Effective Communication in the Endo Suite

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  - *Clinical Nurse Educator, Royal Alexandra Hospital Endoscopy*
- *Clarence Wong* *MD FRCPC CAGF AGAF FASGE*
  - *Co-chair, Provincial Endoscopy Operations Committee, AHS*

Faculty/Presenter Disclosure

- **Presenter:** Danae Drouin
- **Financial affiliations:**
  - **Employee**: Alberta Health Services
  - No perceived or known conflict of interest
  - No financial disclosures

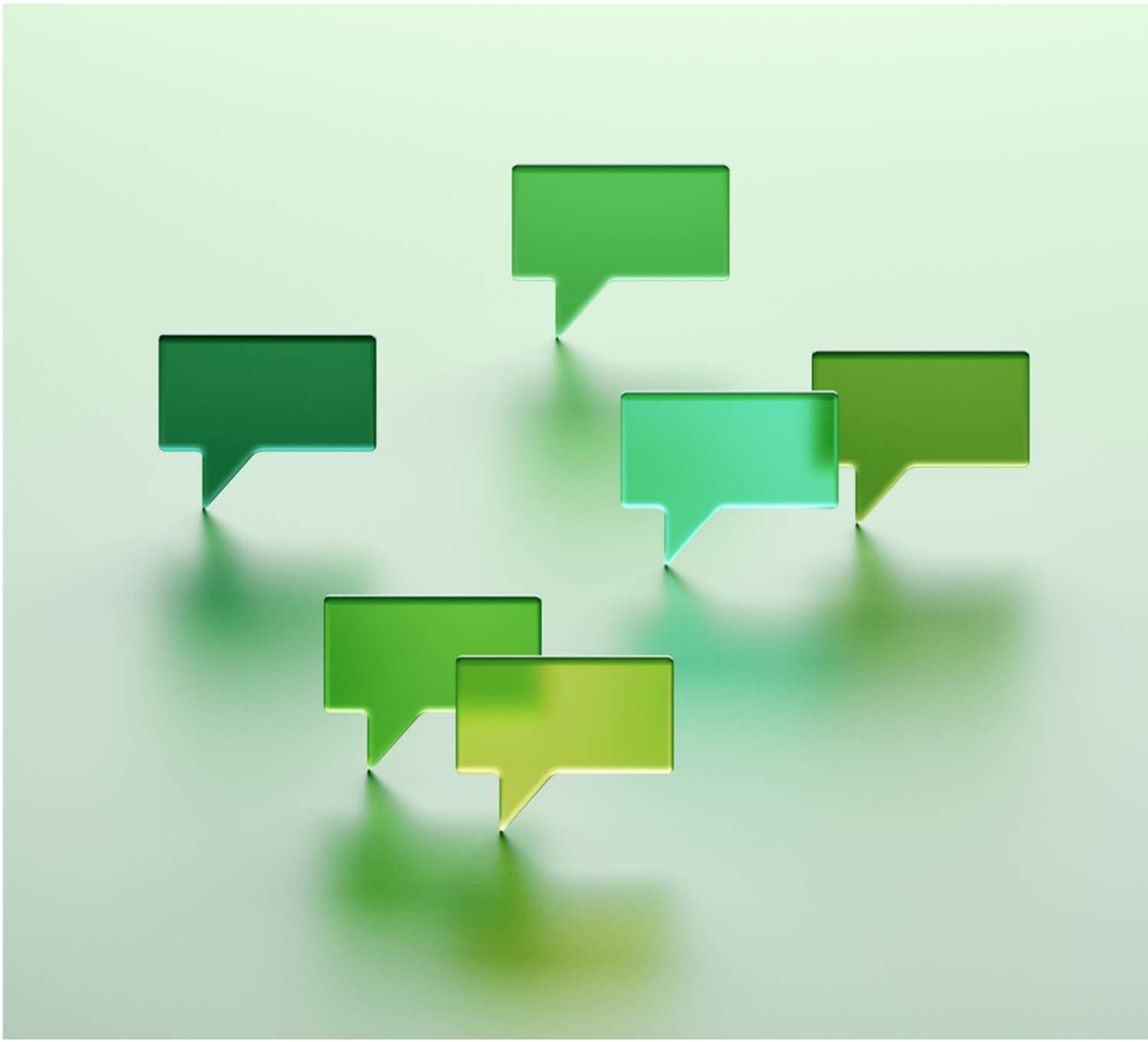
Faculty/Presenter Disclosure

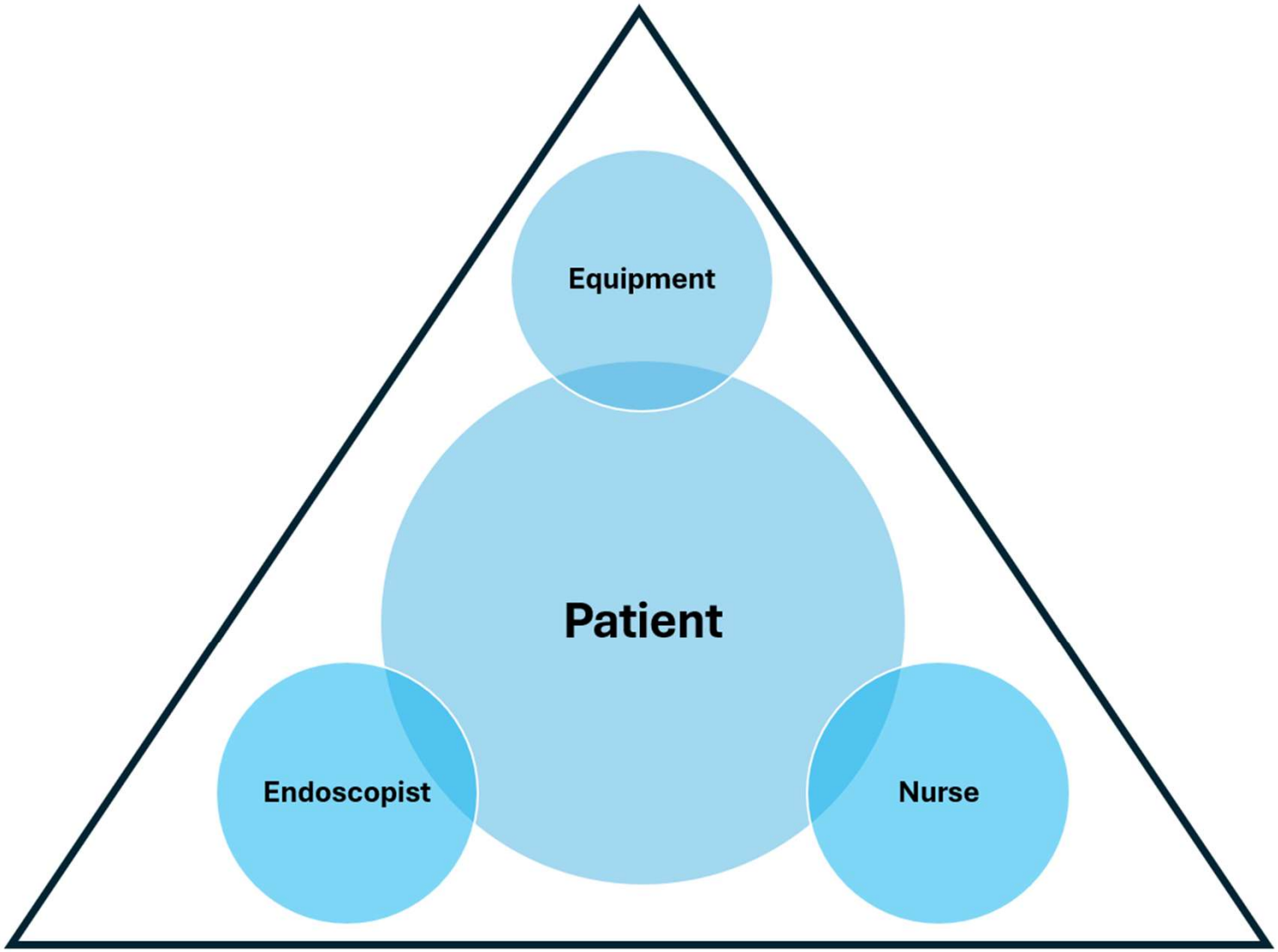
- **Faculty:** Clarence Wong
- **Financial affiliations:**
  - **Speakers' Bureaux, advisory boards:** Olympus, Pentax, Vantage/Fuji, Knight Pharma
  - **Grants, clinical trials:** University of Alberta Hospital Foundation, InoVAIT
  - **Employee:** Alberta Health Services, University of Alberta

Objectives

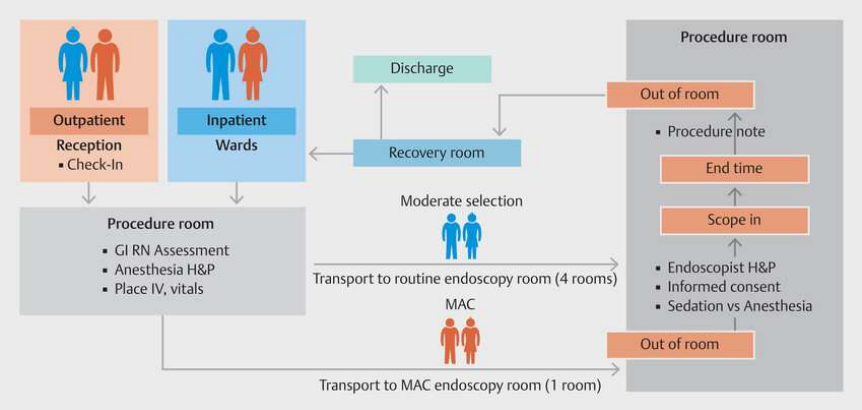
- Demonstrate Team Based Communication
- Review Non-Technical Skills as Relevant to Endoscopy Team Communication
- Recognize Communication Strategies Vary with a Novice Team Member

Effective Communication in the Endo Suite




Equipment
Patient
Endoscopist
Nurse

What Makes an Endoscopy Unit Work ***Well***?



Efficiency and Flowthrough

Technical Skill & Clinical Expertise

Quality, Safety & Outcomes

What Makes an Endoscopy Unit Work ***Well***?

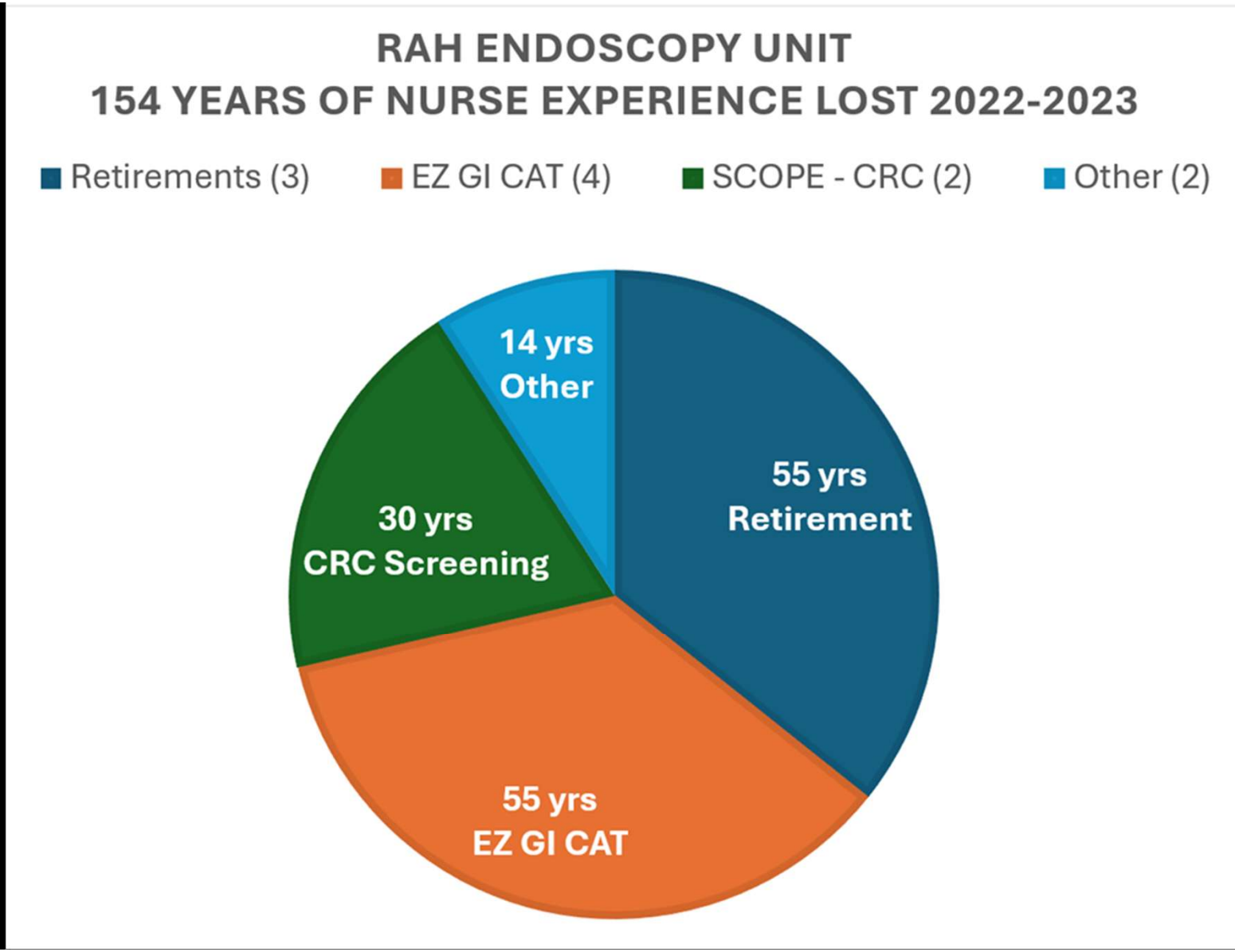
Non-Technical Skills in GI Endoscopy

BSG/JAG (EndoNTS): *Communication is a core competency assessed alongside technical skills.*

ASGE: *Emphasizes team-based care and shared responsibility for patient safety.*
UEG: *Highlights leadership and team coordination as determinants of outcomes.*

Endoscopy is changing

Our teams are changing



Non-Technical Skills

"**Non-Technical Skills (NTS)** can be defined as *a constellation of cognitive and social skills, exhibited by individuals and teams, needed to reduce error and improve human performance in complex systems*."[1]

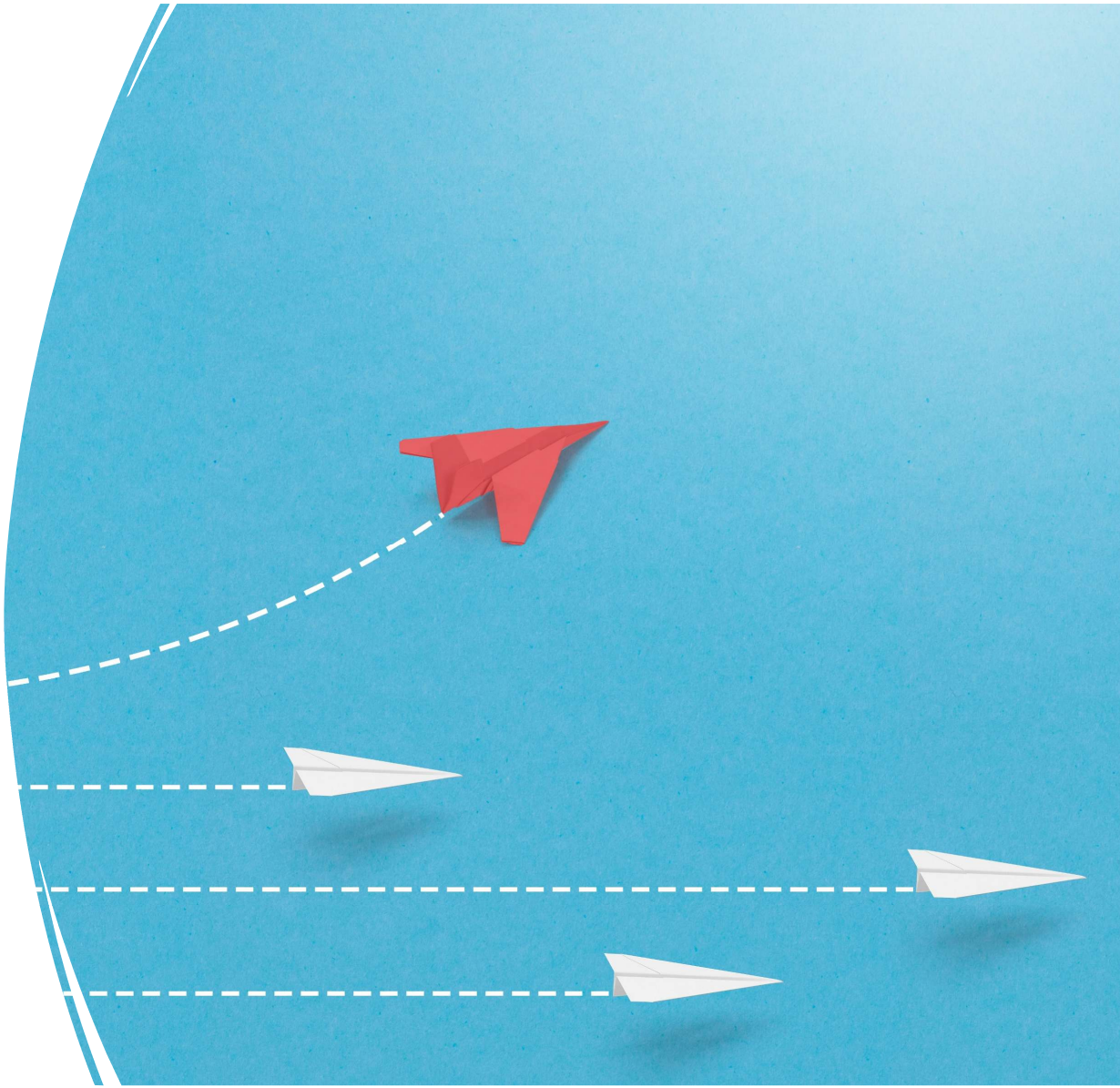
1. Prineas et al., 2020

Low Acuity High Occurrence (LAHO)

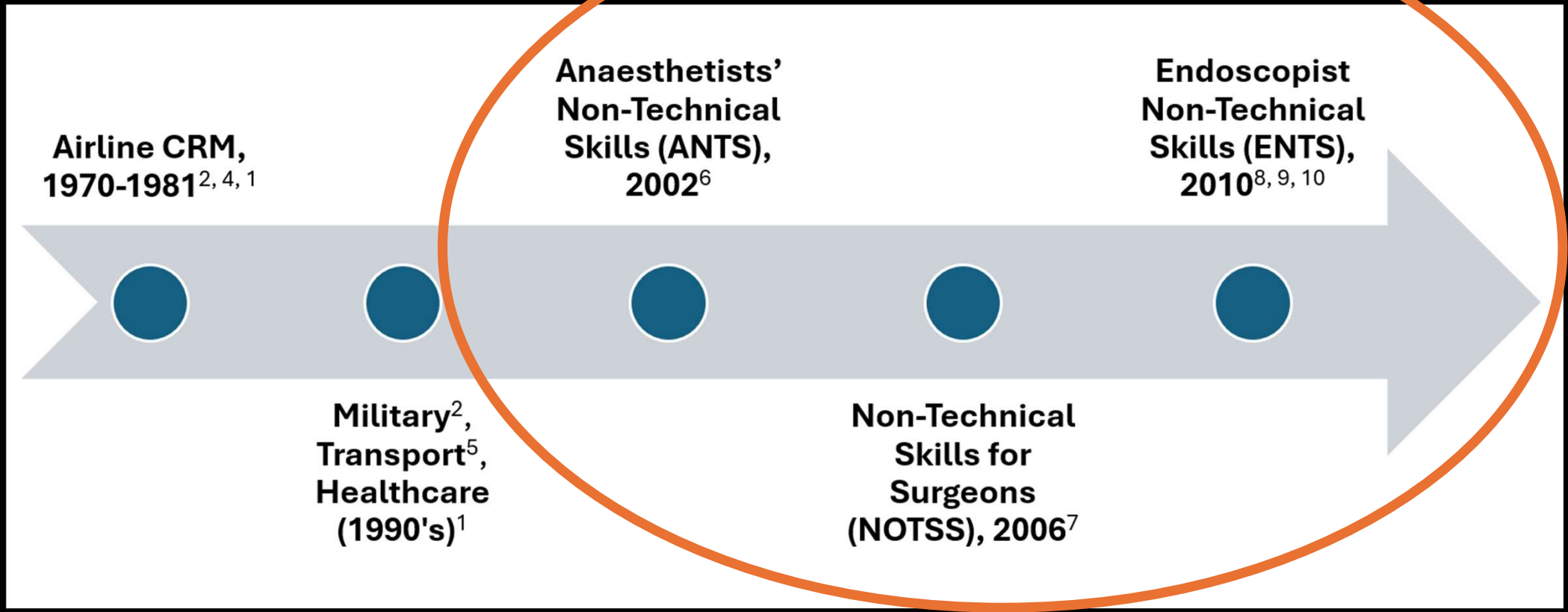
High Acuity Low Occurrence (HALO)

The evolution of CRM to NTS

- Cockpit Resource Management
- Crew Resource Management
- Crisis Resource Management
- Cognitive Resource Management
- …
- Non-Technical Skills (NTS)



1. Prineas et al., 2020; 2. Helmreich et al., 1999; Microsoft 365 Stock Image



1. Prineas et al., 2021; 2. Helmreich et al., 1999; 4. NASA, 1979; 5. Transport Canada, 2023; 6. Kang et al., 2024;
7. Geraghty et al., 2023; 8. Ravindran et al., 2020; 9. Shiha et al., 2023; 10. Siau et al., 2017

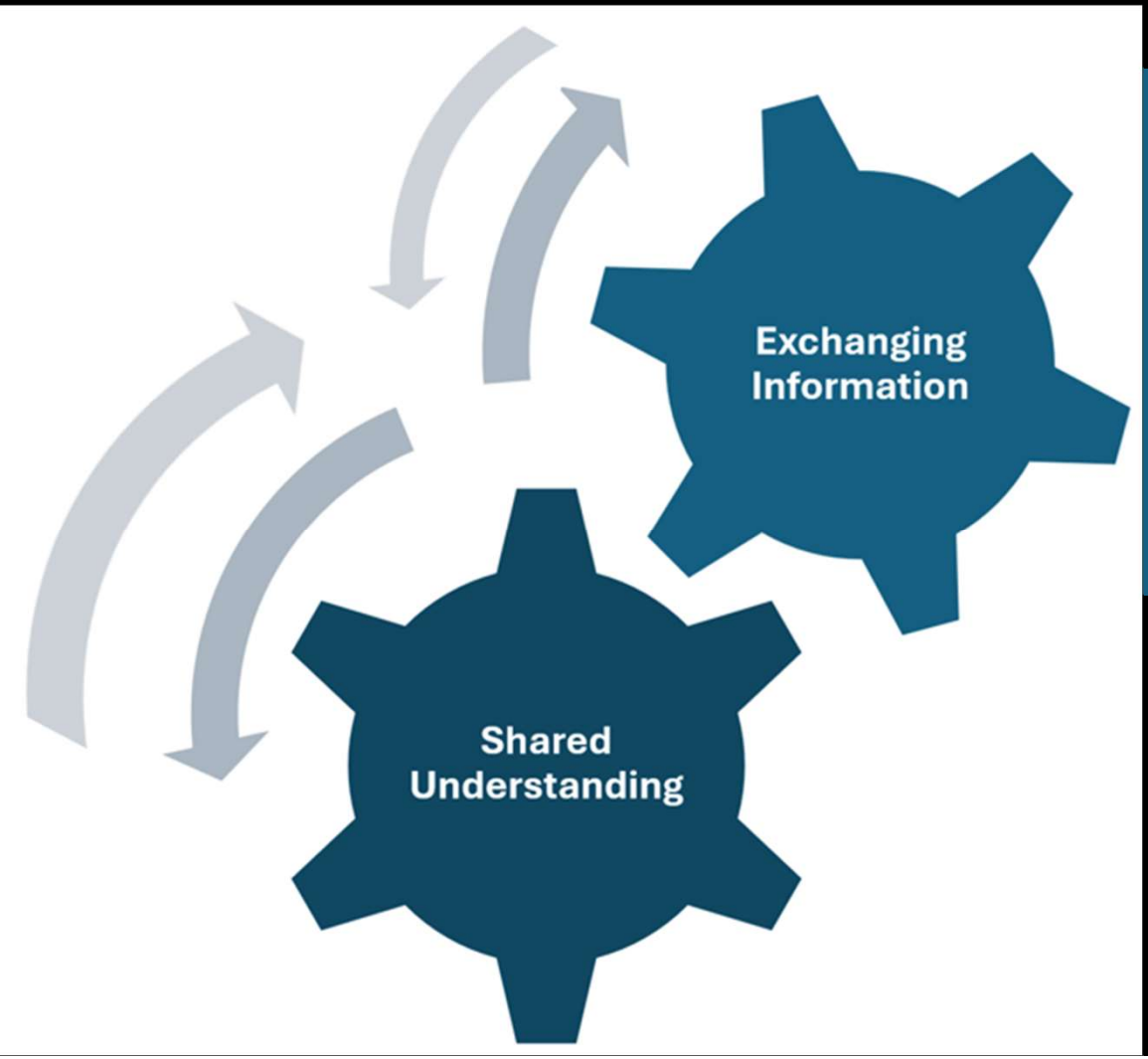
Endoscopic Non-Technical Skills (ENTS)

Table 4 Classification of behavioural elements into categories

Communication and teamwork	Situation awareness	Leadership	Judgement and decision making
Exchanging information	Preparation	Supporting others	Considering options
Maintaining a shared understanding	Continuous assessment	Maintaining standards	Making decisions
Maintaining a patient-centred approach	Problem recognition Focus	Dealing with problems	Reviewing the situation

8. Ravindran et al., 2020

Communication & Teamwork[8]

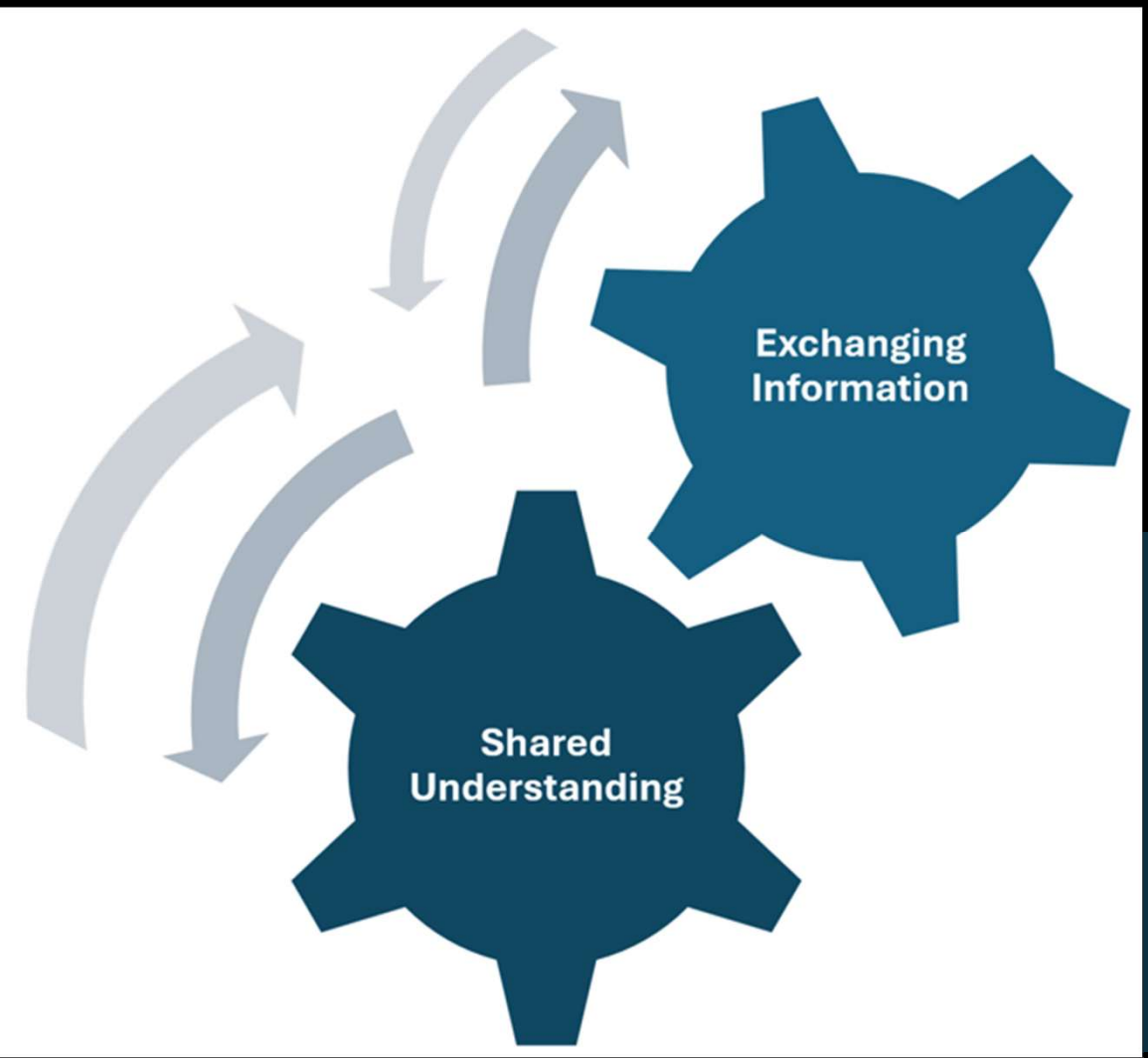


Exchanging Information

- Closed loop communication[11,14]
- Calm, specific instructions[11,14]

