How do clinical teams create and maintain Team Situation Awareness?
Why does this matter?

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To deliver safe, high quality care, health practitioners combine

• Technical skills with
• ‘Non-technical skills’ (NTS)
  – Cognitive and social skills that contribute to safe and efficient care
  – e.g. Anticipation; prioritisation; effective communication; decision-making; conflict resolution; seeking, offering or accepting help
Team Situation Awareness (TSA)

• I have chosen to focus on one important NTS - situation awareness within healthcare teams. I will:
  – Explain the key features of situation awareness and team situation awareness
  – Describe an in-depth study of four maternity teams and what was learnt about creating and maintaining TSA
  – Illustrate different patterns of maintaining TSA and describe some of their consequences
Situation Awareness includes:

• Gathering and updating information
  – Finding a balance between overload and over-focus (fixation)

• Interpreting information and updating interpretations
  – Patient, clinical team and current status of clinical service and resources

• Anticipation and linked actions
  – Prioritise, support, compensate, correct ...
Linking situation awareness to team outcomes

- From Mackintosh, Berridge, Freeth (2009), adapted from Helmreich & Schaefer 1994
Key features of model

• Situation awareness regarded as a precursor of patient safety and team efficiency
• Takes into account context, other factors contributing to outcomes and the feedback of outcomes into the context
Team Situation Awareness (TSA)

- Not just the sum of individuals’ situation awareness but an integrated perception of the current situation comprising complimentary and common knowledge.
  - Common knowledge is shared
  - Complimentary knowledge is not (fully) shared but its complementarily means that the team has the knowledge it needs
High TSA

• Leonard et al (2004) showed that effective teams had higher levels of TSA than low performing teams

• Teams can be considered to have high TSA when members posses the (complimentary and shared) TSA necessary for their roles
Creating and maintaining TSA

• Teams create and maintain TSA through
  – team process behaviours (e.g. communication, coordination, planning, leadership)
  – use of shared artefacts (e.g. patient notes, ‘whiteboard’, notices)
MOSES (Multidisciplinary Obstetric Simulated Emergency scenarios)

• MOSES study (among other things) examined TSA creation and maintenance in 4 Delivery Suites (Labour Wards) in UK
  – Multiple teams, multiple work spaces, workload fluctuates widely, limited scope for proactive planning, urgent problems can develop with little prior warning.
  – Multiple teams have partially overlapping and sometimes contested boundaries.
## Study design

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Supporting structures for TSA & decision making, Mackintosh N, Berridge EJ, Freeth D (2009)

- 277 hours of progressively focused ethnographic observation at main staff working hubs (not at ‘bedside’)
- Three main supports for TSA (‘whiteboard’, ‘handover’, the role of the delivery suite coordinator) plus some (often less formal) supplementary supports
- The **interplay** between supports is central to creating and maintaining TSA
Main supports in this context

- Whiteboard: ‘snapshot’, available at a glance ... updating, location, content, contributors
- Handover: uni-professional, interprofessional, formal/informal, levels of participation, who attends, relevance of information cascaded
- Delivery suite coordinator role (DSC): managing staff, workload, supporting less experienced colleagues, liaison across teams. Compromised if DSC mainly delivers care and neglects coordination.
Supplementary supports in this context

• Tended to be less formally constituted than main supports

• Could function alongside main supports or only appear when main supports became compromised

• Examples:
  – temporary expansion of roles of ward clerk or, less often, obstetric team leader
  – written briefings, ad hoc communication
Strong and balanced supports

**Whiteboard:**
- Large, clear
- Regularly updated (and consulted)
- Salient information regarding clients’ progress and needs

**Handover:**
- Sacrosanct
- Inclusive, but flexible

**Co-ordinator:**
- Client-free
- Supports other staff
- Regularly takes overview of current work & future needs (DS and wider unit)

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Barts and The London
School of Medicine and Dentistry

[www.smd.qmul.ac.uk](http://www.smd.qmul.ac.uk)
Outcomes

• Strong TSA
• Culture of shared ownership and prioritisation of situation awareness
• Proactive workload management
• If one support becomes compromised the others expand to compensate.
Diminished supports

**Whiteboard:**
- Limited / limiting
- OR
- Irregularly updated

**Handover:**
- Insufficiently inclusive
- OR
- Not prioritized

**Coordinator:**
- Inaccessible
- OR
- Role insufficiently developed
Outcomes

• Diminished supports
  – Reduced TSA
  – Individual work prioritised
  – Reactive workload management
  – Virtually no compensation when a support is compromised
Adaptive, but at risk
(occurred in low volume setting)

**Whiteboard:**
Infrequently updated/accessed

**Handover:**
- frequent informal updating
- *ad hoc* updating as supplement

**Co-ordinator:**
- Rarely client free
- Workload planning considered

[Sources: Barts and The London School of Medicine and Dentistry, www.smd.qmul.ac.uk]
Outcomes

• Adaptive supports
  – Culture of shared ownership of situation awareness and prioritisation
  – Proactive workload management
  – Variable levels of TSA
  – Safe with low to moderate workload, but at risk during busy periods due to limited ability to change habits
Supports for TSA

• How does it look where you work?
Summary

• TSA is a precursor to well-informed decision-making and, hence, good care

• We must expect individual supports for TSA to become compromised from time to time and so use supports in combination
  – Ideally, main supports for TSA are strong and balanced
  – Main and supplementary supports can expand to cover gaps when one support becomes compromised
• References
  – See separate bibliography

• Thank you for listening

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