

Teaching team skills: Current practice and future directions

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Human Factors for Patient Safety

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- Why teach team skills?
- What we know about training teams
- Current methods for team training
- Requirements for future development

Why teach team skills?

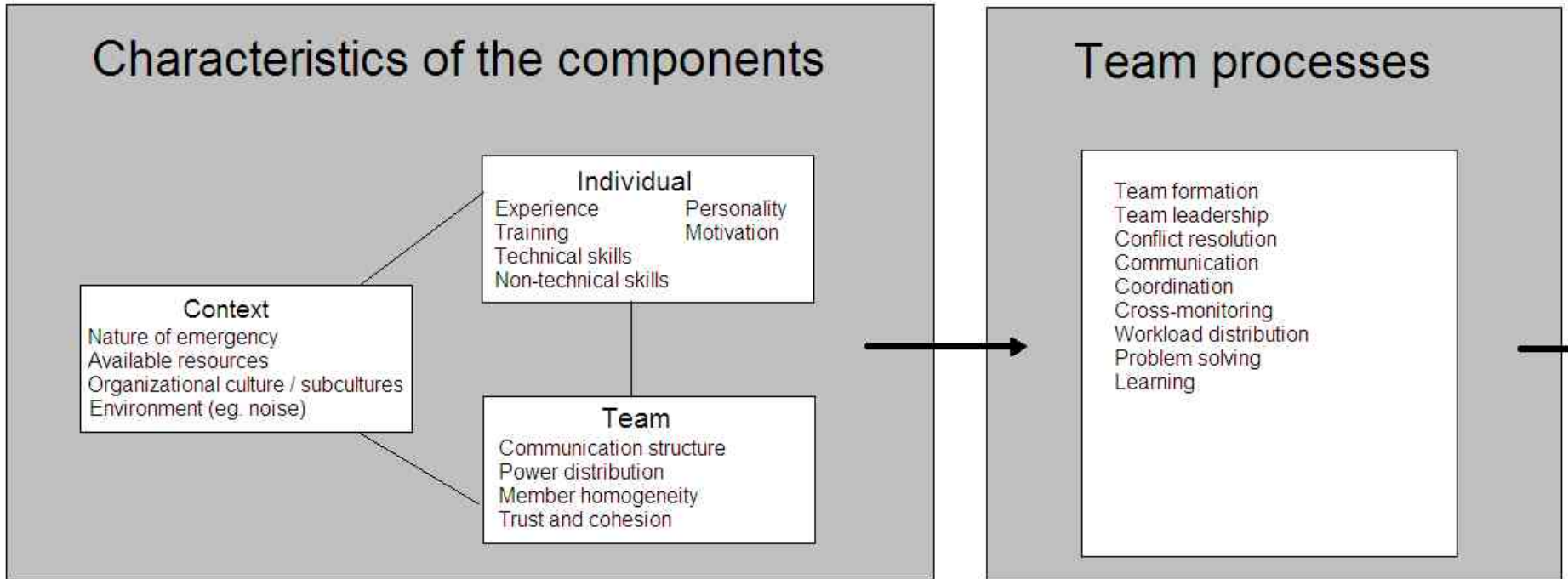
- Care is usually delivered by teams
 - Anaesthetic teams
 - Surgical teams
 - Emergency Medicine teams
 - Intensive care teams
 - Pain teams
- All multidisciplinary teams



- de Leval et al (2000)
 - *arterial switch operations*
 - *adverse events are trapped by good teamwork*
- Gawande et al (2003; 2004)
 - *insurance closed claims in the US*
- Christian et al (2006)
 - *observations in the operating theatre*

What is an 'effective team'

'One where each team member knows their role and are confident in carrying out their tasks in a coordinated way towards a shared goal.' (Jeffcott et al. 2008)



An integrated model of task performance after Salas et al. (1998)

The “big five” of teamwork

- 1) Team leadership,
- 2) Mutual performance monitoring,
- 3) Back-up behavior,
- 4) Adaptability
- 5) Team orientation.

