

Using simulation training to learn about non-technical skills management

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The problem

Unsafe surgical care:

- Almost \$30,000,000 for new and existing claims in 2017
- 7,300 ACC claims related to injuries in patients undergoing surgery in NZ public hospitals in the last 5 years.
- Around half of perioperative surgical events are considered avoidable.
- Failures in teamwork and communication are an important contributing factor.



Evidence

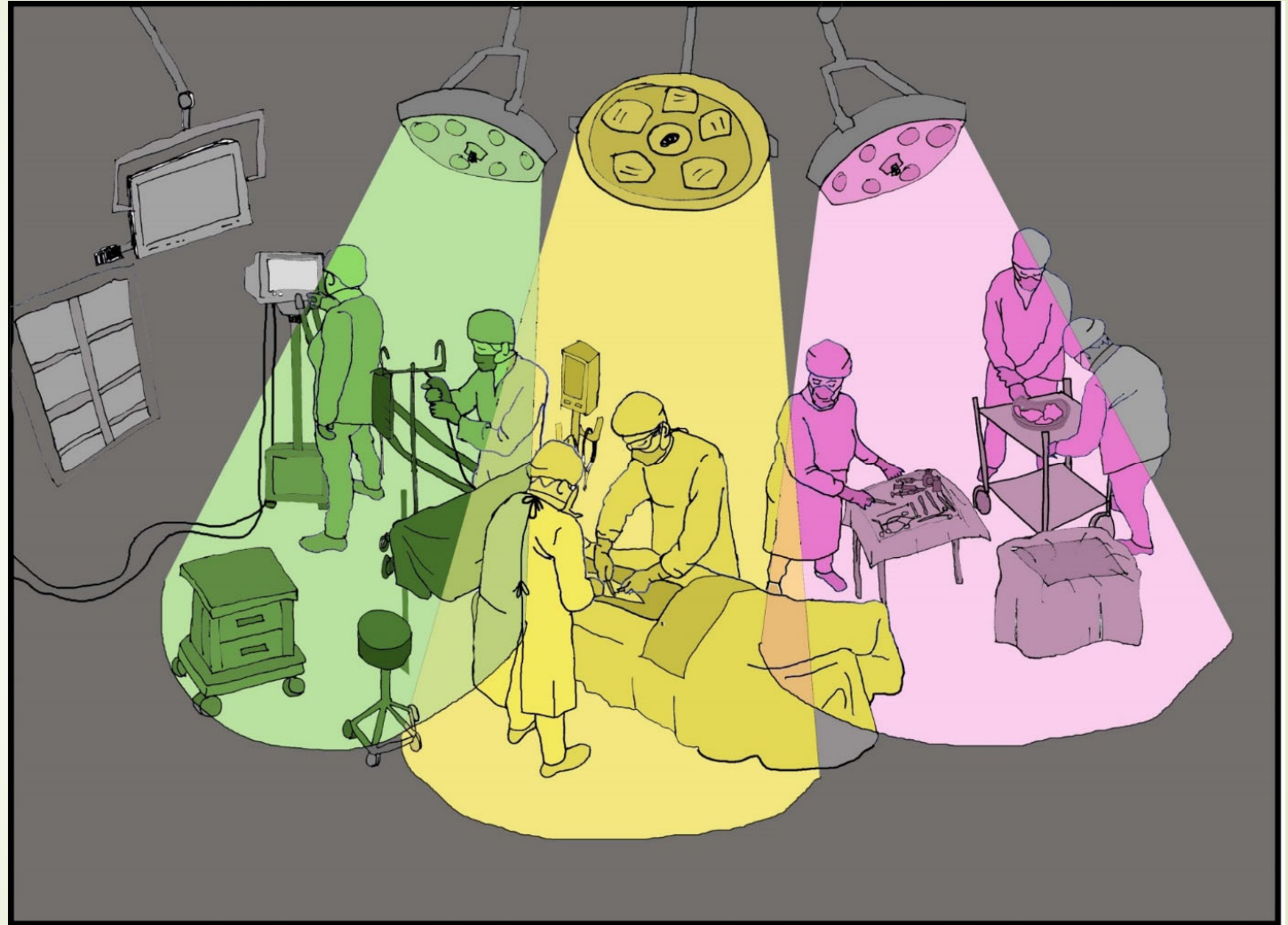
- ▶ Team training saves lives

Saving Lives: A Meta-Analysis of Team Training in Healthcare. Hughes et al. 2016 J Appl Psychol.

