Quantifying Distraction and Interruption in Anaesthetic Practice: a proposed study

Dr Laura Coleman
FY2 Royal Lancaster Infirmary
l.coleman@doctors.org.uk

Educational Supervisor: Professor Andrew Smith

6th November 2009: The 2nd North British Patient Safety Research Symposium
Outline

- Why Is Distraction and Interruption Important?
- Previous Research
- Why Study For The Anaesthetist?
- Proposed Study

- Objective: Advice, Suggestions, Comments
Why Study Distractions and Interruptions?

- Patient safety

- Previous research:
  - Task-Switching
  - Aviation

- Distractions and interruptions are not uncommon:
  - **Distraction:** A break in attention, observed by orientating away from a task or a verbal response
  - **Interruption:** A break in task activity, observed by the cessation of a task

- Complex and dynamic work environment:
  - Human error inevitable
  - Critical incident reporting – variable efforts of reporting
## Previous Research: The Surgical Team

### Methods

- **Observation:**
  - 30-50 operations:
    - Urology
    - General surgical
  - Predefined categories
  - Team involvement

### Discussion Points

- **High frequency of distractions and interruptions:**
  - Bleeps
  - Conversation
  - Environment
  - Equipment
  - Procedure
  - Telephones

- **Raise awareness of sources of distraction/interruption:**
  - Within specific surgical specialties
  - For team debrief

- **Further develop measures of interference**
Attention: Key demand of anaesthetic practice with a range of tasks both mental and practical to be undertaken simultaneously

Work environment
- Complex, dynamic, time pressured
- Varying complexity:
  - Increased action density at induction and emergence of anaesthesia
  - Mental activity continues intra-operatively
- Unexpected events are characteristic of anaesthesia
Pilot Study - Aims

1. To measure the *frequency* of distraction and interruption to the anaesthetist

2. To identify the *timing* of distraction and interruption to the anaesthetist

3. To identify the *cause and effect* of distraction and interruption

4. To explore if there are any *strategies already in place* which anaesthetists use to reduce distraction and interruption

5. To *refine and develop the methodology* for studying this topic to inform a future larger study
Pilot Study - Methods

- 4 months
- University teaching hospital
- Consent from consultant anaesthetists
- Approval from theatre managers
- Structured interviews (10)
- Observation
  - 50 anaesthetics:
    - Vascular (6)
    - Orthopaedic (6)
    - General Surgery (6)
    - Obstetrics (6)
    - Gynaecology (6)
    - Urology (6)
    - Emergency (7)
    - Day case (7)
- Pre-defined categories:
  - Bleeps
  - Case irrelevant communication
  - Communication difficulties
  - Equipment
  - External Staff
  - Procedural
  - Telephones
  - Work environment

- Record:
  - Frequency
  - Timing
  - Cause
  - Effect

<table>
<thead>
<tr>
<th>Step in Anaesthetic Process</th>
<th>Time</th>
<th>Source of interruption/distraction</th>
<th>Event description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetist arrives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking machine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawing up Medications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient arrives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Induction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insertion of airway device</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moving to Theatre</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Task recording sheet – Intraoperative

Observation no __

<table>
<thead>
<tr>
<th>Time (mins)</th>
<th>Intraoperative anaesthetic task</th>
<th>Source of interruption/distraction</th>
<th>Event description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Task Recording Sheet – Postoperative

Observation no __

<table>
<thead>
<tr>
<th>Step in anaesthetic process</th>
<th>Time</th>
<th>Source of interruption/distraction</th>
<th>Event description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation finished</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergence from anaesthesia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer to Recovery</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Future

- Establish basis for safety related improvements:
  - Training
  - Work environment design
  - Checklists
  - Personal responsibility

- Goal: Reduce error
  - Increase patient safety
  - Improve patient outcome
Your Comments Invited On...

- Are distractions always undesirable? Could they be beneficial?
- Is an observer themselves a source of distraction?

Anaesthetic Workload:
- Will the effect of a distraction/interruption change with stages of anaesthesia?
- Will the effect of a distraction/interruption change with the experience of the anaesthetist?

- Method of Recording
Thank-You

Dr Laura Coleman
FY2 Royal Lancaster Infirmary
l.coleman@doctors.org.uk

Educational Supervisor: Professor Andrew Smith

6th November 2009: The 2nd North British Patient Safety Research Symposium