Pharmacist Prescribing in Pre-Admission Clinic (PAC):
A prime opportunity to apply pharmacists’ expertise
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Royal North Shore Hospital (RNSH)

Admission Process
- Medication history obtained at point of admission
  - Documented directly onto patient medication chart
  - Foundation for all other changes

Figure: Admission Process

Australian Research
- Local research on pharmacist prescribing
  - Pre-Admission Clinic
    - Screening procedure
    - Pharmacotherapeutic interventions
    - Stopping/starting medications
  - Pharmacist involvement in PAC
    - Current role:
      - Medication history taking
      - Counselling

Current Issues in PAC
- Prescribing errors persist via doctors
  - Medication omission
  - Incorrect dose
  - Time and frequency
  - Inefficiency
- Development of Pharmacist Prescribing Service in PAC
  - 2 specialist PAC pharmacists at Royal North Shore Hospital (RNSH)
  - Daily service (16 patients/day)
  - But no prescribing previously

Phases of Study
Baseline (2009) by Cao et al.
- Proposal and Protocol for service
- Feedback Survey
- Baseline Data
- Pilot Stage
- Review Phase
- 6 months trial
- Ethics and Drug Committee approval obtained

Aim and Objectives
- To trial a pharmacist prescribing service, comprising medication charting, in PAC at Royal North Shore Hospital
  - Objectives
    - To evaluate the impact of pharmacist prescribing on service/workflow in PAC (consultation time, staff feedback)
    - To evaluate the impact of pharmacist prescribing in terms of error reduction (accuracy and completion)
    - To identify areas which may be improved for sustained implementation of service (feedback)
Study Method

- Data collected prospectively
  - Direct observational measures and data extraction from medication charts
  - Two “dummy runs”

- Primary outcome measures
  - Process measures (“Appropriateness”):
    - Number of medication charts/documents completed
  - Clinical measures (“Effectiveness”):
    - Accuracy/Completeness of charts, chart amendments, consultation times
  - Comparative data (pre- vs post-intervention) (“Effectiveness”):
    - Accuracy/Completeness of charts, consultation times

- Purpose-designed data collection instruments

Flyer, Stickers and Communication Sheet

To be attached to the front of the medication chart

Communication sheet

Results

- Overall:
  - 2x PAC pharmacists
  - 12x Junior Medical Officers and 1 Resident Medical Officer
  - 72 medication charts completed
  - 12 “Communication Sheets” used
  - 1 “Medication Discharge Sticker” used
  - Feedback obtained from 12 PAC staff

Mean Consultation Times Pre- and Post-Intervention for Pharmacists and Medical Officers (n=72)

<table>
<thead>
<tr>
<th></th>
<th>Pre-Intervention (n=56)</th>
<th>Post-Intervention (n=72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist Mean Consultation Time (in mins)</td>
<td>18.9</td>
<td>25.0*</td>
</tr>
<tr>
<td>Medical Officer Mean Consultation Time (in mins)</td>
<td>25.0</td>
<td>19.0*</td>
</tr>
</tbody>
</table>

Figure: Mean Consultation Times Pre- and Post-Intervention for Pharmacists and Medical Officers (p<0.001)

Completeness of Medication Charts

Overall:

- Pre-intervention: 5.4% complete
- Post-intervention: 80.6% complete (p<0.001)

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<th>Pre-Intervention (n=56)</th>
<th>Post-Intervention (n=72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of Charts with at least ONE missing criteria*</td>
<td>94.6%</td>
<td>19.4% (p&lt;0.001)</td>
</tr>
<tr>
<td>Proportion of Charts with TWO or more missing criteria*</td>
<td>80.4%</td>
<td>4.2% (p&lt;0.001)</td>
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</table>

*Compliance with NSWIC requirements
Incomplete Criteria

Figure: Incomplete criteria on regular medication chart pre- and post-intervention (*p<0.001)

Accuracy of Medication Charts

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<tbody>
<tr>
<td>Percentage of Charts deemed INACCURATE</td>
<td>41.1% (p&lt;0.001)</td>
<td>1.4%</td>
</tr>
<tr>
<td>Percentage of Charts with INCORRECT MEDICATIONS</td>
<td>7.4%</td>
<td>1.4% (p&lt;0.001)</td>
</tr>
</tbody>
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Feedback from PAC Staff

› Staff strongly AGREED that:
  • PAC pharmacists were competent and adequately skilled for such a prescribing function

› Staff strongly AGREED that the service led to:
  • Increased accuracy of medication charts
  • Increased completeness of medication charts

Perceived Benefits

› medication charts easier to read
› consistency in charting
› pharmacists are concentrating only on medications and making sure they are correct – so this is their field of expertise
› Pharmacists aware of what is on the formulary and can substitute if necessary or ask patient to bring non-formulary drugs, so NOT miss out dose

Perceived Disadvantages

• The JMO’s/CMO’s are not regularly signing the medication charts, which leads to increased workload as you either have to chase the doctor who saw the patient in PAC or get the medication chart rewritten.
• De-skilling the JMO’s
• May cause delays in the clinic on busy days

Significance of study

› Increased efficiency and streamlining of current PAC workflow
› Improve accuracy and completeness of medication charts

› Potential reduction in:
  • Post-operative medication discrepancies
  • Inappropriate medication administration

› Future
  • Longer (6 month) trial in PAC
  • Prospective trials at other points of entry (ED, Admissions Department)
Medication History taking and Prescribing

- Doctors record less accurate history compared to pharmacists4,5
- 25% medications omitted
- <22% complete medication histories

Pharmacist prescribing as an intervention6
- Using accuracy and knowledge
- Bridging the gap between medication history taking and prescribing
- Error reduction and patient satisfaction