Estimating the value of pharmacist interventions in a specialty pharmacy setting
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STUDY SYNOPSIS
- Study Design: retrospective chart review with cost avoidance estimates
- Study Population: patients at Ardon Health specialty pharmacy with a documented intervention in their profile during the 2017 year
- Sample Size: 4,552 patients
- Data Collected: January 1, 2017 to December 31, 2017

METHODS

Inclusion Criteria
- Patients filling prescriptions at Ardon Health in the 2017 calendar year
- Documentation of at least one intervention or impact in the patient profile

Exclusion Criteria
- Patients with no documentation of an intervention in the 2017 calendar year

PROCEDURE FOR INTERVENTION

Coding system created to identify RPh interventions and impacts
RPhs documented interventions in patient profile throughout the year
Report generated to include all interventions documented in 2017
Investigator reviewed subset of impacts documented to identify likely prevented outcomes
Financial value of RPh time also attached to estimates
RPhs surveyed to estimate the average time per intervention type
Total yearly value of specialty RPh care estimated for both scenarios
Financial value of prevented outcomes estimated as discussed below
Worst-case scenario and more conservative iteration (described below) completed

RESULTS
- Total Interventions: 14,441
- Total Impacts Flagged as Cost-Saving: 115

<table>
<thead>
<tr>
<th>All Outcomes Prevented</th>
<th>50% of Total Value of Outcomes Prevented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Value of RPh Time (Impacts)</td>
<td>$3,948.33</td>
</tr>
<tr>
<td>Total Value of RPh Time (Interventions)</td>
<td>$429,577.50</td>
</tr>
<tr>
<td>Total Value of Prevented Outcomes from RPh Impacts</td>
<td>$4,169,832.56</td>
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<tr>
<td>Total Value of RPh Impacts and Interventions</td>
<td>$4,603,358</td>
</tr>
<tr>
<td>Value per Intervention Made</td>
<td>$318.75</td>
</tr>
<tr>
<td>Value per Rx Dispensed</td>
<td>$109.48, $59.89</td>
</tr>
</tbody>
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LIMITATIONS
- A single RPh reviewed impacts and attached an associated avoided outcome
- Data used to estimate hospitalization costs was standardized, but from an older database
- Subjective nature in estimating what outcome an intervention may have prevented

CONCLUSION
- RPh interventions in a specialty pharmacy setting add substantial value (estimated between $174.38 to $318.75 per intervention) in terms of prevented prescription and medical costs
- RPhs flagged 115 impacts out of 14,441 interventions. This is likely an underrepresentation of the actual number of interventions associated with cost-savings through waste mitigation/resource reduction

REFERENCES:

PURPOSE
The aim of this study is to estimate the value of RPh interventions in a specialty pharmacy setting with the goal of aiding the understanding of the value that high-touch specialty pharmacy care can bring to patients and the health care system.

DISCLOSURES
Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have interest in the subject matter
Craig Riccardo: Nothing to disclose
Grant Knowles: Nothing to disclose

BACKGROUND
- The need to demonstrate the value of routine pharmacist (RPh) interventions is necessary to drive the profession and the RPh’s clinical role forward
- Previous studies have demonstrated the value specialty pharmacy care can have on clinical outcomes. Tang et al demonstrated this, showing lower relapse rates in multiple sclerosis patients filling their disease-modifying therapy through specialty pharmacies
- Financial value of daily interventions from medication therapy management in ambulatory settings or RPh-led anticoagulation is well-established, however, value of daily specialty pharmacy care is less well-elucidated
- Saulles and Chang reported an estimate of the financial impact of 716 RPh interventions in a regional health system specialty pharmacy to be $299,415, demonstrating the large impact RPh care can have
- At Ardon Health, a workflow process for RPhs to categorize interventions was developed. A way of identifying those interventions (termed Impacts) which directly led to or had a high likelihood to prevent negative outcomes or reduce medical waste

ESTIMATING THE COST AVOIDANCE FROM PHARMACIST IMPACTS
- Unsuccessful Treatment Regimen: cost of unsuccessful treatment (average wholesale price – 17% used for estimating all prescription costs)
- Inadequate Response to Therapy: cost of six months of medication
- Hospital Admissions: 2006 Healthcare Cost and Utilization Project average cost for inpatient stay based off diagnosis (adjusted for inflation)
- Emergency Room (ER) Cost: median ER visit cost as estimated by Caldwell et al in 2013 (adjusted for inflation)
- Liver transplant: cost of liver transplant as evaluated by Rein et al in 2015 (adjusted for inflation)

WORST-CASE VERSUS CONSERVATIVE SCENARIO
- Two iterations of the analysis were completed which included the estimated preventable costs for:
  1. All RPh Impacts
  2. Only 50% of the value of the prevented outcomes due to RPh Impacts (average avoided cost used)