Reducing prescribing errors associated with inpatient electronic prescribing systems: an investigation of pharmacist interventions to prevent prescribing errors
Alsharani F, Marriott JF, Cox AR.
School of Pharmacy, Institute of Clinical Sciences, University of Birmingham, Birmingham, B15 2TH, UK

Introduction
Pharmacist prescribing interventions have been considered a potentially valuable tool to improve the safety and appropriateness of prescribing. The incidence and types of medication prescribing errors in pharmacists’ interventions may inform preventive strategies.

Aim of Study
The aim of this study was to examine the number, types, and severity of prescribing errors documented by hospital pharmacists within an electronic prescribing system and their role in identifying and preventing prescribing errors.

Methods
Pharmacist interventions at a large teaching hospital, operating an e-prescribing information and patient management system, undertaken as part of their routine practice was analysed in a retrospective 1 month study to detect prescribing errors. Error classifications were modified from the EQUIP study[1] to suit electronic prescribing errors; severity of errors was pharmacist self-assessed using the EQUIP study severity scale.

Results
Pharmacists logged 1629 interventions on the e-prescribing system. Ninety one percent (n=1481) of prescribing errors were identified and rectified before reaching patients. Common drug classes involved were the cardiovascular system (20.5%), anti-bacterials (15.7%), and central nervous system agents (14.5%). Errors most often occurred within general medicine wards (61%). Seventy five percent of all prescribing errors identified consisted of omission of medications (42.6%), dosing errors (18.2%) and data entry error (15.7%). Prescribing errors on admission to hospital were the largest group, and over 30% were judged potentially significant to lethal in severity (Figure 1).

Figure 1: Location and potential severity of medication errors in pharmacist interventions

<table>
<thead>
<tr>
<th>Error Classification</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lethal</td>
<td>0.1%</td>
</tr>
<tr>
<td>Serious</td>
<td>5%</td>
</tr>
<tr>
<td>Significant</td>
<td>26.3%</td>
</tr>
<tr>
<td>Minor</td>
<td>68.4%</td>
</tr>
</tbody>
</table>

Conclusion
• Pharmacists detected a significant number of important prescribing errors
• E-prescribing systems do not prevent all errors
• The majority of pharmacist interventions were acted upon
• Further optimisation of the pharmacist role within electronic prescribing systems is required


Presented at the 17th Annual Meeting of the International Society of Pharmacovigilance, Liverpool, UK, 15th to 18th of October 2017