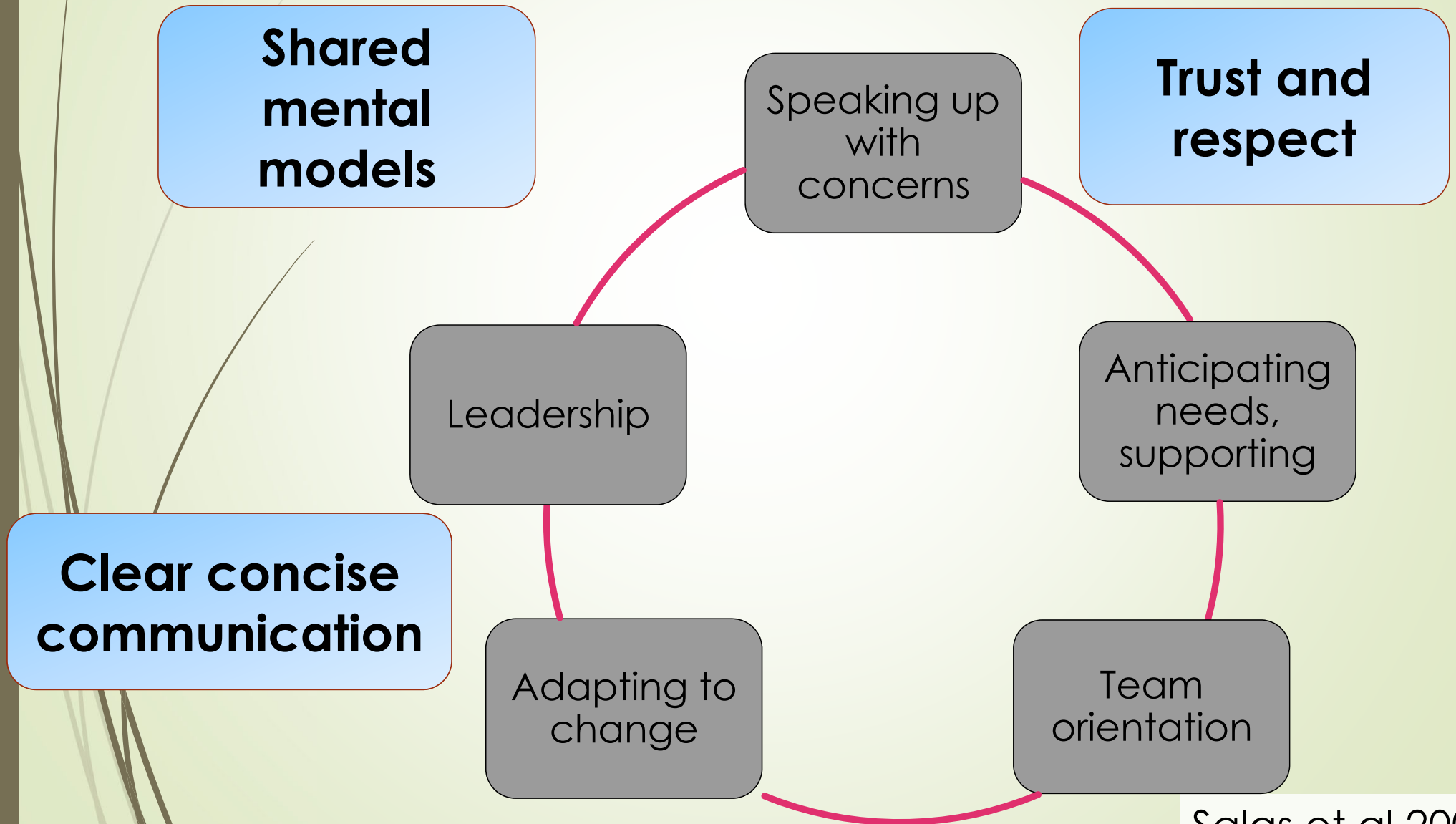
- ▶ Simulation-based team training is an effective approach to training teams.