Salas et al 2004

Coordination

- Team performance is important over and above merely task performance
- Coordination is a team's *raison d'être*
- Effective teams can exist without communication
 - Implicit coordination
 - Rarely works

- Undergraduate teaching occurs in silos
- Exposure to multidisciplinary work only occurs later
- Team training exists as ‘one-off’ sessions if at all
- Assessment of team behaviours is not undertaken - therefore not learned

Surgical Safety Checklist



World Health
Organization

Patient Safety

A World Alliance for Safer Health Care

Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?

- Yes

Is the site marked?

- Yes
 Not applicable

Is the anaesthesia machine and medication check complete?

- Yes

Is the pulse oximeter on the patient and functioning?

- Yes

Does the patient have a:

Known allergy?

- No
 Yes

Difficult airway or aspiration risk?

- No
 Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?

- No
 Yes, and two IVs/central access and fluids planned

Before skin incision

(with nurse, anaesthetist and surgeon)

Confirm all team members have introduced themselves by name and role.

Confirm the patient's name, procedure, and where the incision will be made.

Has antibiotic prophylaxis been given within the last 60 minutes?

- Yes
 Not applicable

Anticipated Critical Events

To Surgeon:

- What are the critical or non-routine steps?
 How long will the case take?
 What is the anticipated blood loss?

To Anaesthetist:

- Are there any patient-specific concerns?

To Nursing Team:

- Has sterility (including indicator results) been confirmed?
 Are there equipment issues or any concerns?

Is essential imaging displayed?

- Yes
 Not applicable

Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:

- The name of the procedure
 Completion of instrument, sponge and needle counts
 Specimen labelling (read specimen labels aloud, including patient name)
 Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:

- What are the key concerns for recovery and management of this patient?

- Comparatively very little in health domain
- Most from
 - military
 - aviation
 - manufacturing industry
 - nuclear power

Translation from other settings

- Stable or transient team roles?
 - Does the person in the specified role perform the same tasks?
- Stable or transient team members?
 - Is is the same person in the role every time?
- Stable teams are unusual in hospitals

Andreatta (2009)

Team cohesion - a useful concept for health?

- Strong correlations between cohesion and performance
- Improved:
 - communication,
 - task completion
- Reduction in errors
Fischer, et al. (2008)



Different problems in health

- How to form teams
 - Temporary
 - In time-pressured situations
 - Team members may be unknown

Different problems in health

- How to form teams
 - Temporary
 - In time-pressured situations
 - Team members may be unknown
- How to train teams
 - Train the team?
 - Train the individual to work in a team?

Methods of team training:

- Team Coordination Training (TCT)
- Cross-training
- Team self correction training
- Assertiveness training
- Perceptual contrast training
- Scenario-based training
- Guided error training
- Stress exposure training
- Metacognition training
- Team leadership training

Team coordination training (TCT)

- Most common form of training in anaesthetic team training
- Crisis resource management (CRM) training is one form
- Uses didactic, video critique and simulation-based training to explore concepts behind team coordination

Crisis Resource Management training

- First used in aviation (Helmreich et al)
- Adapted for use in anaesthesia (Howard et al. 1992)
- Anaesthetic Crisis Resource Management (ACRM)
- Elements found in EMAC Human performance module

Advances in CRM training

- Aviation CRM now involves active identification of error sources
- ‘Threat and Error Management’ (TEM)
- Good evidence to support CRM training but only 3 of 45 studies looked at health (Salas et al. 2008)

- Each team member acts the role of another team member
 - My responsibilities
 - How my role relates to others and the goal
 - How others' roles affect mine
- Allows focused development of:
 - Mutual performance monitoring
 - Back-up behaviour
 - To some degree communication and leadership

Team self-correction training

- Didactic training gives participants tools to critique the team's performance
- Then practice debriefs with a trained facilitator
- Then self debrief
- Effective in developing learning culture

Assertiveness training

- Encourages members of team to voice concerns
- Gives everyone a right to be heard
- Good for junior members of team
- Often done as role play
- Need lots of practice to change behaviour

Perceptual contrast training

- Trains the ability to detect ideal and non-ideal team behaviours
- Commonly watch video and contrast with their own performance
- Trains a detection of potential hazards and situation awareness

Scenario-based training

- Repeated running and re-running of key situations to train taskwork
- Allows participants to discover the best way to deal with situation
- Good for organisational change
- Excellent results in obstetric emergencies

