC towards a POC pharmacy practice model.

FUTURE DIRECTION

- Complete data collection and analysis.
 - Evaluate data from Quantifi®, and translate clinical interventions into dollar amounts.
 - Quantitatively determine the impact of the program on medication turn-around times.
 - Establish the roles and responsibilities of the POC pharmacist.
- Present findings to the CRMC Board of Directors to garner support for the program.
- Implement point-of-care pharmacy services one floor at a time.
- Re-evaluate and determine if a POC pharmacy practice model is the best choice for CRMC.

REFERENCE

- Quantifi®. www.pharmacyonesource.com. Accessed 09/29/07.

The authors have nothing to disclose.



Reimbursement for Inpatient Pharmacy Cognitive Services

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BACKGROUND

- Inpatient pharmacists at Community Regional Medical Center (CRMC) in Fresno, California have provided valuable cognitive services for years continue to participate in these non-distributive functions without any reimbursement for these services
- Inpatient pharmacy cognitive services requested by physicians include but are not limited to:
 - pharmacokinetic monitoring of aminoglycosides and vancomycin
 - initiating parenteral nutrition regimens
 - evaluating drug therapies
 - providing therapeutic recommendations

OBJECTIVE

- Develop and implement an effective mechanism of reimbursement for pharmacy cognitive services provided by inpatient pharmacists at Community Regional Medical Center

METHODOLOGY

Institutional Review Board (IRB) at CRMC determined research project exempt from IRB oversight based on federal guidelines at 445CRF46.101 (b) (2).

Prospective Administrative Study

Phase I:

- Evaluate current practices of reimbursement in the United States
- Identify the current cognitive services provided at CRMC that can potentially be reimbursed
- Identify key players in the review and approval process of the reimbursement protocol:
 - pharmacists, pharmacy and hospital administration, finance, billing, information systems and legal services, and other relevant administrative committees

Phase II:

- Pharmacists support:
 - inform of goals and objectives of project; encourage cooperation and process consistency
 - standardize progress note writing (Subjective Objective Assessment Plan format required for reimbursement) for pharmacy consults to become part of medical record
 - training sessions on appropriate use of consult coding, billing and reimbursement process
- Begin data collection for a period of 6 months to track:
 - type of physician requested pharmacy consults
 - time spent per consult
 - level of complexity
 - physician acceptance of pharmacy recommendations
- Design charge codes associated with Current Procedure Terminology (CPT) codes, approved by the billing/coding department; inpatient pharmacy consultation fees will be determined by charge levels associated with acuity of illness and complexity of pharmacist decision making (AMA CPT Codes for 2007)

Phase III:

- Project proposal and analysis will include:
 - potential reimbursement
 - potential pharmacy and hospital cost savings due to pharmacy cognitive services

FUTURE DIRECTION

- Reimbursement proposal to be presented to key players for review and approval
- Once approved, inform physicians via P&T newsletter in an effort to gain support and acceptance of project
- Develop continual training sessions for pharmacists to maintain consistency of progress note writing, coding and billing procedures
- Implementation of reimbursement mechanism

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Disclosure: authors of this presentation have nothing to disclose concerning financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.



Comparison of the Efficacy of 7.5% Hypertonic Saline vs. 20% Mannitol for Intracranial Hypertension Management in Critically Ill Patients

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BACKGROUND

>Secondary hypoxic brain injury from intracranial hypertension has contributed to the high mortality of patients with traumatic brain injury (TBI).

>Hyperosmotherapy has been used to improve cerebral oxygenation by decreasing intracranial pressure (ICP).

>Traditionally mannitol is recommended for control of raised ICP following TBI² but it's use includes risk of kidney failure after multiple uses and possible systemic hypotension.

>Bolus administration of hypertonic saline (HTS) has been proven safe and effective in several randomized, clinical trials in lowering ICP^{1,4}.

>However, there are limited clinical studies directly comparing hypertonic saline versus mannitol in ICP management and evaluating the use of osmotherapy to lower intracranial pressure in non-TBI patients.

OBJECTIVE

>Compare the efficacy of 20% mannitol versus 7.5% hypertonic saline in lowering intracranial pressure in patients with traumatic or non-traumatic brain injury.

METHODOLOGY

Study Design

Retrospective, chart review

Study Population

Inclusion criteria:

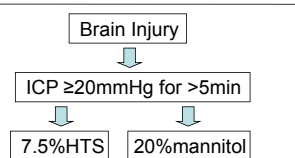
>Age ≥18 years old at time of therapy

>Documented computed tomographic (CT) scan of head showing abnormality or lesion (e.g. subarachnoid hemorrhage, subdural hematoma)

>Diagnosed with traumatic or non-traumatic brain injury resulting in intracranial hypertension (ICP ≥20mmHg for >5 min)

>Patients requiring ICP monitoring due to Glasgow Coma Scale (GCS) ≤8 or requiring post-operative ICP monitoring

>Received order for treatment with either 7.5% hypertonic saline or 20% mannitol using the Community Regional Medical Center (CRMC) Intracranial Hypertension/Head Injury – Adult Supplemental order set (OS-39).



Intervention

•7.5% hypertonic saline: 2ml/kg IV bolus over 20minutes x 1 then q4h prn ICP ≥20mmHg

•20% mannitol: 1gm/kg IV q4h prn ICP≥20mmHg

Methods

Potential subjects will be identified from the intensive care unit (ICU) admissions by pharmacists receiving orders for 7.5% HTS or 20% mannitol. Patients will be further screened for inclusion or exclusion based on electronic dictation, medical records, radiology and pharmacy reports. The following data will be gathered:

-Baseline characteristics: demographics, vitals, basic metabolic panel, GCS score, concurrent medications, serum sodium and osmolality

-Measures of efficacy: hemodynamic measures (ICP, cerebral perfusion pressure, mean arterial pressure, central venous pressure) pre- and post-osmotherapy treatment and total number of doses HTS or mannitol administered

-Measures of adverse events (basic metabolic panel, fluid balance, GCS score, serum sodium and osmolality)

Reviewed by Institutional Review Board (IRB) at CRMC Exempt from IRB oversight based on federal guidelines.

CONCLUSION

>Document use of 7.5% hypertonic saline as an effective alternative to mannitol for patients requiring reductions in intracranial pressure.

>Increase the published literature available describing the use on hypertonic saline and mannitol for intracranial pressure management in patients with non-traumatic brain injury.

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