Impact of Clinical Service Integration with Pharmacy Students on Pharmacist Cost Savings

Background

Pharmacy students' clinical interventions have historically equated to cost savings for health systems. These studies generally assess pharmacy students on their Advanced Pharmacy Practice Experiences. Few studies have assessed cost savings pharmacy students employed by health systems can provide by completing clinical services. This study aims to investigate whether clinical service completion by pharmacy students employed by a health system results in cost savings.

Methods

This study was a one-armed interventional trial completed at a single hospital site. The research was approved by the local IRB. The employed pharmacy students were trained on VTE prophylaxis and vancomycin dosing protocols using online modules, health-system protocols, investigator-created presentations, and competencies. Once students completed the required training, they began to complete protocols that were then reviewed by a pharmacist. A chart review was completed to determine the total number of protocols completed, breaking it down by protocol type. Cost savings, the primary outcome, was calculated by adding the cost it takes students to complete a protocol (hourly wage multiplied by fraction of hours) to the cost for the pharmacist to review the student protocol (hourly wage multiplied by fraction of hours). This number was subtracted from the previous cost it took a pharmacist to complete a protocol (hourly wage multiplied by fraction of hours) to determine cost savings. This was reported as total cost savings, cost savings per protocol, and cost savings by protocol type.

Results

Over the three-month timeframe of 9/10/22 to 12/10/22, 33 protocols were completed by students. Of those, 22 were vancomycin dosing and 11 were VTE prophylaxis. It took students an average of 11 minutes to complete a vancomycin protocol and 7 minutes to complete a VTE prophylaxis protocol. On average, it took a pharmacist 9 minutes to complete a vancomycin protocol previously and 5 minutes to review a student-completed vancomycin protocol. On average, it took a pharmacist 5 minutes to complete a VTE prophylaxis protocol previously and 3 minutes to review a student-completed VTE prophylaxis protocol. With an average pharmacist wage of $60 per hour and an average student wage of $17.50 per hour, the total cost savings over the three-month time frame was $16.94. The cost savings was $0.51 per protocol. Vancomycin protocol completion by students resulted in a cost savings of $0.79 per protocol and VTE prophylaxis completion resulted in a cost increase of $0.04 per protocol.

Conclusion

Completion of clinical protocols by pharmacy students employed by a health system resulted in a total cost savings. When broken down by protocol type, vancomycin dosing appeared to provide a larger cost savings of 79 cents per protocol, whereas VTE prophylaxis resulted in a loss of four cents per protocol. Although the cost savings was minimal over this timeframe, cost savings are expected to increase as more pharmacy students are involved in the process, students become more efficient, and pharmacists become more efficient at reviewing protocols, resulting in more significant cost savings over a large period of time.