



Developing Excellence in
Medical Education Conference

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ICC, Birmingham

6th Developing Excellence in Medical Education Conference

**Education and training for a
globally sustainable workforce**

To meet the needs of the people we serve

Monday 8 – Tuesday 9 December 2025

“Defusing Tension”

Human Factors Education
Using Non-Clinical
Game-Based Learning

Dr Ruth Friedlander
Clinical Education Fellow in
Emergency Medicine

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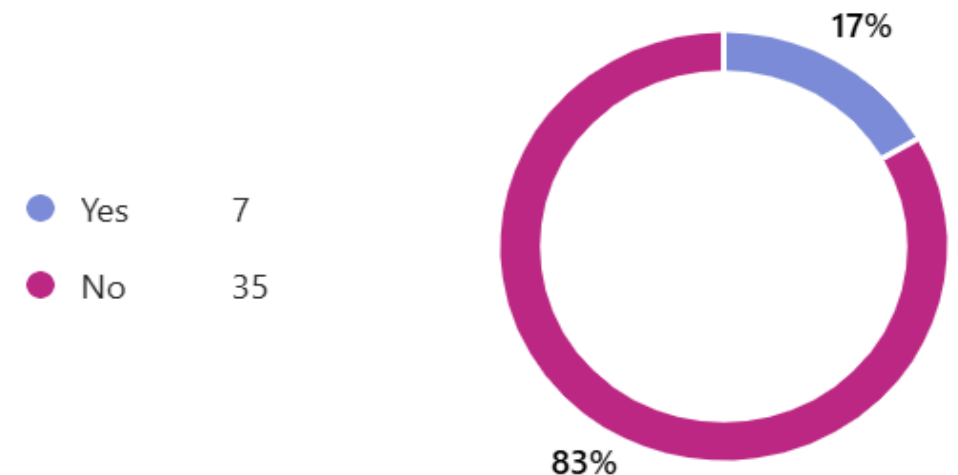
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NHS
University Hospitals
Bristol and Weston
NHS Foundation Trust

The Need

- An understanding of Human Factors is of undoubted importance for those working in a healthcare environment
- Wider policy
 - General Medical Council (GMC)
“Outcomes for Graduates” (2018)
 - Care Quality Commission (CQC)
“Opening the door to change” (2018)
- Local learning gap

“Have you previously received teaching/training on Human Factors at Medical School?”



Principles

1

Non-Clinical

Clinical simulation:

- Potential to provoke student anxiety
- Over-focus on clinical elements

2

Activity-Based

Traditional lectures:

- Limited opportunity to practice skills
- Potential for reduced engagement
- Diluted impact



Co-operative Game-Based Workshop

The Intervention (1)