(Draycott et al. 2006)

Guided error training

- Allowed to make common errors
- Consequences and prevention of errors examined

- Metacognition ‘thinking about thinking’
- Explore own assumptions and biases
- Critically appraise decision making in stressful situations

Stress-exposure training

- Exposes participants to stressful situations
- Hopefully deal with stress more effectively
- Modify behaviours to deal with stress

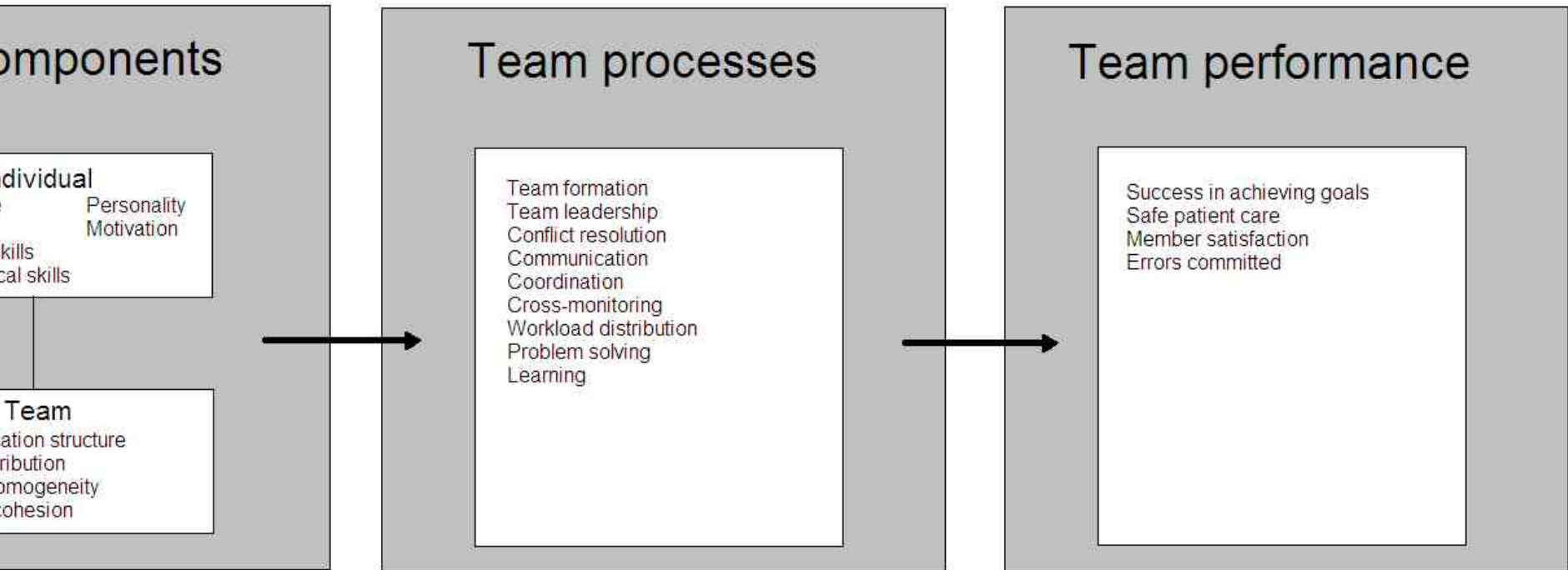
Team leadership training

- Specific individual training for leaders
- Gives strategies to use
- Promotes effective delegation and communication

Methods used at present

Very few:

- CRM (subset of TCT)
- Scenario-based training
- Plus rare examples of:
 - Team leadership training
 - Cross-training
 - Metacognition training
 - With aspects of stress exposure training



An integrated model of task performance after Salas et al. (1998)

Decisions for training programs:

- Individual versus team approach?
- Taskwork versus teamwork?
- How to integrate with broader curricula?
- How to assess and evaluate?

Conclusion

- Teamwork and team training is essential in all aspects of healthcare
- A ‘one-size-fits-all’ model is not appropriate due to team characteristics
- Current evidence in team training does not necessarily extend to health
- Need to measure and implement through training and CME programs?

Questions?



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