

Advancing Patient Safety in Surgery, Royal College of Surgeons of Edinburgh, 15/11/07

# NOTSS: Non-technical skills for surgeons

**Steven Yule**

School of Psychology, University of Aberdeen

**Project sponsors:**

Royal College of Surgeons of Edinburgh (RCSEd)

NHS Education for Scotland (NES)



## **NOTSS steering group**

- Prof Rhona Flin (Applied Psychologist)
- Mr Simon Paterson-Brown (Cons. Upper GI Surgeon)
- Prof David Rowley (Cons. Orthopaedic Surgeon)
- Dr Nikki Maran (Cons. Anaesthetist)
- Prof George Youngson (Cons. Paediatric Surgeon)

## **Funding**

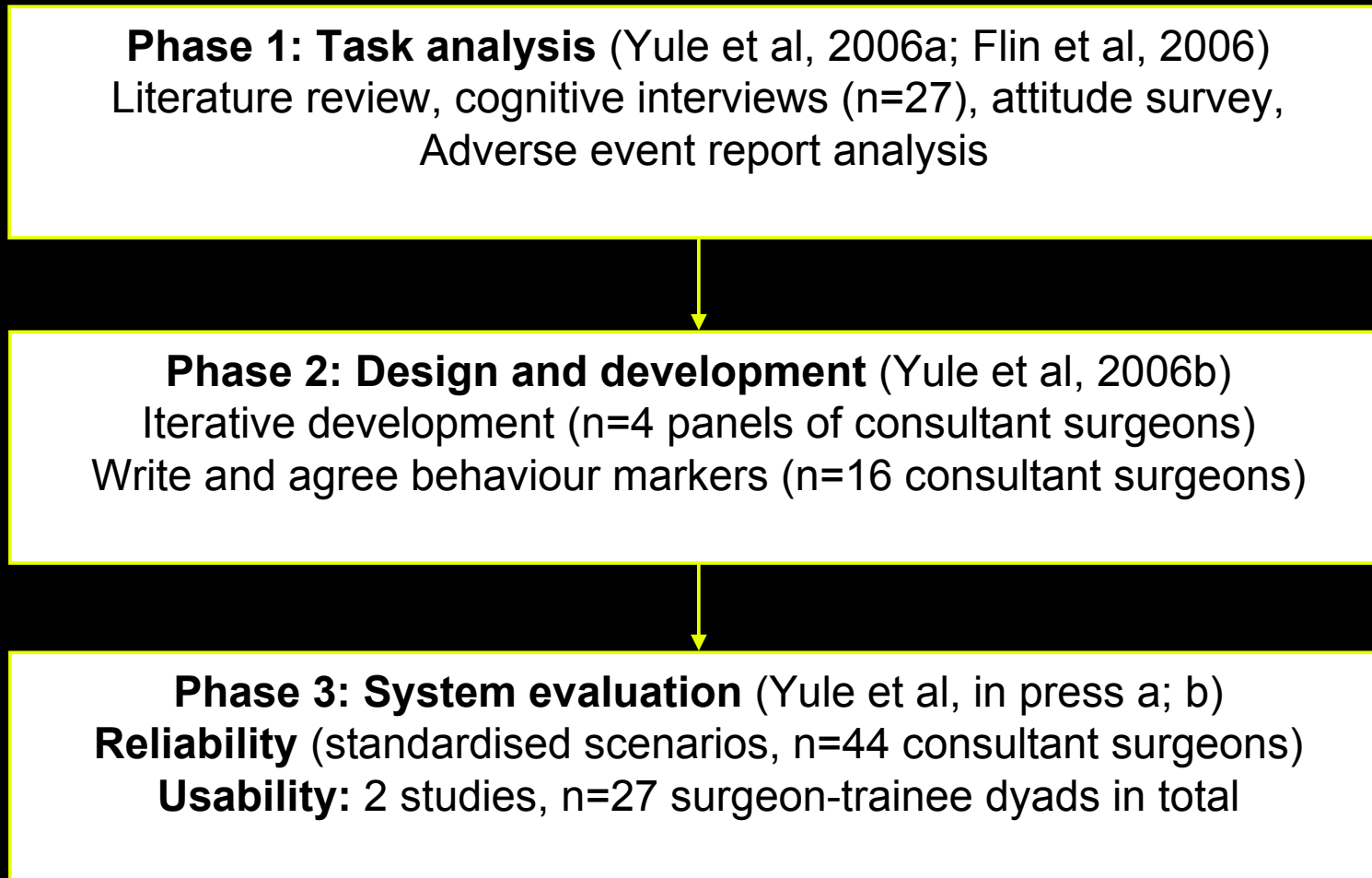
- RCSEd (2003-2007); NES (2003-2006);

