Introduction:
Medication errors commonly occur at transitions of a patient's care; however, evidence suggests that medication errors are more common on discharge. A study undertaken in Ireland in 2010 found that medication non-reconciliation occurred in 50% of patients' discharge documentation. Evidence from the literature has shown that pharmacist intervention has a positive impact at the transition of a patient's care at discharge through a variety of interventions. Medication Reconciliation (MR) at admission and discharge from the hospital setting has been found to reduce the risk to patient safety and improve communication between care settings.

Aims and objectives:
Aims:
Evaluate a pharmacist-led discharge service via the measurement of:
- The quality of information provided at discharge.
- Acceptability of the service to all stakeholders.

Objectives:
- Assess if the discharge prescription for patients receiving the pharmacy-led discharge service has a greater compliance with the HIQA National Standard for Patient discharge information than the patients receiving standard pharmacy service and no pharmacy service.
- Evaluate stakeholders' satisfaction with the service.
- Assess the effectiveness and user acceptability of an electronic-based medication reconciliation system versus a paper-based system.

Methods:
Study A:
- The study took place in a 270-bed acute general hospital over a four-month period involving seven inpatient wards.
- The intervention group (n=94) received MR on admission. The process on discharge involved both preparation of the discharge prescription and clarification of any outstanding issues.
- The control wards consisted of two groups; one which received no pharmacy service (n=100), and the other received MR on admission only (n=10).
- The discharge prescriptions of the three groups were audited against the HIQA national standards for patient discharge summary.

Study B:
- Satisfaction surveys were undertaken of the stakeholders involved in this project i.e. GPs, Community Pharmacists, Hospital nurses and doctors.

Study C:
- An electronic MR system (eClinical) was introduced to generate a MR and a discharge prescription.
- A survey was developed for community pharmacists and GP to determine their satisfaction with the electronically generated prescription.
- The electronically generated prescriptions were also audited against the HIQA standards (n=10). Data was recorded and analysed using Microsoft Excel.

Results:
Compliance of Discharge Prescriptions with the HIQA National Standard of Patient Discharge Summary Information

<table>
<thead>
<tr>
<th>Allergy status recorded</th>
<th>Reason for new medication prescribed</th>
<th>Reason for medication changes</th>
<th>Reason for medication stopped</th>
<th>All medication on prescription correct for dispensing</th>
<th>Antibiotic duration documented</th>
<th>Prescription written generically</th>
<th>Prescription meeting the legal requirements</th>
<th>All items on the prescription legible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention Group</td>
<td>Medication Reconciliation on Admission Only</td>
<td>No Pharmacy Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95.7%</td>
<td>9.5%</td>
<td>9%</td>
<td>3%</td>
<td>48.5%</td>
<td>29.2%</td>
<td>31.5%</td>
<td>85.1%</td>
<td>70.2%</td>
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</tbody>
</table>

Compliance of eClinical Discharge Prescriptions with the HIQA National Standard of Patient Discharge Summary Information

<table>
<thead>
<tr>
<th>Allergy status recorded</th>
<th>Reason for new medication prescribed</th>
<th>Reason for medication changes</th>
<th>Reason for medication stopped</th>
<th>All medication on prescription correct for dispensing</th>
<th>Antibiotic duration documented</th>
<th>Prescription written generically</th>
<th>Prescription meeting the legal requirements</th>
<th>All items on the prescription legible</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>100%</td>
<td>87.5%</td>
<td>90%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>70%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Clearer Prescriptions with more information
- Hospital Doctor: 60%
- GP: 50%
- Community Pharmacist: 40%

Discussion:
- This study demonstrates the positive impact that pharmacist intervention has on the accuracy and completion of discharge prescriptions.
- Complete and accurate information in relation to a patient’s discharge medication is of paramount importance in the efficient, accurate and safe dispensing of the correct medications.
- The reasons for new medications prescribed, medication changes and medication stopped were all significantly higher in the intervention group due to pharmacist involvement in the discharge prescription, as there was no significant difference between the control groups.
- This study clearly shows that pharmacist involvement greatly reduces ambiguity associated with incomplete drug information, therefore reducing the risk to patients and facilitating the accurate and efficient transfer of information.
- No or lack of information on new or discontinued medications was shown to be a common issue on discharge prescriptions prepared by doctors as found in the surveys, which correlates with the results shown in the audit of compliance of Discharge Prescriptions with HIQA standards.
- The most commonly reported benefit was clearer prescriptions containing more information. Other key benefits were time saving, reduced phone calls, reduced errors and improved patient safety.

Conclusion:
- Pharmacist involvement in the preparation of a patient's discharge prescription improves compliance with the HIQA National Standards for Patient Discharge Information.
- Discharge prescriptions prepared by the pharmacists were shown to have fewer discrepancies than discharge prescriptions prepared by hospital doctors.
- Discharge prescriptions prepared via eClinical scored favourably with the HIQA Standards for Patient Discharge Summary Information.
- Feedback on the use of ePrescriptions was very positive from GPs and community pharmacists and will hopefully lead to the extension of this service.
- Suggestions for future improvements include extension of the service to a wider cohort of patients.

References:
1. Ronan J, Kavanagh H, McCool S, School of Pharmacy, University College Cork. 2013 National Standard for Patient Discharge Summary
5. Health Information and Quality Authority. 2013 National Standard for Patient Discharge Summary
6. McCool S, School of Pharmacy, University College Cork.