The impact of clinical pharmacists charting unintentionally omitted medicines on the number of missed doses in an acute medical unit

**Introduction**

Medication errors at transitions of care are a significant challenge facing patient safety. Unintentional omissions form the majority of medication discrepancies on admission to hospital, leading to missed doses. Missed doses consequently have the potential to negatively impact and severely harm patients. There has been significant progress worldwide in expanding the role of pharmacists in the medication reconciliation process. In these advanced practice models, pharmacists are seen as a core part of the multidisciplinary team, given greater responsibility and accountability to chart, initiate and modify medicine therapy.

**Aim of the project**

The aim of the project was to compare a pharmacist–doctor collaborative charting model in the acute medical unit (AMU) with standard care, focusing on missed doses associated with unintentional omissions.

**Methods**

The project was conducted in AMU at St. Vincent’s University Hospital between May and July 2015. The project was composed of two sequential, prospective phases: Arm 1, the ‘standard care arm’ reflected current practice and Arm 2, the ‘intervention arm’, reflected the pharmacist–doctor charting model. The pharmacist-led medication reconciliation process in both arms included:

1. Admission medication history taking
2. Comparing the pre-admission list with the medication record
3. Medication review and determining unintentional discrepancies
4. Communicating with the medical team

For **unintentional omissions** identified by the pharmacist, the pharmacist had the following options on how to proceed.

**Primary outcome measure: Missed doses**

The primary outcome measure was the number of missed doses due to unintentional omissions and compare missed doses between each arm. The clinical significance of missed doses due to unintentional omissions was also assessed using the National Patient Safety Agency (NPSA) omitted and delayed medicines implementation tool.

**Appropriateness of pharmacist charting**

The AMU consultant retrospectively reviewed each incident of unintentional omission and stated her preference for the pharmacists’ action. This was then compared with the AMU pharmacists’ intentions on how they would proceed (when a countersignature was not required).

**Results**

**Sample population**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Arm 1 (n=30)</th>
<th>Arm 2 (n=30)</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>13 (43%)</td>
<td>14 (47%)</td>
<td>0.795* (NS)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>75.5 (23)</td>
<td>65.5 (28)</td>
<td>0.371* (NS)</td>
</tr>
<tr>
<td>LOS (days)</td>
<td>5.5 (4)</td>
<td>5 (4)</td>
<td>0.649* (NS)</td>
</tr>
<tr>
<td>Per patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of pre-admission doses</td>
<td>7.87 (3.68)</td>
<td>6.2 (3.52)</td>
<td>0.079** (NS)</td>
</tr>
<tr>
<td>Rate of unintentional discrepancies</td>
<td>2 (2)</td>
<td>1 (1)</td>
<td>0.001* (SS)</td>
</tr>
</tbody>
</table>

**Table 1 Characteristics of sample population and unintentional discrepancies on admission**

**Table 2 Clinical interventions made by the clinical pharmacists in Arm 2**

**Discussion**

This project highlights that unintentional medication discrepancies occur on admission to AMU and that pharmacists have an important role to play in identifying and resolving errors. Omissions were the most common type of discrepancy identified in AMU and were the main reasons for patients missing doses of medicines.

When compared with standard care, the pharmacist–doctor collaborative charting model did not statistically significantly reduce the number of missed doses related to unintentional omissions. The local requirement that the pharmacists’ orders had to be co-signed by a doctor curtailed the pharmacist’s ability to make timely interventions. When omissions that the pharmacists were unable to chart, because a doctor was not available to co-sign, were taken into consideration, a statistically significant difference in missed doses was likely.

The appropriateness of the pharmacists to chart (where a countersignature was not required) was confirmed by the high level of agreement with the AMU consultant’s stated preferences. Communication among the multidisciplinary team emerged as a key component in this new model and there was a high level of acceptance from stakeholders for this intervention.

**References**


**Figure 1** Overview of discrepancies

**Figure 2** Analysis of medicines that the pharmacists were happy to chart (using the ATC classification system)