EVALUATION OF THE ECONOMIC IMPACT OF SPECIALISTS OUTPATIENT CLINIC

PHARMACY INTERVENTIONS IN A TERTIARY INSTITUTION, SINGAPORE

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Introduction
- Many patients do not receive the intended beneficial effects of their treatment due to drug related problems.¹
- Pharmacists play an important role in reducing drug-related problems by initiating changes to patients' therapy and management.²
- Many studies quantified the importance of pharmacist in inpatient settings²³⁵, while several studies conducted in Europe and North America only involved specific patient groups or specific disease states (e.g. antibiotic use, geriatric patients).⁴⁻⁵

Objectives
- To evaluate the clinical and economic impact of outpatient pharmacy interventions performed in a tertiary institution, Singapore General Hospital (SGH).

Methodology

Figure 1: Study Design
- Study type: Retrospective study
- Materials: Interventions were extracted from patient management database (Citrix)
- Exclusion: Interventions that was duplicated or with incomplete data fields. Retail and emergency department prescriptions were excluded from this study.

Figure 2: Illustration of Various Phases in the Study

Table 1: Description of Levels of Estimated Cost Avoidance (ECA) and pre-determined for each ECA level based on Singapore national and/or SGH tariffs

<table>
<thead>
<tr>
<th>ECA Level</th>
<th>Possible outcomes after intervention</th>
<th>Estimated cost avoidance (SGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Improved quality of care</td>
<td>12.20</td>
</tr>
<tr>
<td>2</td>
<td>Reduced drug product cost</td>
<td>27.60</td>
</tr>
<tr>
<td>3</td>
<td>Avoided physician visit</td>
<td>35.00</td>
</tr>
<tr>
<td>4</td>
<td>Avoided drug order</td>
<td>62.00</td>
</tr>
<tr>
<td>5</td>
<td>Avoided emergency room visit</td>
<td>59.00</td>
</tr>
<tr>
<td>6</td>
<td>Avoided hospital admission</td>
<td>7,268.00</td>
</tr>
<tr>
<td>7</td>
<td>Avoided life threatening events</td>
<td>8,748.00</td>
</tr>
<tr>
<td>8</td>
<td>Rejection of recommendation by prescriber</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Results and Discussion

Figure 3: Comparison of Total Interventions and Estimated Cost Avoidance in an Outpatient Pharmacy in Singapore General Hospital

- The total ECA value over the 5 months period was estimated to be $S1,488,206. The highest was recorded in July 2012 whilst the lowest recorded in September 2012.
- The total number of ECA level 6 interventions was 1671 which denoted avoidance of 1671 episodes of hospital admission over the 5 months period.
- It had generated the highest ECA value $S1,366,008 which represented 91.8% of total ECA values generated over the 5 months period.
- ECA level 1, 3, 5 and 7 interventions shared the second place in terms of the economic impact.

Conclusion
- The generalised ECA tool with local monetary ECA value is an useful aid to estimate the large number of pharmacy intervention.
- Our study showed that each intervention resulted in an average ECA value of $S423.
- The increase pharmacist input in screening prescriptions has resulted in an increased number of interventions and prevented larger number of DRP.
- This is subsequently translates into a positive impact on health and economic outcomes.

References
5. Chrumney EC, Robinson LC. The effects of pharmacist interventions on patients with polypharmacy. Pharmacy Practice 2008; 6:4