



# 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

## 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<sup>1</sup>
- 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<sup>2,3</sup>
- 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<sup>4</sup>
- 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

## PURPOSE

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

## DISCLOSURES

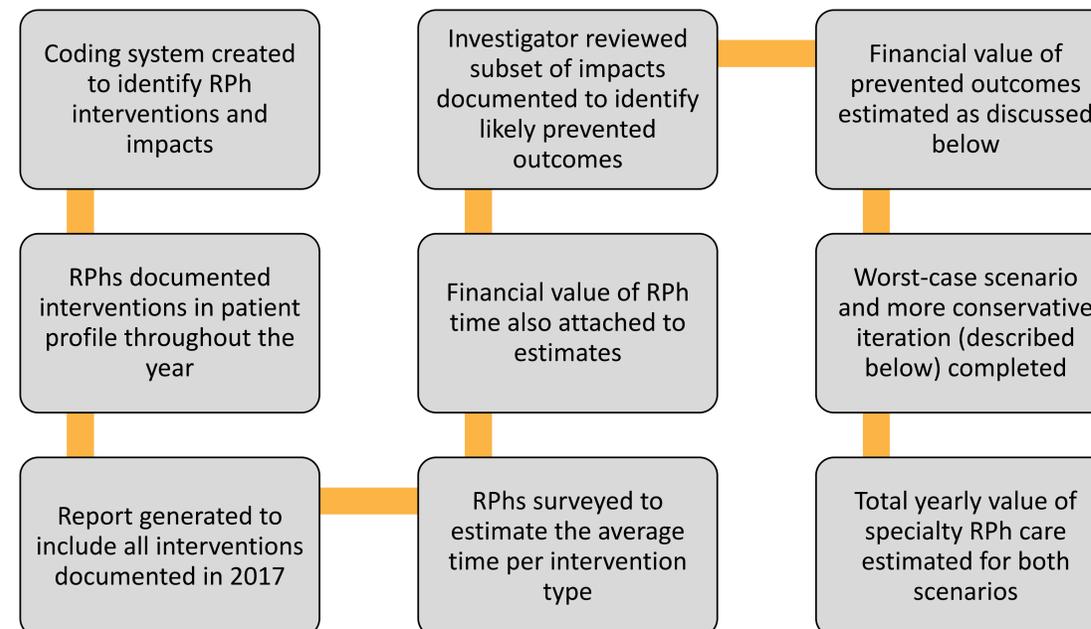
Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have interest in the subject matter

- Craig Riccardo: Nothing to disclose
- Grant Knowles: Nothing to disclose

## METHODS

|                           |   |
|---------------------------|---|
| <b>Inclusion Criteria</b> | <ul style="list-style-type: none"> <li>▪ Patients filling prescriptions at Ardon Health in the 2017 calendar year</li> <li>▪ Documentation of at least one intervention or impact in the patient profile</li> </ul> |
| <b>Exclusion Criteria</b> | <ul style="list-style-type: none"> <li>▪ Patients with no documentation of an intervention in the 2017 calendar year</li> </ul>   |

## PROCEDURE FOR INTERVENTION



## 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 include 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)

## RESULTS

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

|  | All Outcomes Prevented | 50% of Total Value of Outcomes Prevented |
|--|------------------------|--|
| Total Value of RPh Time (Impacts)                  | \$3,948.33             |  |
| Total Value of RPh Time (Interventions)            | \$429,577.50           |  |
| Total Value of Prevented Outcomes from RPh Impacts | \$4,169,832.56         | \$2,084,916.28                           |
| Total Value of RPh Impacts and Interventions       | \$4,603,358            | \$2,518,442                              |
| Value per Intervention Made                        | \$318.75               | \$174.38                                 |
| Value per Rx Dispensed                             | \$109.48               | \$59.89                                  |

## 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:

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3. Pellegrin KL, Krenk L, Oakes SJ, et al. Reductions in Medication-Related Hospitalizations in Older Adults with Medication Management by Hospital and Community Pharmacists: A Quasi-Experimental Study. *J Am Geriatr Soc*. 2017;65(1):212-219.
4. Saulles A, Chang J. Clinical and economic impact of a comprehensive specialty pharmacy oral oncology patient management program. *Journal of Drug Assessment*, 2018;7:sup1-3.