



Clinical and Financial Impact of Clinical Pharmacist Interventions in a Rural, Integrated Health System Specialty Pharmacy

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Introduction

Adverse drug events (ADEs) are one of the leading causes of morbidity and mortality in healthcare. The cost of drug-related morbidity and mortality is estimated to be \$136 billion annually, which is more than the total cost of cardiovascular or diabetic care in the United States.¹

Pharmacists are poised to reduce the number of preventable ADEs and mitigate possible harm through their pharmaceutical expertise. Numerous studies have demonstrated the impact of pharmacists' interventions in reducing possible ADEs and improving patient outcomes.²⁻³ Despite ample evidence of the role and value clinical pharmacists have, the clinical and financial value of their interventions are often underestimated by key stakeholders.

To date, there is a paucity of universal standards to define pharmacist interventions and guidance on the best way to demonstrate pharmacist intervention's financial outcomes in terms of direct revenue generation, cost saving or cost avoidance opportunities.

As a quality improvement initiative, a clinical pharmacist sought to determine the quality and quantity of interventions made at their site.

Objective

The purpose of this study was to assess the clinical and financial impact of pharmacist interventions in a rural, integrated-health system specialty pharmacy.

Methodology

- **Study Design:** A retrospective, observational study
- **Data Source:** Clinical pharmacist intervention document at the Clearway Health Midwest client site
- **Study Population:** Any patient with at least one documented intervention by the clinical pharmacist at the Midwest client site from January 1st, 2024 to April 30th, 2024
- **Exclusion:** Patients with no documentation in the intervention document; patients at all other Clearway Health sites
- **Statistical Analysis:** Descriptive statistics were utilized to evaluate intervention categories, provider acceptance rates and cost avoidance

Cost Avoidance Calculation⁴⁻⁵

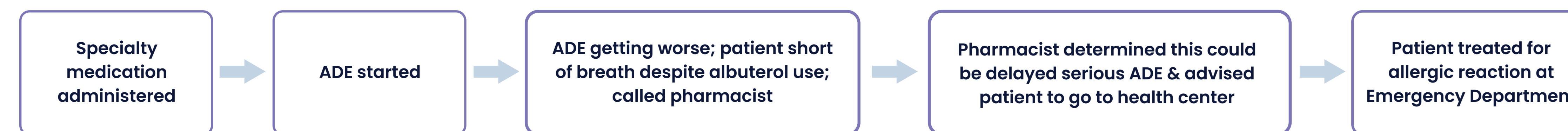
$$\text{Sum of all Cost Avoidance} - \left(\text{Proportion of Pharmacist Time} \times \text{Pharmacist Salary} \right) = \text{Net Cost Avoidance}$$

The probability of an ADE occurring without a pharmacist intervention is the following: 60% for potentially lethal errors, 40% for serious, 10% for significant, 1% minor or 0% for no error.

Based on previous studies and adjusted for inflation, the estimated cost of a single ADE is \$8,668.

Converting to make a prescription 340B eligible did not qualify as an intervention, but the cost savings were included in the final analysis.