Transforming health care one team at a time: Ten observations and the trail ahead. Salas et al. 2018. Group and Organization Management.

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The features of effective teams



- National programme, ACC funded
- One-day simulation-based course, for whole OR teams
- Debriefs – learning from the collective experience, taking it back to practice.
- Communication skills:
 - Briefings/ time out
 - Structured Recap
 - Speaking up
 - Closed loop





Bespoke surgical models Integrated with a Laerdal 3G simulator



NetworkZ
Better outcomes in acute care



Aim: psychological fidelity



Case Fidelity

- Notes
- ID
- Labs
- X-match



In situ

- Own theatre
- Own team
- Own system responses



National implementation

- ❖ Stepped roll-out across all 20 NZ DHBs.
- ❖ 3G simulator and surgical models to each DHB, standardized course package.
- ❖ Instructor Training program.
- ❖ Staged support for DHBs to run courses.
- ❖ Goal – simulation-based team training established as BAU.



Cohort 1

- ❖ Waitemata
- ❖ Waikato
- ❖ Nelson-Marlborough
- ❖ Whanganui
- ❖ Tairāwhiti

2017

Cohort 2

- ❖ Auckland
- ❖ Capital and Coast Health
- ❖ Hawkes Bay
- ❖ Taranaki
- ❖ Wairarapa

2018

Cohort 3

- ❖ Counties-Manukau
- ❖ Bay of Plenty
- ❖ Mid Central
- ❖ Hutt Valley
- ❖ South Canterbury

2019

Cohort 4

- ❖ Canterbury
- ❖ Southern
- ❖ Northland
- ❖ Lakes
- ❖ West Coast

2020

Evaluation: patient outcomes

- ❖ Stepped wedge cluster design
- ❖ Days alive and out of hospital (NMDS)
- ❖ ACC claims database – number and cost
- ❖ NMDS post-operative complication



Evaluation: Culture and process measures

- ❖ End of course evaluations / reports
- ❖ Quality of administration of the Surgical Safety Checklist
- ❖ Pre-post teamwork / safety culture survey
- ❖ Staff Interviews





