

Impact of Pharmacist Education on Incoming Medical Residents

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ABSTRACT

Objectives: New medical residents are entering programs with vast amounts of knowledge regarding a number of topics. With the small amount of pharmacy-based education included in medical school curricula, it is important residents have a basic foundation of pharmacy-based knowledge prior to beginning their program. The purpose of this study was to assess the effectiveness of a pharmacist-led education session in improving medical resident knowledge of pharmacy-based concepts.

Methods: New medical residents were presented a one-hour session on pharmacy-based topics. Prior to the session, an eight-question pre-assessment was administered. The same eight questions were administered as a post-assessment after the session. One group of residents only received the pre-assessment and did not receive the intervention, thus serves as the control. Grade percentages were calculated to assess the efficacy of the session.

Results: Overall pre-test and post-test averages were 68.1% and 87.8% for 2016 and 68% and 88.9% for 2017. Similar pre-test scores were seen in the control group with 70.1% in 2016 and 71% in 2017. Improvements of 19.7% and 20.9% were seen in the 2016 and 2017 intervention groups respectively. Individual questions with the most improvement focused on anticoagulation and insulin management while questions with the least improvement dealt with infectious disease.

Implications: The pharmacist-led education session significantly improved medical resident knowledge. More frequent or in-depth sessions could further improve results. Residency programs should consider implementing similar sessions to provide new medical residents with a better foundation of pharmacy-based knowledge.

BACKGROUND

In 2018, 30,232 medical residents entered into the first year of residency in the United States. Colleges of medicine and medical schools work diligently to prepare their students for residency, providing a challenging curriculum that covers an expansive amount of information. Pharmacotherapy is a component of this curriculum however, there is a relatively small amount of time dedicated to it in the classroom. While pharmacists play a key role in the healthcare team, there are few studies demonstrating their contributions to medical resident's pharmacotherapy knowledge. Furthermore, there are no studies demonstrating the effect of a pharmacist-led education session on medical resident knowledge of pharmacy-related concepts.

METHODS

Incoming medical residents from two different sites were included, one group received the pharmacist-led education session and one did not. All groups were administered an eight-question pre-assessment. The assessment questions are outlined as follows.

1. Which of the following insulins is most appropriate to administer as meal-time coverage?
2. You are asked by your attending to start DVT prophylaxis in a patient. Current SCr is 3.4mg/dL and weight is 60kg. Which of the following is the most appropriate choice for DVT prophylaxis?
3. Which of the following agents is the best choice for treatment of MRSA pneumonia?
4. Which of the following agents is the best empiric coverage for a UTI?
5. A patient reports a severe allergy to morphine. Which of the following agents would be best to use instead for pain?
6. How many refills can be provided on a Class II narcotic (such as oxycodone)?
7. Which of the following regimens is most appropriate to treat hospital-acquired pneumonia?
8. Which of the following regimens is best to reverse a serious warfarin-induced intracerebral hemorrhage?

Residents participating in the education session were presented a slide-show presentation on various pharmacy topics including those pertaining to the pre-assessment questions. The same eight questions were administered as a post-assessment after the session. The same procedure was used to obtain data from incoming residents in 2016 and 2017.

RESULTS

Assessment averages (in %)		
	2016	2017
Pre-assessment (control)	70.1	71.0
Pre-assessment (intervention)	68.1	68.0
Post-assessment (intervention)	87.8	71.0
Improvement	19.7	20.9

Pre-assessment Average vs. Improvement

Question number	2016		2017	
	Pre average (in %)	Improvement (in %)	Pre average (in %)	Improvement (in %)
1	47.5	45.6	54.7	27.8
2	47.5	49.1	40.6	45.1
3	78.0	3.4	81.3	4.4
4	89.8	5.0	92.2	7.8
5	67.8	8.1	54.7	29.4
6	87.7	8.8	82.8	14.0
7	73.5	15.8	79.7	12.4
8	53.1	21.9	57.8	26.3

Very similar pre-assessment averages were seen across all groups in both years. Post-assessment averages improved by 19.7% and 20.9% in 2016 and 2017 respectively. Initially, residents performed well on questions covering infectious disease and narcotic prescribing. Residents showed greatest improvement in questions focusing on insulin therapy management, anti-coagulation, and drug-induced hemorrhage reversal.

CONCLUSIONS

An improvement of roughly 20% was seen in post-assessment scores for 2016 and 2017, offering support that pharmacists can impact medical resident knowledge of pharmacy-related concepts. Other residency programs should consider providing similar sessions to incoming residents. Furthermore, implementing more frequent or in-depth sessions could further enhance medical resident's learning experiences. We plan to continue this study over the coming years to gather more data on pharmacist-led education sessions.

DISCLOSURES

The authors have no disclosures related to this research.