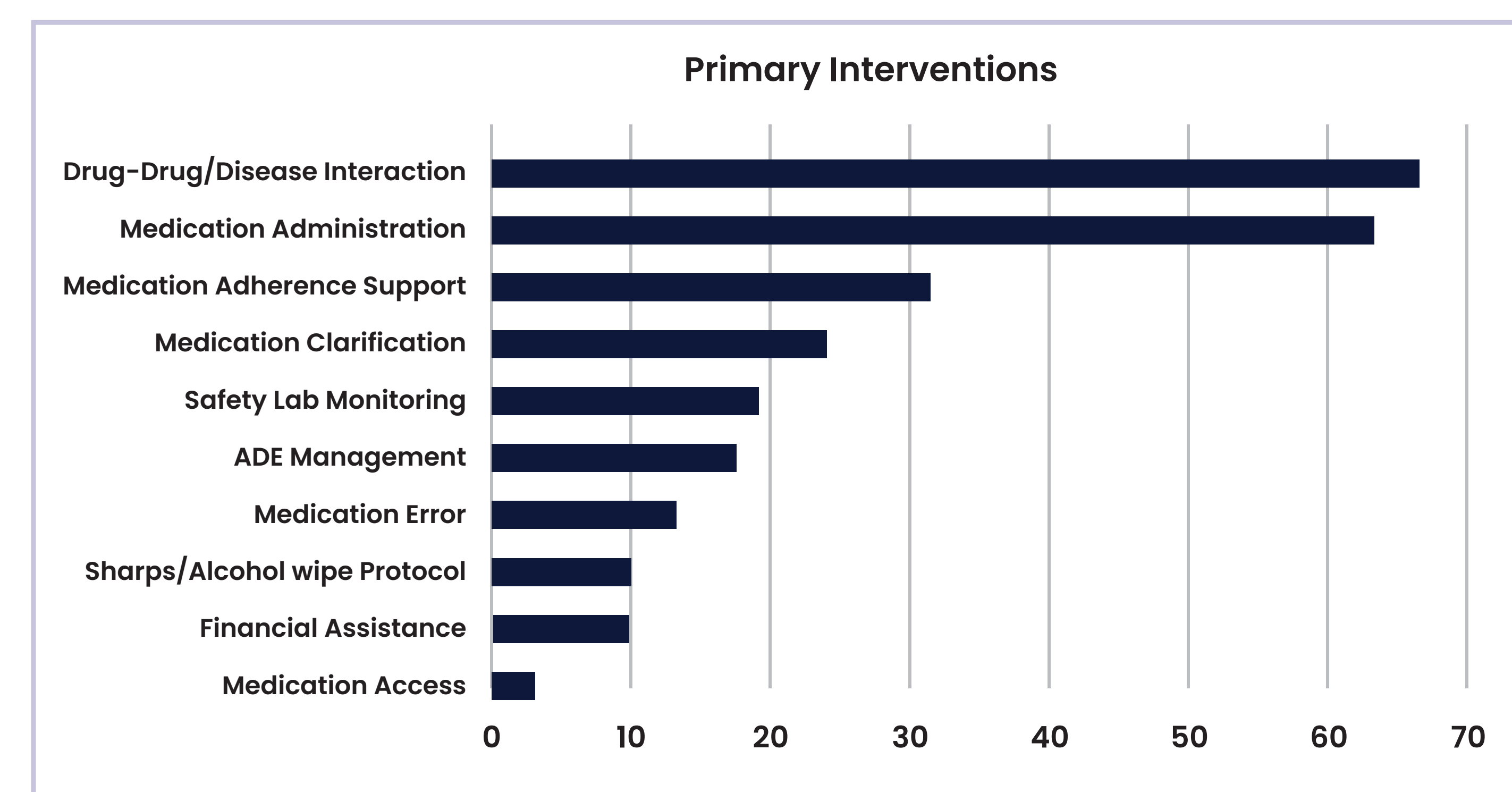
Intervention Example



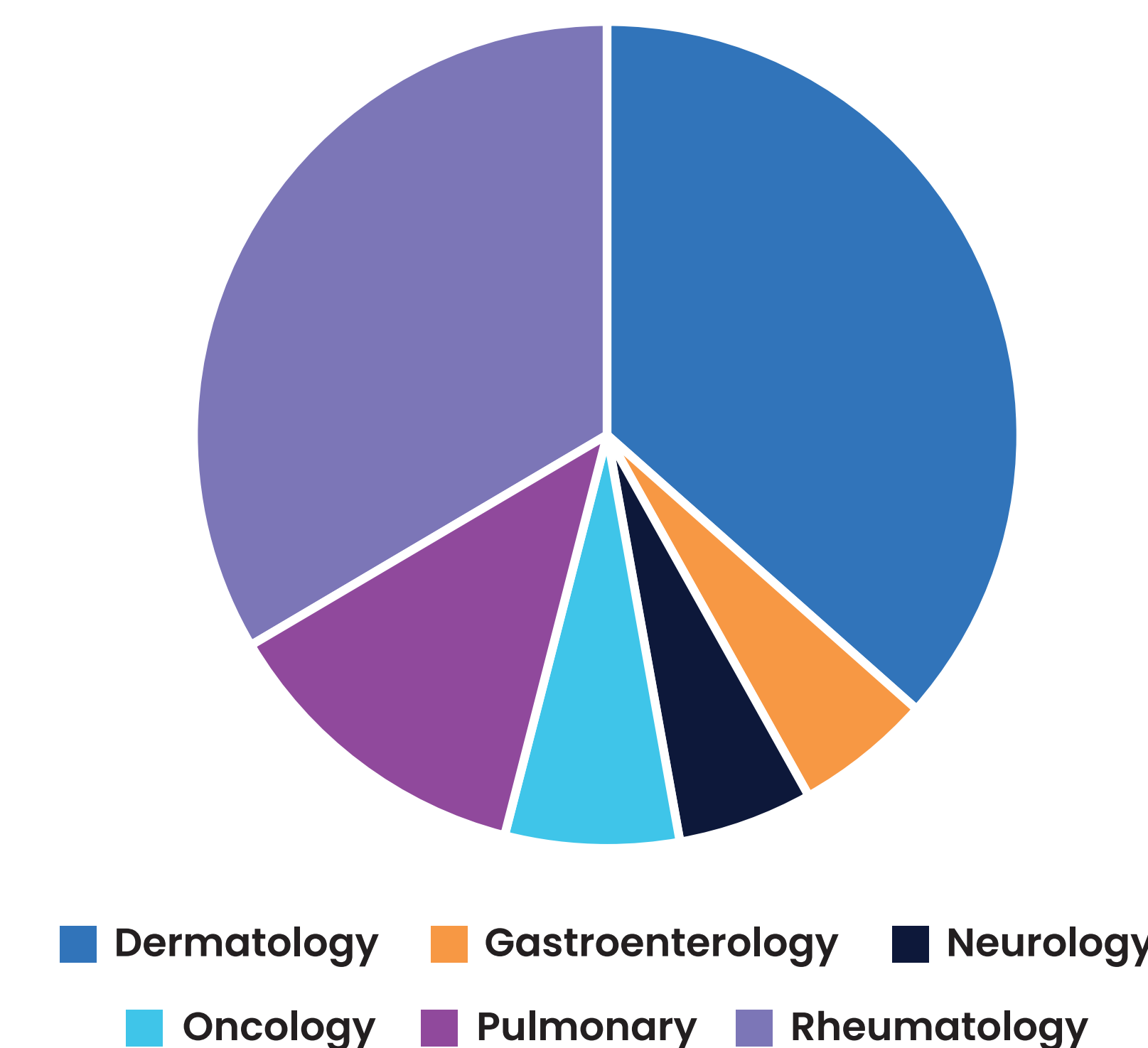
The panel categorized this as a lethal adverse event and the calculated cost avoidance from this intervention was \$5,201.