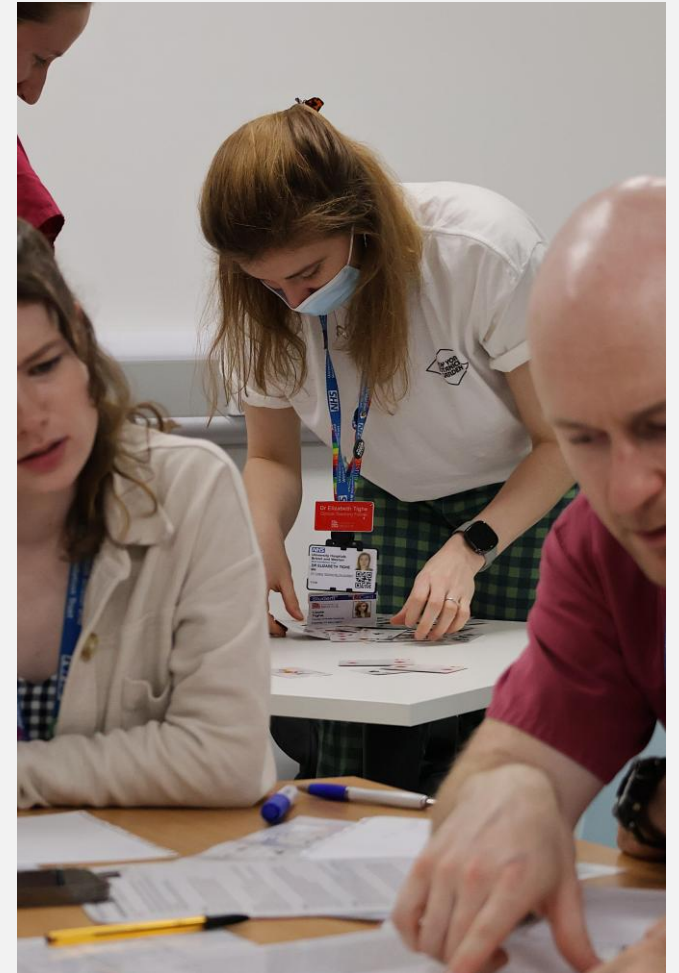


In the workshop, I adapt an existing puzzle video

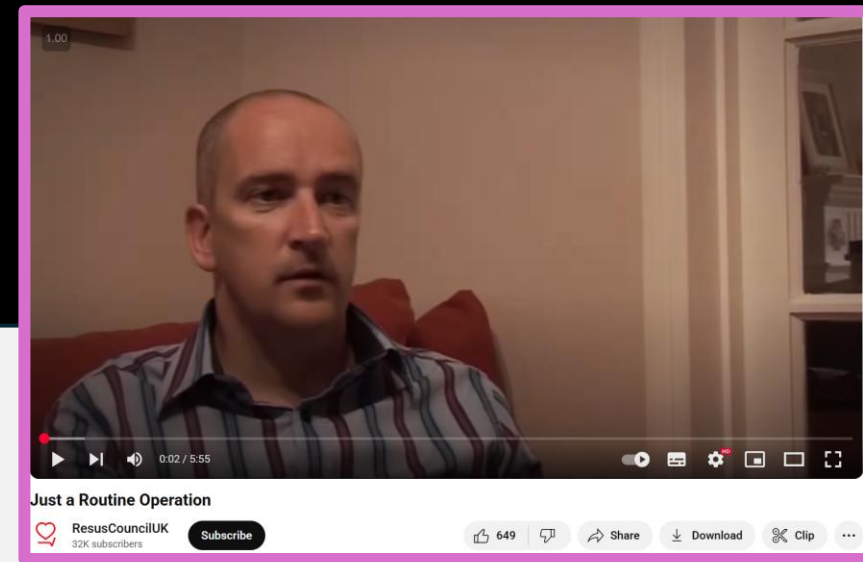
The Intervention (2)



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The Intervention (3)



Why are Human Factors important?

"In healthcare, 80% of errors are attributed to human factors at individual level, organisational level, or commonly both."
(National Patient Safety Agency, 2008)

"96% of Never Events reported in 2017/18 should have been preventable with regular actions by humans." (CQC, 2018)

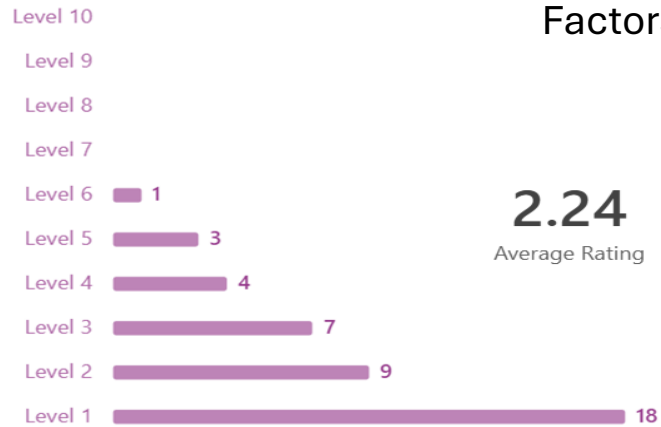
Understanding and applying Human Factors principles is fundamental to improving patient safety

DuPont's "Dirty Dozen"

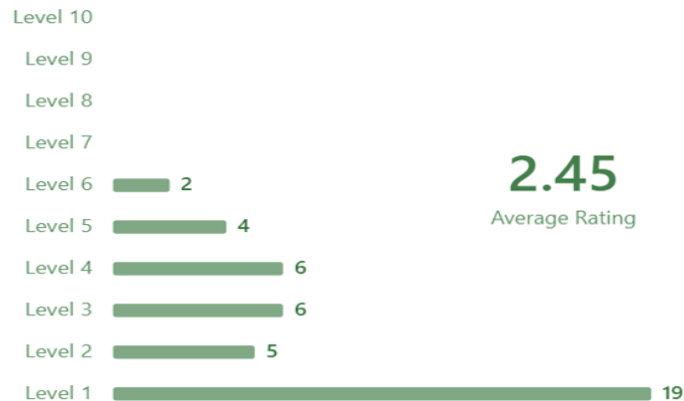
Communication	Complacency	Lack of Knowledge	Distraction
Lack of Teamwork	Fatigue	Lack of Resources	Pressure
Lack of Assertiveness	Stress	Situational Awareness	Cultural Norms ("The way we do things around here")

Initial Student Feedback (1)

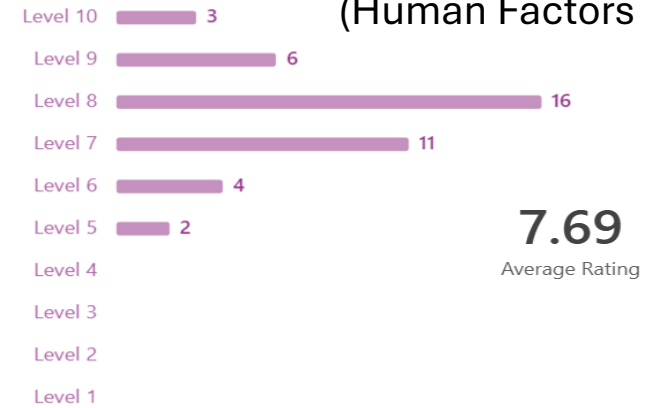
Pre-workshop knowledge (Human Factors Theory)



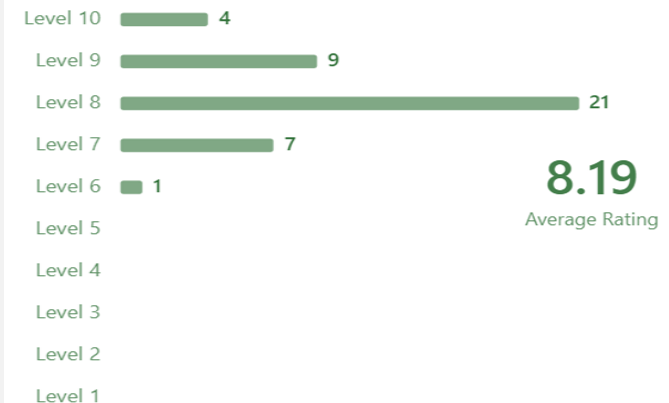
Pre-workshop understanding (of application to clinical practice)



Post-workshop knowledge (Human Factors Theory)

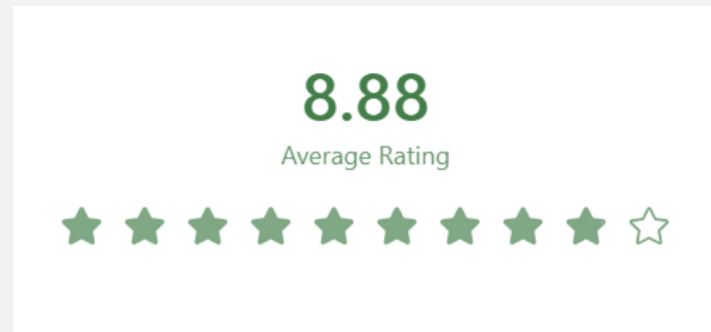


Post-workshop understanding (of application to clinical practice)



Initial Student Feedback (2)

“We had to engage in order to understand. The fact we did tasks that showed human factors meant that when we learnt formally about it later, it didn’t feel like a foreign topic.”



“Excellent use of gamification to apply human factors in a real-life simulation session. Dr Friedlander was EXCELLENT at facilitating and planning the exercise in wonderful detail.”

Fun		
● Neutral		2.4%
● Agree		31%
● Strongly agree		66.7%

Different/unique		
● Agree		23.8%
● Strongly agree		76.2%

Engaging		
● Neutral		2.4%
● Agree		23.8%
● Strongly agree		73.8%

“I enjoyed being able to practice the skills required of a doctor in a manner that is not medical!”

“Much better than a lecture. Fun and engaging; allows you to reflect on your own strengths and weaknesses.”

“The workshop allowed us to engage and think about application to medicine in a way that will last.”

Longer-Term Impact

“I’ve noticed the difficulty placed upon consultations when factors such as noise interfere in GP”

“I feel that the workshop has helped me make connections between academic Human Factors theory and real-life clinical practice”

Strongly Agree	12
Agree	8
Neutral	0
Disagree	0
Strongly disagree	0



re
dback

“Experiences on clinical placement have caused me to explicitly recall the Human Factors workshop”

Yes	10
No	10



“A consultant communicated a diagnosis to the wrong patient, as he misheard the other doctor say the bed number (bed 8 vs cubicle 8!) This experience made me reflect on the workshop and wonder how many of these human factors scenarios went under my radar beforehand”

“Discussing human factors in the workshop has allowed me to take it less personally when staff members on placement aren’t as friendly as they could be!”

“I’ve noticed more doctors getting tunnel vision when assessing a patient and not stepping back to assess the big picture”

Future Developments – The Who

- Final year medical students
 - Confirmed for academic year Sept 2025/26 (South Bristol Academy)
 - Embedded into 9-week “Acute and Critical Care” block
- Clinical Teaching Fellows (CTFs)
 - Piloted in April 2025
 - Delivered further session in August 2025
- Other groups...

Post-Graduate Doctors in Training

Student/Registered Nurses

Student/Registered Allied Health Professionals

Lay people

Future Developments – AI

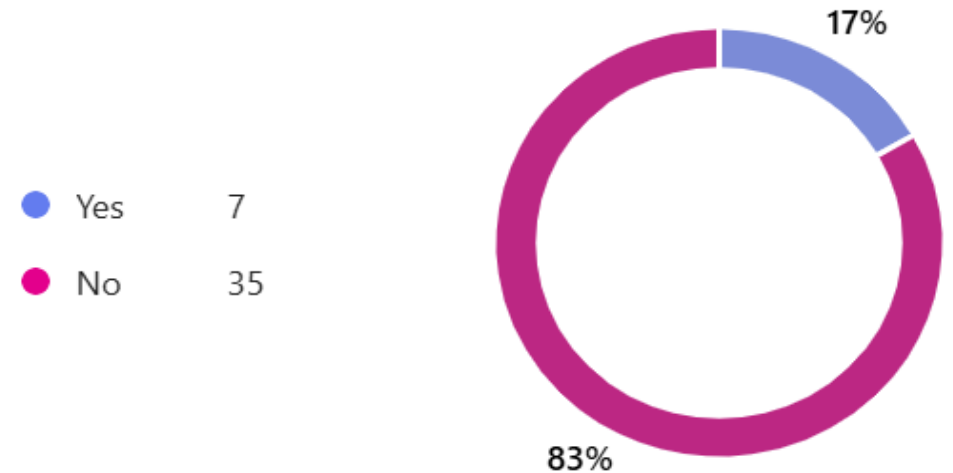
- AI Feedback
 - Custom constructed AI pipeline
 - Transcription
 - Large Language Models (LLMs)
 - Specific examples
 - Summaries
- Potential applications
 - Feedback summary to students via email
 - Facilitator evaluation
 - Real-time feedback provision to facilitator



Sustainability

- Scalability of current intervention
 - “Train the Trainer” programme
 - Production of delivery guide
 - Low set-up costs
- The “Big Picture”

“Have you previously received teaching/training on Human Factors at Medical School?”



Thank You



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With Grateful Thanks to:

- The Clinical Teaching Fellows (CTFs) at South Bristol Academy for taking part in the video demo
- Dr Sian Veysey, Consultant Emergency Physician at UHBW, for her assistance with securing approval for the project pilot

Image Credits

- Slide 1 (“Exploding Brain”) – Canva AI Image Generator
- Slide 1 (UHBW Logo) – Internet (<https://www.bmsc.co.uk/>)
- Slide 4 (“Keep Talking And Nobody Explodes” Game Loading Screen) – Internet (<https://keeptalkinggame.com/mobile/>)
- Slide 6 (“Just a Routine Operation” – ResusCouncilUK Video) - YouTube (https://www.youtube.com/watch?v=VndU2zap_Rg)
- Slide 11 (“Brain with Balancing Scales”) – Internet (<https://sloanreview.mit.edu/article/ethics-or-compliance-in-a-crisis/>)