NetworkZ implementation

NetworkZ uptake

>667 course participants
since March 2017

179 Instructors trained or
part trained.

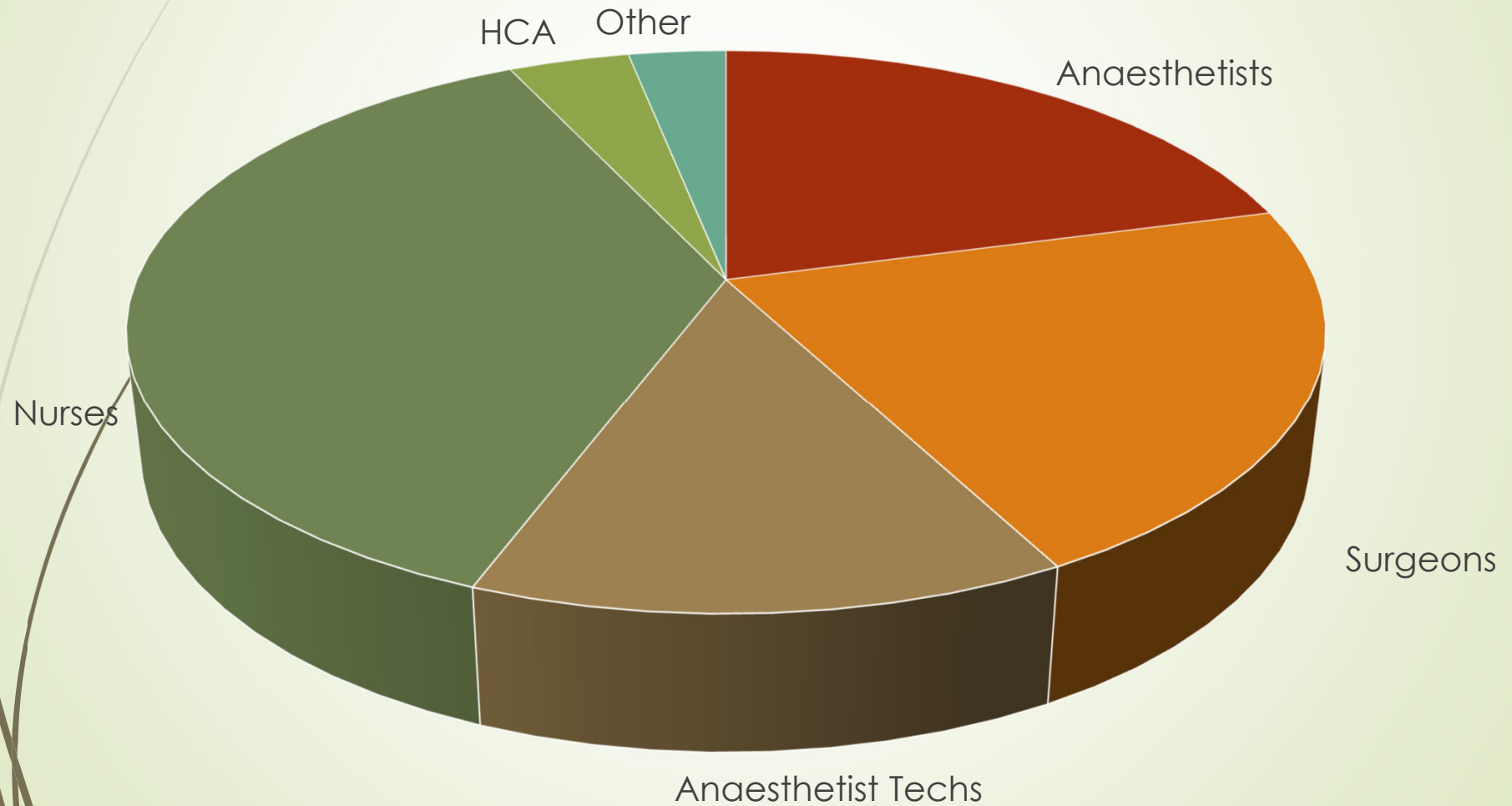
Course evaluations

98% agree / strongly agree
on value and quality of
course.

Instructor course evaluations

98% agree / strongly agree
on value and quality of
course.

Staff Training Makeup



Post-course reports

Improving communication

- Staff names – need to be visible.
- Institute briefings

Gaps in knowledge and skills

- ACLS / defibrillator
- MTP protocol

Clarifying roles

- Clarify staff roles and capabilities

Crisis response

- Surgical staff unaware of crisis cognitive aids

Equipment and resources

- Broken equipment, lack of equipment

Systems issues

- Adrenaline ampoules in two different concentrations
- Anaphylaxis box 'misplaced'

Interviews Cohort 1

- ❖ Existing culture influenced implementation, but NetworkZ influenced culture towards improved relationships.
- ❖ Motivation - strong interest, learning, local evidence of change in practice.
- ❖ Structure - resources, support, fidelity of simulations important.
- ❖ Infrastructure - support from senior management is critical.



Culture

People are happier to speak up, they're happier to raise a concern, I get a feeling that it improves theatre morale.

It's created a lot of talk about things that they can do better and I think it has improved some relationships around the place."



Summary

- Improving team non-technical skills
- Improving culture
- Identifying systems issues
- National initiative
- Unique whole team staff development opportunity
- World leading focus on surgical fidelity
- Evidence-based
- In situ