Results

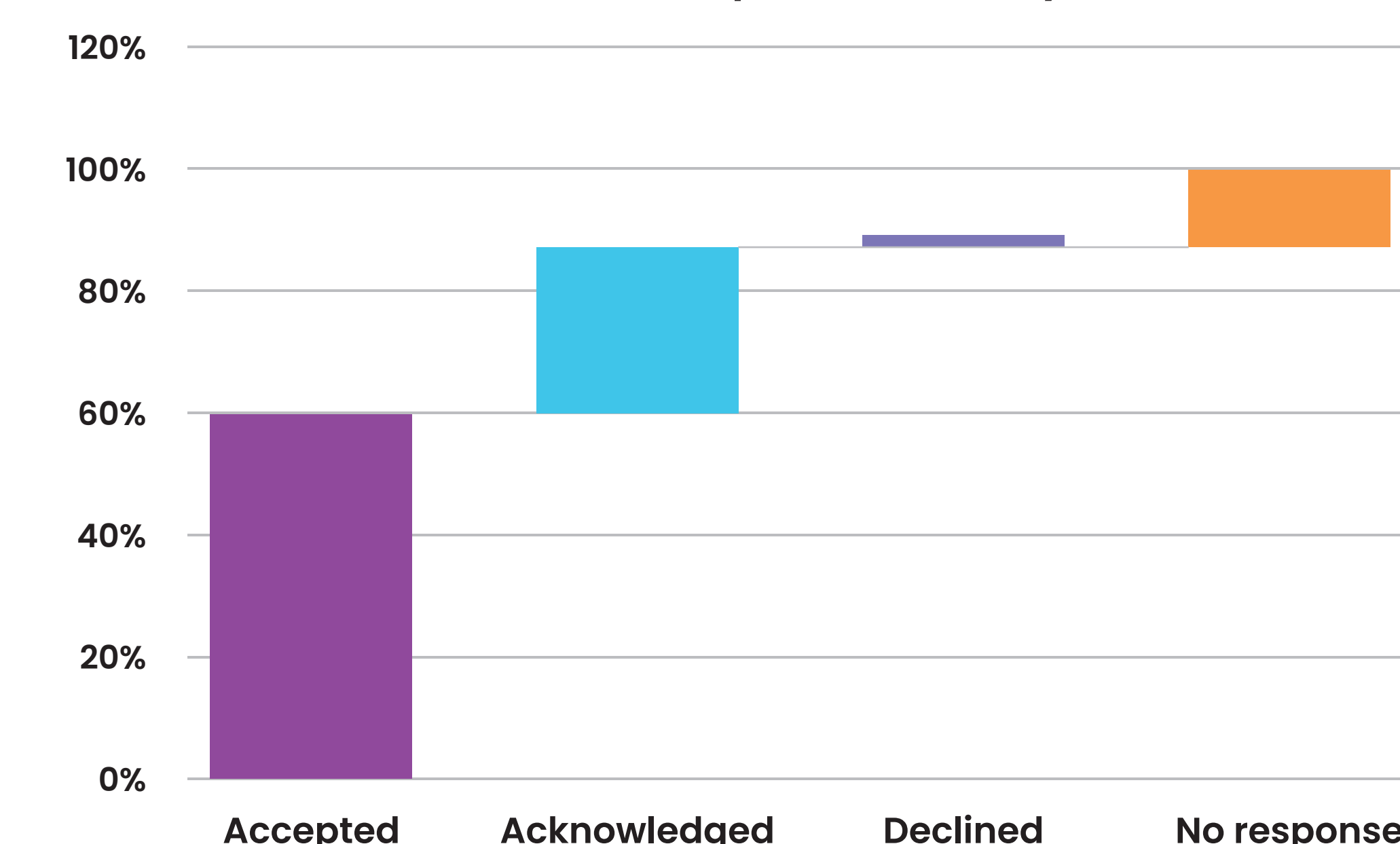
The Panel's Adverse Event Grade Definitions (non-exhaustive list)		Event Count (n)
Patient Support	Adding copay cards or speaking about insurance issues.	68
Minor	Advising on vaccinations or non-adherence counseling.	93
Significant	More than simple counseling that requires provider intervention. Treated outpatient for causative issue.	38
Serious	Baseline medication labs not drawn (tuberculosis for biologic), deviation from standard of care or guidelines with no reasoning provided.	28
Lethal	Strong risk of death. Urgent attention needed immediately.	5
Total Event Count		232



Intervention by Therapeutic Area



Intervention Acceptance Rate by Provider



Discussion

There were 462 documented primary interventions for 232 patients with a mean intervention of 1.9 per patient. The most common primary interventions were drug-drug and drug-disease interactions, medication administration counseling, and medication adherence support. Providers accepted or acknowledged 94.5% of pharmacist interventions. Pharmacist interventions resulted in \$176,872 of cost avoidance over four months. **The combined net cost avoidance and savings difference in 340B to wholesale aquisition cost equaled \$990,872.**

This study demonstrated that pharmacist interventions and recommendations were overwhelmingly accepted by providers and patients. The impact of a clinical pharmacist's heterogenous interventions ultimately lead to improved clinical and financial outcomes.

Moving forward, Clearway Health is looking to incorporate and standardize pharmacist tracking to enhance metrics across all client sites.

References

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