Pharmacy Services in the Emergency Department
Targeting the Highest Risk Patients

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‘When all else fails, there’s always A&E’
Inpatient mortality increased by emergency department overcrowding

‘Presenting to an emergency department during shifts with longer waiting times, reflected in longer mean length of stay, is associated with a greater risk in the short term of death and admission to hospital in patients who are well enough to leave the department. Patients who leave without being seen are not at higher risk of short term adverse events.’\(^2\)
High Risk Area

Forced to Prioritise the Sickest Incoming Patients

"I don't know why I was suspended from doing surgery! I'm not the one who loaded the Appendix app rather than the GallBladder app!"

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Triage Priority in ED

Severity of Presenting Complaint

(How sick is this person right now)

OR

Potential Severity Related to Body System

(Red Flags for high risk conditions)
2 Cases

- **85 year old male**
  - PD, IDDM, CVS, Falls
  - Generally Unwell, off legs.
  - Daughter phones ambulance
  - Obs' Stable
  - Triage: Cat 5 (2hrs +)

- **24 year old male**
  - No PMH
  - Non-Traumatic Back Pain on Waking Up
  - Pins and Needles and Numbness in Both Feet.
  - Obs' Stable
  - Triage: Cat 4 (1 - 2 hrs)

Greater Chance of early deterioration

More Worrying Presenting Complaint
Local Incident Data

- 174 individual Medication related Datix’s submitted (April 2015-16).
- 56 related to Omissions.
- 6 caused actual harm.

- Likely significant under-reporting.

- Reviewing cases, argument that routine clinical pharmacy presence would mitigate/prevent considerable amount of these incidents.
ED : Inpatient Admissions

- A&E Admissions: 56%
- Baby Born at Home as Intended: 9%
- Booked: 2%
- Born In Hospital (This Provider): 12%
- Born Outside Hospital: 3%
- Consultant Clinic: 17%
- Emergency Department: 1%
- Emergency from Other Provider: 0%
- GP Admission: 1%
- Maternity Ante-Partum: 0%
‘We are failing at providing high quality care of patients pre-existing medical conditions in ED’
Pilot Pharmacy Service

‘Identification, Prioritisation, Reconciliation and Supply of Medications for High Risk Patients’

AND

‘Proactive and Rapid Access to Specialist Pharmaceutical Advice for all MDT members’
Time Critical Medications

• Comprised around 50% of all interventions made in pilot.
• NPSA\(^3\) and Internal Priority\(^4\) from previous incidents.
• Improved transfer of care between intra-hospital departments.
• Feedback from nursing staff.
Chronic Kidney Disease/AKI

- Feedback from all clinician subtypes.
- Considerable literature around pharmacist advice leads to improved outcomes\(^5\)
- Least amount of information in formal guidance.
Falls & Polypharmacy

• Interventions able to be made in patients requiring ED discharge.
• Early Identification of potential ADRs.
• Review & Rectification of medication regimes prior to DC.
Higher Risk Patients – 75% more likely to experience a medication related error/incident as an inpatient.
Further Areas

- IV Insulin requirement.
- High Risk Red Sepsis.
- Status Epilepticus.
- Pregnancy.

- Priority Groups established from MDT consultation, severity of audited interventions and local/national priority guidance.
### TRIAGE CAT A
- High Risk of Deterioration in ED (15% of patients)
  - High Risk Anticoagulant
  - Parkinsons/Myasthenia
  - Steroids for Addisons
  - Insulin T1DM
  - Transplant Immunomodulators

### TRIAGE CAT B
- Potential risk of Deterioration in ED (25% of patients)
  - Antiepileptics
  - Insulin T2DM
  - Lower Risk Anticoagulants
  - Strong Opiates
  - Other Immunosuppressants

### TRIAGE CAT C
- Low risk of Deterioration in ED (35% of patients)
  - Situationally relevant cardiovascular regimes.
  - Discretionary Cases

### TRIAGE CAT T
- Exclusively flow related (25% of patients)

### All other Lower Risk Presentations

### Medication Criteria for Early Intervention
- **High Risk Anticoagulant**
- **Parkinsons/Myasthenia**
- **Steroids for Addisons**
- **Insulin T1DM**
- **Transplant Immunomodulators**

### New Diagnosis Criteria for Early Intervention
- **DKA/IV Insulin requirement**
- **Symptomatic Hyperkalemia**
- **Status Epilepticus**
- **AKI Stage 2 or 3**

- **High Risk Red Sepsis**
- **First Seizure**
- **Symptomatic Electrolyte Imbalance**
- **Stage 1 AKI**
- **Pregnancy/Breastfeeding**

- **Falls/Collapse**
- **(Polypharmacy)**
- **Chronic Kidney Disease**
## Two Complimentary Triage Systems

<table>
<thead>
<tr>
<th>ED Clinician Triage</th>
<th>Pharmacy Triage</th>
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</thead>
<tbody>
<tr>
<td>Severity of Presenting Complaint</td>
<td>Potential for deterioration of comorbidity</td>
</tr>
<tr>
<td>OR</td>
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</tr>
<tr>
<td>Potential Severity Related to Body System</td>
<td>Potential for Medication related error</td>
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</tbody>
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*We are here for you*
1434 total interventions, **816 (57%)** categorised as having potential to cause **serious or severe harm**.

~4x greater than trust average.

Potential cost saving\(^6\) £617,970 – £1,348,800

Potential prevented IP stays\(^7\): 345 bed days.
Flow – Impact on Acute Care Pathway

Parkinsons Related dose Omissions, early prevention within ED associated with reduced total IP stays.

Pharmacist intervention in Parkinsons patients in ED improved quality of care both within ED and base ward level.
Efficiency – ED Staff

**Nursing**
232 immediate critical medication supplies to nurses previously needing to source independently.

**Nursing Time Saved**
*161.7 hours.*

**Clinicians**
231 medicines information enquiries resolved requiring pharmacist input to resolve.

**Clinician Time Saved**
*192.5 hours*

*Estimated from staff survey results, 50 ED nurses
** Estimated from staff survey results, 31 decision makers.*
Technician Impact

• Prioritises lower priority patient profiles awaiting admission.

• Pharmacy standard drug history provided at ‘time zero’.

• 5-10 patients consistently seen in addition to pharmacist.

Pressure off admissions areas pharmacy staff, quicker discharges.

Earlier Accurate Drug Histories for clinicians.
Integration of Pharmacy Service into ED MDT

• ‘I think it greatly improves the safety and efficiency of the overcrowded Emergency Department’ (Jr Dr)

• ‘would be good to have a physical presence in ED. Often when drugs are needed it is time critical and having someone on hand for advice would be beneficial’ (Sister)

• ‘Very very useful in blue team, especially for those pts awaiting admission to inpt medical wards - can save clerking time for the admitting team’ (Cons)

• ‘Has prevented drug errors through continued education and vigilance in the department - improves patient care’ (Cons)
Next Steps...

• Expand Pharmacy Staff Presence.

• Expand Pharmacy Skill Set (IP).

• Automated Triage.

• Large scale study on impact on flow.
Final Thought

How much damage is done in ED, prior to a patient getting a full MDT review on an admissions area?
References