Clinical Interventions Documented by APPE Students: Results from a Pilot Study

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Introduction

Pharmacist interventions in the community setting are hypothesized to be underreported. Reasons may include lack of standard definition of an intervention and absence of a standard platform to report.

This has prompted research into the what student pharmacists are able to identify and then document, when given an intervention reporting tool. Researchers have defined an intervention as "any preposition of change to the original drug therapy prescribed."[1] Pilot studies show that these students are identifying drug therapy problems (DTPs) and performing numerous interventions. Preliminary research shows that student interventions may go undocumented due to lack of standard system between advanced pharmacy practice experiential (APPE) sites.[2,3,4]

The purpose of this study is to evaluate preliminary data from an electronic survey tool developed to track clinical interventions made by students completing an elective direct patient-care community APPE.

Objective

Primary:

Evaluate the types of drug therapy problems identified by student pharmacists and the results of these interventions.

Secondary:

Evaluate trends in trends of what type of interventions are identified and how they are defined.

Methods

Study Design: Retrospective Data Analysis

Study Population : APPE students during an elective community pharmacy rotation from Thomas Jefferson University

Pilot Program:

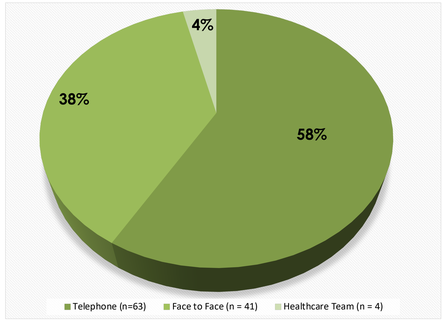
- Students were instructed to document drug therapy problems identified, and interventions made throughout the rotation.
- The survey tool was comprised of thirteen questions, including: time of encounter, location of encounter,, drug therapy problem(s) identified, intervention(s) made, outcome(s) achieved, and a free text response.
- This data was analyzed to determine the types of interventions that the students were identifying and the outcomes of these interventions.

Statistical Analysis : Descriptive statistics

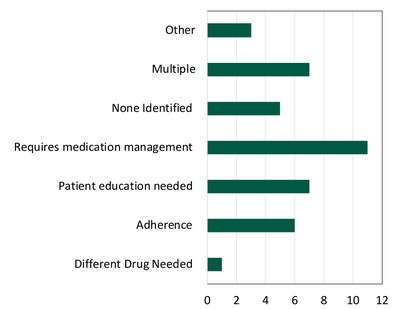
Ethics: The study was deemed exempt by the Institutional Review Board of Thomas Jefferson and Binghamton Universities.

Results

Encounter Format



Drug Therapy Problems Identified



Multiple interventions included combinations of: patient education , different drug needed, medication management, and variations in dosage.

Outcomes of Student Interventions

Outcome	Total, N (%)
New therapy initiated	25 (23.1)
Therapy discontinued	2 (1.9)
Dose or duration decreased	0
Dose or duration increased	2 (1.9)
Patient altered drug regimen	0
Patient altered administration or technique	7 (6.5)
Patient contacted health care provider	17 (15.7)
Patient or prescriber declined intervention	0
Medication management complete	36 (33.3)
No answer	6 (5.6)
Multiple*	13 (12)

Student Interventions

Interventions Completed	Total, N (%)
Unnecessary drug therapy	1 (<1)
Needs additional drug therapy	4 (3.7)
Different Drug Needed	3(2.8)
Adverse drug reaction	1 (<1)
Adherence	19 (17.6)
Patient education needed	29 (26.9)
Requires medication management	16 (14.8)
None Identified	10 (9.3)
Multiple Interventions*	25 (23.2)

Multiple interventions included combinations of: patient education , different drug needed, medication management, and variations in dosage.
Total interventions - 108

Multiple Intervention Detail

Intervention 1	Intervention 2	Total, N (%)
Different drug needed	Requires medication Management	1.85%
	Patient Education	1.85%
Needs additional drug therapy	Unnecessary Drug	< 1 %
	Immunization	< 1 %
	Adherence	2.78%
	Medication Management	< 1 %
	Adverse Drug Reaction	1.85%
Adherence	Patient Education	< 1 %
	Different Drug needed	< 1 %
	Dosage too High	< 1 %
	Dosage too Low	< 1 %
	Adverse Drug Reaction	5.56 %
Patient Education	Requires medication Management	2.78%

Interventions reported in multiple categories depicted based on the most commonly reported groupings.

Discussion

- The results of this pilot study show that when community pharmacy APPE students are challenged with recording their identified interventions, they are most likely to identify drug therapy problems in the categories of "needs additional drug therapy" or "different drug needed". These could both be considered major interventions with the potential to decrease the risk of future hospitalization.
- The most common intervention made was "patient education," indicating that students were more likely to talk directly to the patient about the drug therapy problem than any other type of action (including reaching out directly to a clinician).
- In 17 encounters the patient contacted their prescriber based on student recommendations, which indicates that students may be hesitant to contact healthcare providers directly.
- Of all the interventions, only a single one reported that the recommendation was not positively accepted, which indicates that students may be more likely to document only positive interventions.

Limitations

- Our results are from a small sample size, 108 interventions in total.
- Interventions selected were due to student interpretation rather than a standardized definition.

Conclusions

- Our data review demonstrates that students on APPE rotation in community pharmacy are an asset to the pharmacy team as they are able to identify medication concerns and intervene on behalf of their patients in various ways.
- These students often identified more than a single drug therapy problem with each encounter leading to the proposal of multiple interventions.

Future plans

- Development of a prospective study of community pharmacists to assess their definitions of interventions in order to create a universal vocabulary.
- Development of a more robust tracking tool based on the findings in this project (types of DTPs identified and resulting intervention) as well as the findings in the vocabulary survey project. This tool will be trialed in a larger APPE/IPPE student population.

Disclosure

Elizabeth Laughlin is the recipient of the Second Annual School of Pharmacy and Pharmaceutical Sciences Summer Research Internship for Women at Binghamton University. Sarah Lynch and Danielle Mayer have nothing to disclose.

References

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