Effects of a medication history process refinement using pharmacy technicians in the emergency department

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Introduction

- A quality improvement study assessing and recording patients' medication history by pharmacy technicians, within the emergency department (ED) at Sacred Heart Hospital
- It is hypothesized that the accuracy of the obtained information will be improved, resulting in a cleaner and safer patient profile, with fewer medication errors

Objectives

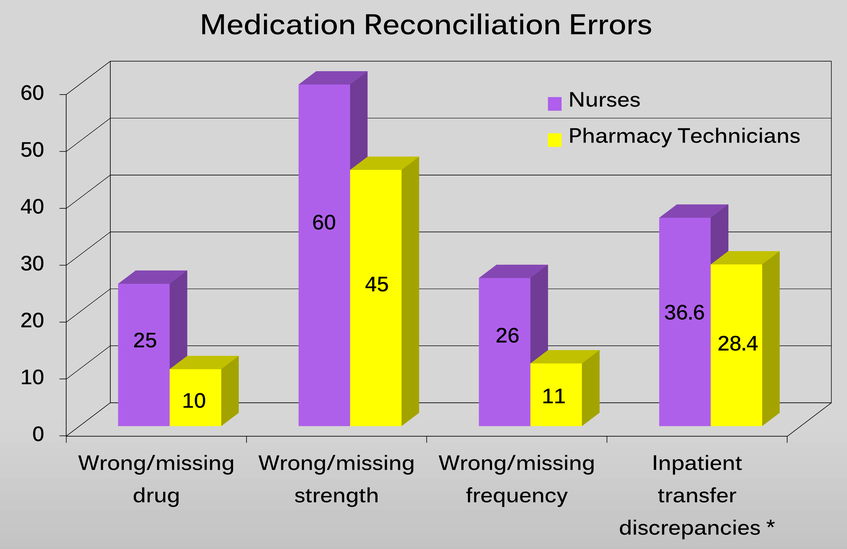
- Determine the impact of pharmacy technicians performing medication history services in the ED
- Compare accuracy of medication histories conducted by nurses to pharmacy technicians
- Evaluate resulting cost savings and safety improvement
- Assess physician, pharmacist, and nursing perception of services

Methods

- Inclusion criteria: at least 18 years of age, taking at least four home medications, admitted as an inpatient from the ED to an internal medicine floor, and remained hospitalized for at least 24 hours
- A medication history questionnaire template and common medication list was created for use
- The electronic medical record system provided identification of patients admitted to the hospital from the ED, both before and after implementation of pharmacy technician services
- Data was collected from July 5, 2015 to August 25, 2015 and October 5, 2015 to November 25, 2015
- One pharmacy technician was hired mid-September; his work was the sole provider of technician services for purposes of this study

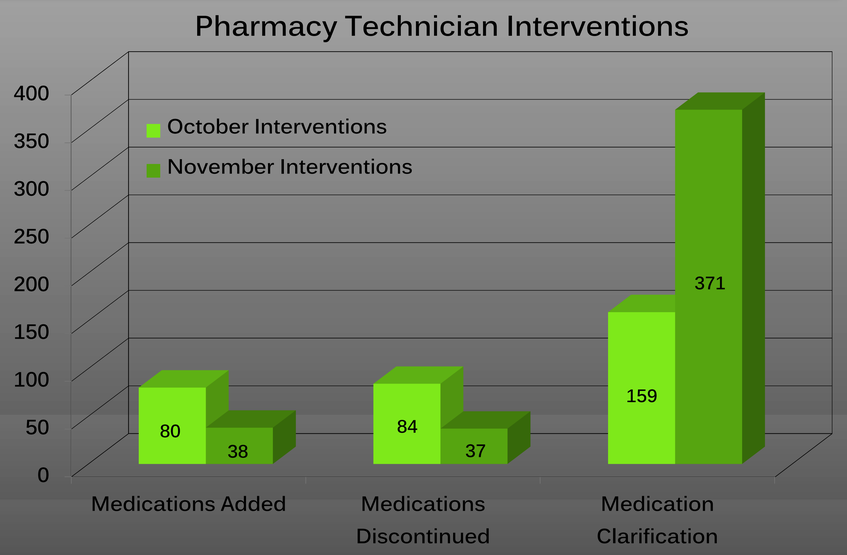
Results

- Twenty-five patients from each month were analyzed for a total of 100 patients



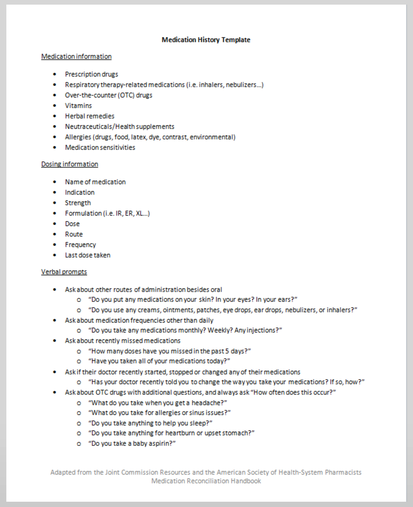
Results

- A total of 711 patients' medication histories were obtained from the technician within two months



Pharmacy Technician Tools

- A medication history questionnaire template and list of proper dosing for common medication was created



