Correlation Between Pharmacy Learner Interventions and Time Spent at an Academic Medical Center

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Introduction

At Wake Forest Baptist Health (WFBSH), all pharmacy team members are expected to document interventions (iVents) in the electronic medical record (Epic). iVents are used to describe direct and indirect patient care activities within the department and the cost-savings associated with each intervention.

Previous studies have demonstrated that clinical interventions documented by pharmacy students during a single Advanced Pharmacy Practice Experience (APPE) produce cost-savings for the institution as a whole.1-4

It has not been clearly established whether pharmacy learner interventions change over the course of the APPE year.

Finally, a research question remains whether having a greater number of rotations at a single institution leads to an increase in the number of interventions documented by students.

Methods

The objective of this study was to describe the incidence and types of pharmacy learner interventions per academic year and correlate the frequency and cost-analysis associated with interventions over time.

This study was a single center retrospective database review of interventions documented by pharmacy learners at WFBSH between June 12, 2017 and April 27, 2018.

Data was collected through a report generated in Epic that identified the type and associated cost-savings for each intervention.

Associated cost-savings for each intervention were determined based on previously established data and institutional statistics.

Inclusion criteria: all interventions submitted by Wingate University School of Pharmacy students completing ≥ 1 inpatient APPE rotation at WFBSH during the study period.

Primary endpoint: change over time of the frequency of interventions made per rotation block.

Secondary endpoints:

- Average number of interventions per learner per rotation block
- Average cost-savings per learner per rotation block
- Intervention categories

Statistical analyses included descriptive statistics, Poisson loglinear regression, Gamma distribution, and paired T-test.

Results

<table>
<thead>
<tr>
<th>Rotation Block</th>
<th>Number of Eligible Students</th>
<th>Number of Students Submitting Interventions</th>
<th>Total Number of Interventions</th>
<th>Total Cost-Savings ($, Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td>354</td>
<td>$56,586</td>
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<td>9</td>
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</table>

A total of 67 rotation blocks were eligible for inclusion in the study; 77% of students submitted interventions as part of eligible rotations. Students completed an average of 5.78 of 9 total rotations at WFBSH.

The number of interventions documented per student per block decreased by 3.37 (p = 0.021) and cost-savings per student per block decreased by $792 (p = 0.37) over the course of the academic year.

The average total number of interventions per eligible student was 87.11 (SD ± 66.39) for an average total cost-savings of $12,416.11 (SD ± $11,44).

An increased cost savings was associated with a higher number of rotations at WF (p=0.021).

A total of 1,288 interventions were submitted for a total cost-savings of $177,558.

Conclusions

This data demonstrates that pharmacy students add value to an academic medical center through patient care interventions and the cost-savings associated with these interventions.

This data most likely underestimates the total value of student interventions because of the low cost-savings associated with the “therapeutic recommendation” category, as well as potential for missed opportunities to document interventions.

Limitations of the study include potential for incorrect or inconsistent documentation, differences in rotation structure or opportunities for intervention documentation, and the limited sample size.

References