**Contact:** [s.j.yule@abdn.ac.uk](mailto:s.j.yule@abdn.ac.uk)

**NOTSS website:** [www.abdn.ac.uk/iprc/notss](http://www.abdn.ac.uk/iprc/notss)

# Developing the NOTSS system

(based on Gordon, 1993)



# NOTSS skills taxonomy v1.2

(Yule et al, *Medical Education*, 2006)

Categories	Elements
Situation Awareness	Gathering Information Understanding Information Projecting and anticipating future state
Decision Making	Considering options Selecting and communicating option Implementing and reviewing decisions
Communication and Teamwork	Exchanging information Establishing a shared understanding Co-ordinating team
Leadership	Setting and maintaining standards Coping with pressure Supporting others

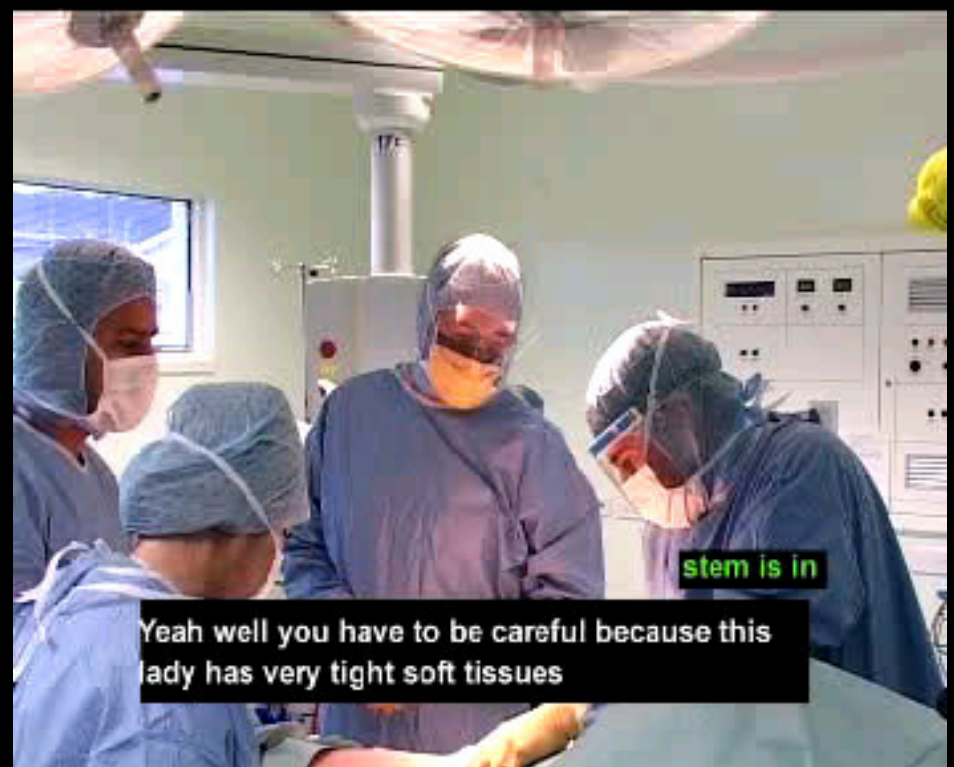
# NOTSS video scenarios

Decision Making

Situation Awareness

Communication & Teamwork

Leadership



# Reliability study - results

(Yule et al, *World J Surgery*, in press)

Categories	* $r_{wg}$	ICC(2)S	ICC(2)A	Elements	$r_{wg}$
Situation Awareness	.51	.95	.29	Gathering Information	.55
				Understanding Information	.46
				Projecting and anticipating future state	.48
Decision Making	.68	.99	.60	Considering options	.66
				Selecting and communicating option	.64
				Implementing and reviewing decisions	.63
Communication and Teamwork	.70	.99	.39	Exchanging information	.61
				Establishing a shared understanding	.58
				Co-ordinating team	.63
Leadership	.72	.99	.66	Setting and maintaining standards	.52
				Coping with pressure	.74
				Supporting others	.68

\*rated separately, not an average of element ratings

# Current research

- Controlled usability trial in the OR, using NOTSS to observe, rate and debrief on performance
- Pre-test/post-test control group design
- n=16 trainer-trainee dyads
- Examine the relationship between non-technical and technical skills
- Formally introduce non-tech skills training into the surgical curriculum