Apr 1st, 11:00 AM - 2:00 PM

Medication Reconciliation of Medically-Complex Emergency Department Patients by Second-Year Professional Pharmacy Students

Lauren Haines
Cedarville University, laurenhaines@cedarville.edu

Neal S. Fox
Cedarville University, nfox@cedarville.edu

Rachel R. Bull
Cedarville University, rrbull@cedarville.edu

Jeb Ballentine
Cedarville University, jballentine@cedarville.edu

Thaddeus T. Franz
Cedarville University, tfranz@cedarville.edu

See next page for additional authors

Presenters
Lauren Haines, Neal S. Fox, Rachel R. Bull, Jeb Ballentine, Thaddeus T. Franz, and Zachary N. Jenkins

Medication Reconciliation of Medically-Complex Emergency Department Patients by Second-Year Professional Pharmacy Students

Lauren Haines, Neal Fox, Rachel Bull,
Dr. John Ballentine, Dr. Thaddeus Franz, and Dr. Zachary Jenkins

STATEMENT OF THE PROBLEM

Background

- A transition of care is "The movement of a patient from one setting of care (hospital, ambulatory primary care practice, ambulatory specialty care practice, long-term care, home health, rehabilitation facility) to another."[1]
- A medication reconciliation is "The process of identifying the most accurate list of all medications that the patient is taking, including name, dosage, frequency, and route, by comparing the medical record to an external list of medications obtained from a patient, hospital, or other provider."[1]
- A medication reconciliation can be performed by pharmacists, pharmacy students, nurses, or physicians.
- Research has shown pharmacy students have been more accurate in obtaining patient medication histories compared to physicians and nurses, which aids in a more complete medication reconciliation.[2]
- Previous research of fourth-year professional pharmacy students performing medication reconciliation in their advanced pharmacy practice experiences has been conducted to determine their competence, but second-year students have not yet been evaluated in this manner.

Significance of the Problem

- Transitions of care are commonly associated with many serious problems, including potential medication errors, which are recognized nationally by professional organizations.
- Medication reconciliation is an integral part of the Joint Commission's National Patient Safety Goals (NPSG) 2014 for hospitals. NPSG 03.06.01 states, "maintain and communicate accurate patient medication information."[3]
- Errors and discrepancies that occur throughout care transitions due to poor medication reconciliations have potential to cause adverse drug reactions.[4]
- Over two million serious adverse drug reactions (ADRs) occur yearly, resulting in approximately 100,000 deaths.[5]
- Second-year professional pharmacy students have the potential to perform more cost-effective medication reconciliations, while also enhancing patient care.

OBJECTIVES

Primary Objective: To determine the effect of second-year pharmacy student medication reconciliation on high-risk patients undergoing transitions of care within the emergency department compared to fourth-year pharmacy students in the literature.
Secondary Objective: To determine the impact of second-year pharmacy student medication reconciliation on patient 30-day readmission rates.

HYPOTHESES

Alternative Hypothesis for Primary Objective: There is a significat difference between the outcomes of second-year and fourth-year pharmacy student medication reconciliation.
Null Hypothesis for Primary Objective: There is no signifcant difference between the outcomes of second-year and fourth-year pharmacy student medication reconciliation.

REFERENCES

1. Medication reconciliation. Eligible Professional Meaningful Use Menu Set Measures Measure 6 of 9 Web site. http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/7_Medication_Reconciliation.pdf. Updated 2014. Accessed September 14, 2014.
2. Lancaster JW, Grgurich PE. Impact of students pharmacists on the medication reconciliation process in high-risk hospitalized general medicine patients. Am J Pharm Educ. 2014;78
3.The Joint Commission. Hospital: 2014 National Patient Safety Goals. http://www.jointcommission.org/assets/1/6/HAP_NPSG_Chapter_2014.pdf. Effective January 1, 2014. Accessed October 11, 2014
4. Musgrave CR, Pilch NA, Taber DJ, et al. Improving transplant patient safety through pharmacist discharge medication reconciliation. *Am J Transplant*. 2013;13(3):796-801.
5. Flockhart, D. A.; Honig, P.; Yasuda, S. U.; Rosebraugh, C.; Woosley, R.L. Preventable Adverse Drug Reactions: A Focus on Drug Interactions. fda.gov. http://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/DrugInteractionsLabeling/ucm110632.htm#ADRs: Prevalence and Incidence. Updated: 06/18/2014. Accessed October 11, 2014.

ACKNOWLEDGEMENTS

We would like to thank Dr. Thaddeus Franz (Pharm.D) for all of his help throughout this project.

PROPOSED METHODS

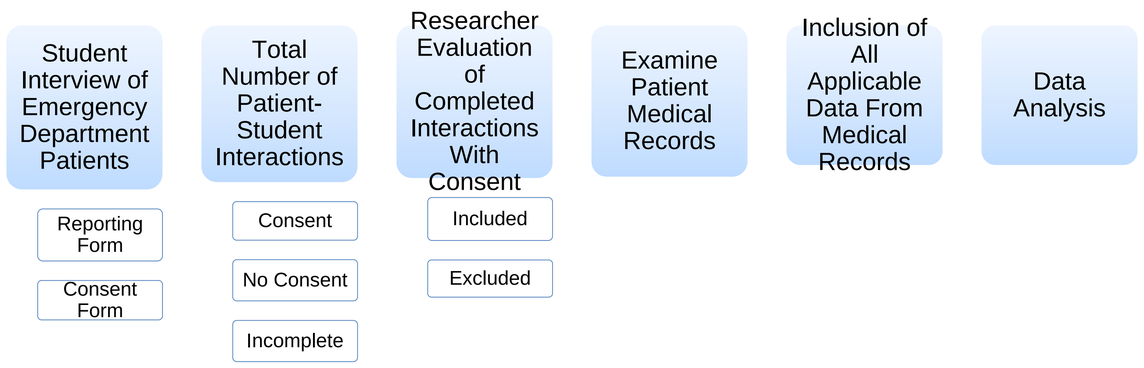
Study Design

- Historical-controlled, longitudinal observational study

Sample

- Purposive sampling
- **Inclusion criteria:**
  - High-risk patients
  - Emergency department patients
  - Patients reviewed by second-year professional pharmacy students (P2)
  - Patients at Miami Valley Hospital located in Dayton, Ohio
- **Exclusion criteria:**
  - Patients < 21 years old and/or are pregnant
  - Patients who refuse consent to be a part of the study
  - Patients unable to complete an interview with the pharmacy student

Data Collection



Measurement

- Proposed interventions
- Medication discrepancies
- Patient 30-day re-admission rates

PROPOSED ANALYSES

- **Descriptive**: Standard deviation and mean
- **Statistical Analysis**: One-sample *t*-test

PROJECT TIMELINE

LIMITATIONS

- Due to resource and ethical concerns, we did not have a control group to compare to the patients receiving medication reconciliation from second-year student pharmacists.
- The comparison to APPE students in the literature is weakened by differences in setting and training.
- The researchers were not able to oversee every patient encounter to ensure that proper procedures were followed.
- The hospital institution may have different internal procedures and definitions than the researchers that hamper the standardization of data collection.

FUTURE DIRECTIONS

- Direct comparison of medication reconciliation between pharmacists, fourth-year pharmacy students, and second-year pharmacy students
- Comparing second-year pharmacy student medication reconciliation to nurses and physicians
- Providing information about care transitions to patients to reduce preventable errors