Medication History Template

Medication information

- Prescription drugs
- Respiratory therapy-related medications (i.e. inhalers, nebulizers…)
- Over-the-counter (OTC) drugs
- Vitamins
- Herbal remedies
- Neutraceuticals/Health supplements
- Allergies (drugs, food, latex, dye, contrast, environmental)
- Medication sensitivities

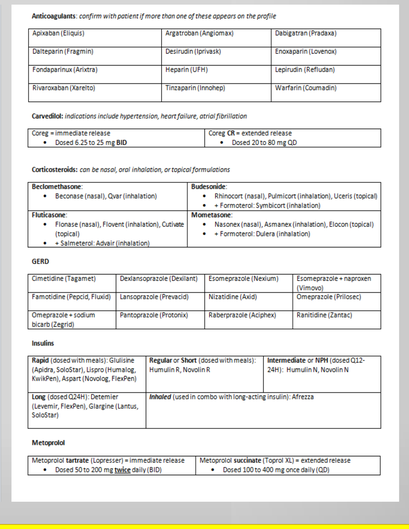
Dosing information

- Name of medication
- Indication
- Strength
- Formulation (i.e. IR, ER, XL…)
- Dose
- Route
- Frequency
- Last dose taken

Verbal prompts

- Ask about other routes of administration besides oral
  - "Do you put any medications on your skin? In your eyes? In your ears?"
  - "Do you use any creams, ointments, patches, eye drops, ear drops, nebulizers, or inhalers?"
- Ask about medication frequencies other than daily
  - "Do you take any medications monthly? Weekly? Any injections?"
- Ask about recently missed medications
  - "How many doses have you missed in the past 5 days?"
  - "Have you taken all of your medications today?"
- Ask if their doctor recently started, stopped or changed any of their medications
  - "Has your doctor recently told you to change the way you take your medications? If so, how?"
- Ask about OTC drugs with additional questions, and always ask "How often does this occur?"
  - "What do you take when you get a headache?"
  - "What do you take for allergies or sinus issues?"
  - "Do you take anything to help you sleep?"
  - "Do you take anything for heartburn or upset stomach?"
  - "Do you take a baby aspirin?"

Adapted from the Joint Commission Resources and the American Society of Health-System Pharmacists Medication Reconciliation Handbook



Anticoagulants: *confirm with patient if more than one of these appears on the profile*

Apixaban (Eliquis)	Argatroban (Angiomax)	Dabigatran (Pradaxa)
Dalteparin (Fragmin)	Desirudin (Iprivask)	Enoxaparin (Lovenox)
Fondaparinux (Arixtra)	Heparin (UFH)	Lepirudin (Refludan)
Rivaroxaban (Xarelto)	Tinzaparin (Innohep)	Warfarin (Coumadin)

Carvedilol: *indications include hypertension, heart failure, atrial fibrillation*

Coreg = immediate release • Dosed 6.25 to 25 mg **BID**	Coreg **CR** = extended release • Dosed 20 to 80 mg QD

Corticosteroids: *can be nasal, oral inhalation, or topical formulations*

Beclomethasone: • Beconase (nasal), Qvar (inhalation)	**Budesonide**: • Rhinocort (nasal), Pulmicort (inhalation), Uceris (topical) • + Formoterol: Symbicort (inhalation)
Fluticasone: • Flonase (nasal), Flovent (inhalation), Cutivate (topical) • + Salmeterol: Advair (inhalation)	**Mometasone**: • Nasonex (nasal), Asmanex (inhalation), Elocon (topical) • + Formoterol: Dulera (inhalation)

GERD

Cimetidine (Tagamet)	Dexlansoprazole (Dexilant)	Esomeprazole (Nexium)	Esomeprazole + naproxen (Vimovo)
Famotidine (Pepcid, Fluxid)	Lansoprazole (Prevacid)	Nizatidine (Axid)	Omeprazole (Prilosec)
Omeprazole + sodium bicarb (Zegrid)	Pantoprazole (Protonix)	Raberprazole (Aciphex)	Ranitidine (Zantac)

Insulins

Rapid (dosed with meals): Glulisine (Apidra, SoloStar), Lispro (Humalog, KwikPen), Aspart (Novolog, FlexPen)	**Regular** or **Short** (dosed with meals): Humulin R, Novolin R	**Intermediate** or **NPH** (dosed Q12-24H): Humulin N, Novolin N
Long (dosed Q24H): Detemier (Levemir, FlexPen), Glargine (Lantus, SoloStar)	***Inhaled*** (used in combo with long-acting insulin): Afrezza	

Metoprolol

Metoprolol **tartrate** (Lopressor) = immediate release • Dosed 50 to 200 mg **twice** daily (BID)	Metoprolol **succinate** (Toprol XL) = extended release • Dosed 100 to 400 mg once daily (QD)

Discussion

- Sacred Heart's ED averages 100,000 patients annually
- Approximately 14,000 are then admitted as inpatient
- Each day, the technician saw an average of 20 patients and recorded roughly 20 interventions
- An estimated amount of $76 per patient intervention projects to an annual cost savings of $395,200
- It is anticipated that a longer time frame and larger sample size will be needed to assess a more accurate financial gain

Disclosures

- The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities