Harm due to Medicines: High Risk Medicines and Omissions
Chair: David Maxwell
Omitted medicines
High risk medicines
Prevention
Recognition
Response
Open
Share
 Participate
<table>
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<th>Topic</th>
<th>Speaker</th>
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<td>Missed medicines &amp; omissions</td>
<td>Ross Cheape</td>
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<tr>
<td>From audit to improvement: reducing avoidable missed medicines</td>
<td>Yogini Jani</td>
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<td>Facilitated discussion</td>
<td>Linda Patterson</td>
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<td>High risk medicines</td>
<td>Alister Maclaren</td>
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<td>Deterioration: Prevention, recognition and response</td>
<td>Arvind Veiraiah</td>
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<td><strong>Panel Debate – Safety is sorted; it’s time to move on to another dimension of safety</strong></td>
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Twitter
Join the conversation on Twitter, follow
#SPSPConf16
and remember to include it in your tweets

Free Wi-Fi available
Wi-Fi network: delegate
Password: haymarket
Patient Story - Cliff
Diane Murray
Improving Care for People in Scotland, A Focus on Deterioration: Prevention, Recognition and Response

Missed Medicines & Omissions
Ross Cheape
Omissions – the context

• Change of Prescription Sheet
• No process for review
• No data on the incidence of missed medicines
**Prescription and Administration Record**

### Medicines Reconciliation
- **Methes Reconciled on Admission**: YES
- **Date and Time this form prepared**: [Blank]
- **Symptomatic Relief Policy Declaration**
  - I authorise nurse/midwife administration of the medicines included in the symptomatic relief policy:
    - with the following exceptions:
  - **Community Pharmacy Information**
    - **Name**: [Blank]
    - **Address**: [Blank]
    - **Compliance Aid Details**: [Blank]
    - **Patient consent to share discharge information**: Y/N
    - **Print & Sign**: [Blank]

### Patient Details
- **Hospital Number**: [Blank]
- **Date of Admission**: [Blank]
- **Consultant Name**: [Blank]
- **Name**: [Blank]
- **CHI No**: [Blank]

### Once Only and Premedication Drugs
<table>
<thead>
<tr>
<th>Date</th>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Time (24hr)</th>
<th>Prescriber (Print &amp; Sign)</th>
<th>Given By</th>
<th>Time Given (24hr)</th>
</tr>
</thead>
</table>

**Notes**:
- Adults with Incapacity (Scotland) Act 2000
- Mental Health (Care & Treatment) (Scotland) Act 2003
- High Dose Antipsychotic Monitoring Applicable
- AFFIX PHOTOGRAPH

**Drug Allergies / Sensitivities**
- None Known
- Yes (provide details below)
### Nurse/Midwife Administration from Symptomatic Relief Policy
**Authorised Nurses/Midwives Only** (Maximum number of doses as per protocol)

**Warning:** Check the As Required and Regular Prescription sections to ensure that the drug has not already been prescribed by a doctor.

<table>
<thead>
<tr>
<th>DATE</th>
<th>DRUG</th>
<th>DOSE</th>
<th>ROUTE</th>
<th>TIME (24hr)</th>
<th>NURSE (PRINT &amp; SIGN)</th>
<th>GIVEN BY</th>
<th>TIME GIVEN (24hr)</th>
</tr>
</thead>
</table>

**Notes for Users**

1. Prescribe drugs generically using the Approved Name (except in circumstances where bioavailability differences between brands of the same drug are so important as to warrant prescribing by brand name e.g. in the case of sustained release lithium or theophylline).
2. All prescription entries must be legible and made so as to be indelible (black ink is recommended).
3. Print & Sign your full name clearly against each prescription entry.
4. Please document appropriate administration times using the 24 hour clock format.
5. When drugs are discontinued, draw a diagonal line through the prescription box, initial and date the appropriate boxes and record reason.
6. If an existing prescription entry is to be modified, delete the existing prescription and re-write the new instructions as a new prescription entry.
7. The following metric unit abbreviations must be used -
   - Milligram = mg
   - Gram = g
   - Millilitre = ml
   - Millimoles = mmol
   - Micromol / Nanomol / Unit - Do not abbreviate, write in full.
   - Fractious of a milligram should be written in micrograms. The use of decimal points should be avoided, if possible. If decimal points must be used a zero must be written in front of the decimal point (e.g. 0.5ml NOT .5ml).
8. The route of administration can be abbreviated using the following:
   - Q = oral
   - IM = intramuscular
   - SC = subcutaneous
   - NG = nasogastric
   - PV = per vagina
   - NJ = nasojejunal
   - TOP = topical
   - ETT = endotracheal
   - INHAL = inhaled
   - IV = intravenous
   - ID = intradermal
   - SL = sublingual
   - PR = per rectum
   - PEG = percutaneous endoscopic gastrostomy
   - RIG = radiologically inserted gastrostomy
   - PEJ = percutaneous endoscopic jejunostomy
   - ENT = enteral
   - INFUT = infused

Please note - Intrathecal must be written in full.

**FOR NURSES**

1. The ‘Once only’, ‘Regular’ and ‘As required’ sections should be checked at each administration round to ensure that inadvertent omission or double dosing is avoided.
2. Insert initials in the relevant date column and time row each time a drug is administered.
3. Check that all drugs prescribed at a certain time have been administered.
4. If a drug is not administered enter the reason code in the appropriate date column and time row and also document the full reason in the patient’s notes.

### Codes for Non-Administration of Drugs

- 1. Patient allergy/sensitivity
- 2. Patient refused
- 3. Drug not available
- 4. Nil by mouth/sisting
- 5. Patient unavailable
- 6. Patient asleep
- 7. Time varied on doctor’s instructions
- 8. Dose withheld on doctor’s instructions
- 9. Nausea/vomiting
- 10. Unable to swallow
- 11. No intravenous access
- 12. Patient Self-Administration of Medicine
- 13. Other - Record in nursing notes
- 14. Prescription clarification required
- 15. Given > 30 mins late (state time)
<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Date</th>
<th>Time</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetracycline 500</td>
<td>1 TAB</td>
<td></td>
<td>10/2/14</td>
<td>&lt;</td>
<td>LUMECYCLINE CAPSULE</td>
</tr>
<tr>
<td>Balsamum Cream</td>
<td>1 APP</td>
<td>TOP</td>
<td>10/2/14</td>
<td>&lt;</td>
<td>DATE</td>
</tr>
<tr>
<td>Penicillin G 750 MU</td>
<td>1 APP</td>
<td>TOP</td>
<td>10/2/14</td>
<td>&lt;</td>
<td>DATE</td>
</tr>
<tr>
<td>Clopitol 25</td>
<td>10 mg</td>
<td></td>
<td>12/2/14</td>
<td>&lt;</td>
<td>DATE</td>
</tr>
</tbody>
</table>
And so began the audits...
Number of Missed Doses July by Drug Class
(excluding Codes 8 & 12 Total = 54)

- Physical: 32
- NRT: 5
- Benzodiazepine: 10
- Antidepressant: 1
- Antipsychotic: 6

Number of Missed Doses (n)
Ward X Reasons for Missed Medications July (Total = 129)

- Patient Refused: 25
- Drug not available: 13
- Patient Unavailable: 10
- Patient asleep: 3
- Not Recorded: 2
- Other: 1
- Doctor's Instructions: 8
- Patient self-administration: 67

Reason of Missed Dose

Number (Total 129) n
So What?

• These audits helped us understand what was happening

• How did they inform practice?

• ...We focussed on omissions in recording ...
Lead in to improvement work

• Notice to staff explaining:

“A Blank Space is a Medication Anomaly which may have serious implications for practice and care”
Wednesday Tea-Time has a reliable process...

<table>
<thead>
<tr>
<th>Day</th>
<th>Medication blanks</th>
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</thead>
<tbody>
<tr>
<td>Mon</td>
<td>2</td>
</tr>
<tr>
<td>Tue</td>
<td>4</td>
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<tr>
<td>Wed</td>
<td>6</td>
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<td>Thu</td>
<td>8</td>
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<td>Fri</td>
<td>10</td>
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<td>Sat</td>
<td>12</td>
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<tr>
<td>Sun</td>
<td>14</td>
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<table>
<thead>
<tr>
<th>Time</th>
<th>Number of blanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>2</td>
</tr>
<tr>
<td>13:00</td>
<td>10</td>
</tr>
<tr>
<td>18:00</td>
<td>12</td>
</tr>
<tr>
<td>22:00</td>
<td>14</td>
</tr>
</tbody>
</table>

Times of blanks

#SPSPCONF16
“WE DON'T WANT YOU TO VIEW THIS AUDIT COMMITTEE AS BEING IN ANY WAY CONFRONTATIONAL”
The culture change

• Focus on accountability and the role of Nursing

• Professional Regulation

• Public expectation – transparency

• Having difficult conversations
And then...

• HePMA!
  • No blank spaces when recording medicines
  • Data around missed medicines – why, when and what
  • Easy audit processes
  • Efficient Medicine Administration
From audit to improvement: reducing avoidable missed medicines

Dr Yogini Jani
Consultant Pharmacist & Medication Safety Officer
Medicines in the NHS

Overall in the NHS
- £14.4 billion in 2013-14
- Hospital use 40.1% of total cost

Community
- over 1 billion prescription items
- average of 2.7 million items every day

UCLH average
- 6.4 million inpatient doses per year
Medicines in the NHS

Between 30% and 50% of medicines prescribed for long-term conditions are not taken as intended.
Policies & guidelines
- Standards of practice

Education & training
- eLearning
- Prescribing skills
- Safe administration

Medicines safety indicators
- Dose omissions
- Allergy status

Knowledge & responsibility
- Individuals
- Team

UCLH Medication Safety Committee Strategy – 2009 to 2014
The WHYS? of dose omissions

Why is it important?

The implications of delayed and omitted doses have been highlighted by the National Patient Safety Agency in the UK:

"Medicines are one of the most widely used interventions in healthcare; to make sure that the intervention is effective, it is important that medicines are prescribed, dispensed and administered correctly."

Why might doses be omitted?

An in depth review and audits indicated omissions could be broadly categorised into preventable and unpreventable.

Unpreventable omissions were those where there was a documented reason for the omission e.g. awaiting results of therapeutic monitoring or patient refusal

Preventable omissions related to unavailability of medicines, and failure to document whether medicines had been given.

Case study 1

Medical Director: "Why was nebulised mist dose on Monday at midnight?"

- Medical and nursing staff blamed pharmacy for not supplying
- Pharmacy blamed ward staff for not putting away medicines delivery
- Ward staff blamed porter for dishing and leaving
- Porters blamed ward staff for reluctance to sign for delivery

Contributory factors

- Lack of communication between doctors nurses & pharmacy
- Lack of forward thinking and planning for medicines ordering and supply.

Why were medicines not available?

Case study 2

In depth review of 'unpreventable' reasons

- Patient unable to receive
  - "has NG tube"
  - "patient has dysphagia"

Clinical reason documented in notes

- "on sliding scale" (metformin)
- "not to be taken on clarithromycin"
- "CXR for NG placement not done"

Why were "unpreventable" omissions occurring?

Patient refusal

- "not in pain" (analgesia)
- "not nauseous" (antiemetic)

Contributory factors

- Failure to review prescription

Case study 3

Focussed audit in clinical area

20% of medicines not given or not documented as given.

Contributory factors

- Interruptions/ distractions
- Unable to find medicines in time due to storage issues
- Transfer of patients but not medicines
- Human error/ oversight

Why was administration not documented?
We deliver our **VISION**
UCLH is committed to delivering top-quality patient care, excellent education and world class research

Through our **VALUES**
We put your **safety** > and wellbeing above everything
We offer you the **kindness** > we would want for a loved one
We achieve through **teamwork** >
We strive to **keep improving** >

And our annual **OBJECTIVES**
- Deliver excellent clinical outcomes
- Improve patient safety
- Deliver high quality patient experience
- Integrate care with partners to improve patient care
- Achieve sustainable financial health
- Deliver the Quality, Efficiency and Productivity Programme
- Develop R&D and education
- Enable staff to maximise their potential
- Deliver waiting times in line with contract
- Implement service developments
Target – reduce by 50%

Preventable dose omissions → avoidable missed medication

- Medicine not available
- Failure to document
**Doctor**

Prescribe with appropriate administration timing to minimise delay
- E.g. anti-infective initiation, make sure that the first administration takes place within one hour
- Select the most appropriate administration time on the chart.

Speak to the Nurse and Pharmacist about any
- Urgent medicines
- New or changed prescriptions
- Unusual items that are not on the UCLH formulary
- and selecting most appropriate administration time on the chart.

Review the chart
- Check that patient has in fact received all the medicines
- Do you understand all the non-administration codes?
Give the medicines
  - Sign the chart
  - Document reason for not giving and follow up.

Assess medicine requirements at the start of each shift
  - What’s new?
  - What might run out soon?

Order medicines promptly
  - Be aware of stock and non-stock items
  - Consider pharmacy opening hours
  - Remember the emergency drug cupboard if out of hours.

Promptly unpack and put away delivered medicines
  - Is the medicines stored in the right place?

Transfer or return medicines from bedside locker / medicine trolley compartment as patient leaves the ward
Pharmacist

Liaise with nursing staff to
- Order medicines in a timely fashion
- Review stock list regularly (3-6 monthly)
- Respond to changes in practice as they occur.

Review the chart
- Check that patient has in fact received all the medicines.

Follow up and investigate reasons for non-administration
- Due to ‘drug not available’
- Other reasons – consider alternative formulations.
Monthly audits

University College London Hospitals

NHS Foundation Trust

![Chart showing monthly audits with target and baseline lines.](chart.png)
Trust objectives to include preventable dose omissions

Link nurses in pilot areas to lead local quality improvement strategies

Spread model and strategies from pilot areas across the Trust

Local Quality Improvement Strategies

Trustwide implementation of dose omissions toolkit
Orthopaedic surgery ward

Causes & Contributory factors

- Sickness rate.

What was done

- Review all drug charts at handover
- Leadership & role modelling.

What worked?

- Teamwork
- Bedside handover
- Visibility of data.
Critical care

**Causes & Contributory factors**

- Poor communication within MDT – not my problem!!!
- No awareness within MDT
- Staff unaware of potential harm on patients in CCU.

**What was done**

- Communication – any opportunity
- Pharmacy bags – encourage staff not to put them down and forget about them
- Relate it back to the patient – missed doses of IVAB’s could mean deterioration/sepsis
- Drs to improve communication when new drug is prescribed.

**What worked?**

- Teamwork: quality huddles, team days: EVERYONE’s issue!
- Management of medicines.
Cardiac services

Causes & Contributory factors
- Prescribers not signing and dating scripts
- Medicines not been delivered to POD lockers
- Medicines not transferred with patient
- Medicines not ordered.

What was done
- Medication link nurse
- Feedback to Drs about prescribing completely
- Engaged nursing staff to look for medications in lockers, treatment rooms, other wards
- Pilot Medication Safety Thermometer.

What worked?
- Teamwork
- Management and storage of medicines
- Data ownership and visibility.
Trust objectives to include preventable dose omissions

Link nurses in pilot areas to lead local quality improvement strategies

Spread model and strategies from pilot areas across the Trust

Local Quality Improvement Strategies

| Review of medicines receipt, storage and distribution in ward areas | Engage medical staff to ensure prescriptions were clear and complete | Increased use of bedside lockers and patients’ own medicines | Review of prescription chart at nurse handover to identify any unsigned administrations or dose omissions | Information about how to order medicines within and out of pharmacy opening hours | Publication of emergency drug cupboard stocklists |

Trustwide implementation of dose omissions toolkit
Preventable dose omissions
control limits set at one standard deviation from the mean
Baseline Aug 2011 - July 2012

- Matrons Committee
- Sisters’ Forum
- Dose omissions roadshow 1
- Link nurses in pilot areas
- Dose omissions roadshow 2 & link nurses in all areas
- Joint data collection
What do you think?
High Risk Medicines and Harms

What is a high risk medicine?

What are the characteristics?

What does harm look like?
What happened?

What could we improve?

Good practice points

What have we learnt?

www.knowledge.scot.nhs.uk/adverse-events/sharing-learning.aspx
**Medicine Sick Day Rules**

When you are unwell with any of the following:
- Vomiting or diarrhoea (unless only minor)
- Fevers, sweats and shaking

Then STOP taking the medicines listed overleaf

Restart when you are well (after 24-48 hours of eating and drinking normally)

If you are in any doubt, contact your pharmacist, GP or nurse

---

**Medicines to stop on sick days**

- **ACE inhibitors**: medicine names ending in “pril”  
  *eg, lisinopril, perindopril, ramipril*
- **ARBs**: medicine names ending in “sartan”  
  *eg, losartan, candesartan, valsartan*
- **NSAIDs**: anti-inflammatory pain killers  
  *eg, ibuprofen, diclofenac, naproxen*
- **Diuretics**: sometimes called “water pills”  
  *eg, furosemide, spironolactone, indapamide, bendroflumethiazide*
- **Metformin**: a medicine for diabetes

Initially produced by NHS Highland
Prevention
Recognition
Response

Harm

System Enablers

Medicines
Deterioration
## Medicines-related deterioration and enablers

<table>
<thead>
<tr>
<th>Medicine or medicine group</th>
<th>Harm (adverse effect or effect of omitted dose(s))</th>
<th>Deterioration (changes that are associated with increased likelihood of harm in that patient)</th>
<th>Interventions to PREVENT deterioration</th>
<th>Interventions to increase RECOGNITION of deterioration</th>
<th>Interventions to improve (structured) RESPONSE to deterioration</th>
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High Risk Medicines Table Top Work (Part 1 – 10 mins)

Read gentamicin example

Fill in at least one more row in the table (5 min)

Discuss with person next to you to identify any similar interventions (5 min)
High Risk Medicines Table Top Work
(Part 2 – 20 mins)

Review the A3 sheets with more worked out examples, edit and identify any new interventions that you might consider

Use dots provided to vote in the storyboards for your top three choices of interventions based on potential impact as well as feasibility

We will collate and share your responses via email after the conference
Omitted medicines
High risk medicines
Prevention
Recognition
Response
Omitted medicines can have a significant impact on patients in terms of loss of therapeutic effect and risk of deterioration, particularly for 'critical medicines'. Opportunities for medicines to be omitted can occur at many stages of the medicines management pathway. Examples include incomplete medicines reconciliation at points of transfer, errors in the transcription of medication charts in care settings, medicines not administered to patients as prescribed in care settings and patients not continuing repeat prescriptions when at home.

Medicine doses can be omitted or delayed for a variety of reasons. Studies have shown that between 5-15% of all medicine doses prescribed in acute care are omitted. Reasons for
Coming next

Panel debate – Safety is sorted; it’s time to move on to another dimension of quality

Pentland Suite – Level 3