8. Ravindran et al., 2020;
11. Aaberg et al., 2025; 14. Brindley & Reynolds, 2011

Communication & Teamwork[8]



Shared Understanding[14]

- Briefing (pre, post)
- Verbalize steps[14]

8. Ravindran et al., 2020; 14. Brindley & Reynolds, 2011

Endoscopic Non-Technical Skills (ENTS)

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	Focus		

8. Ravindran et al., 2020

Situation Awareness

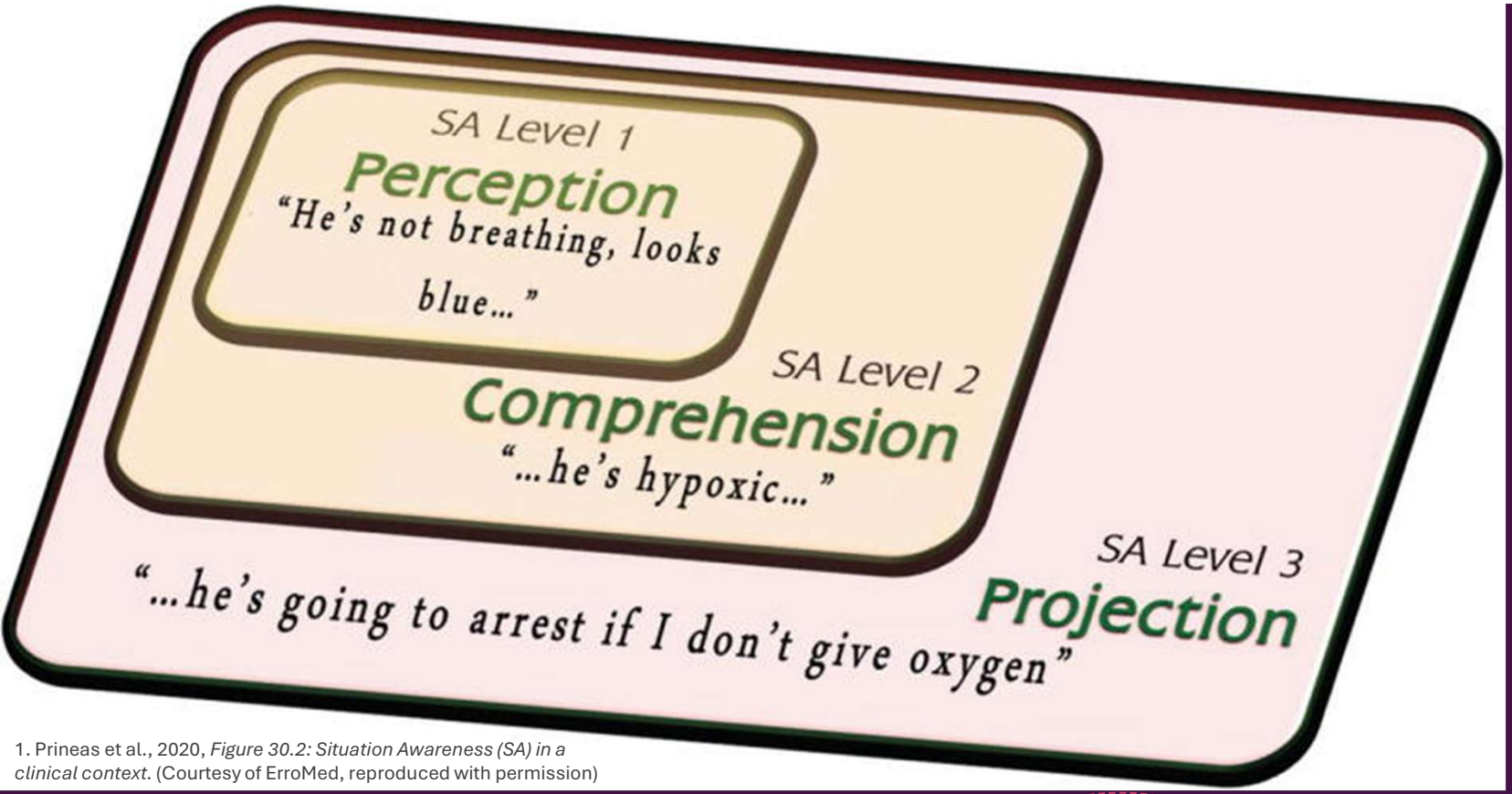
“is defined as

‘the **perception** of elements in the environment,

the **comprehension** of their meaning in terms of task goals,

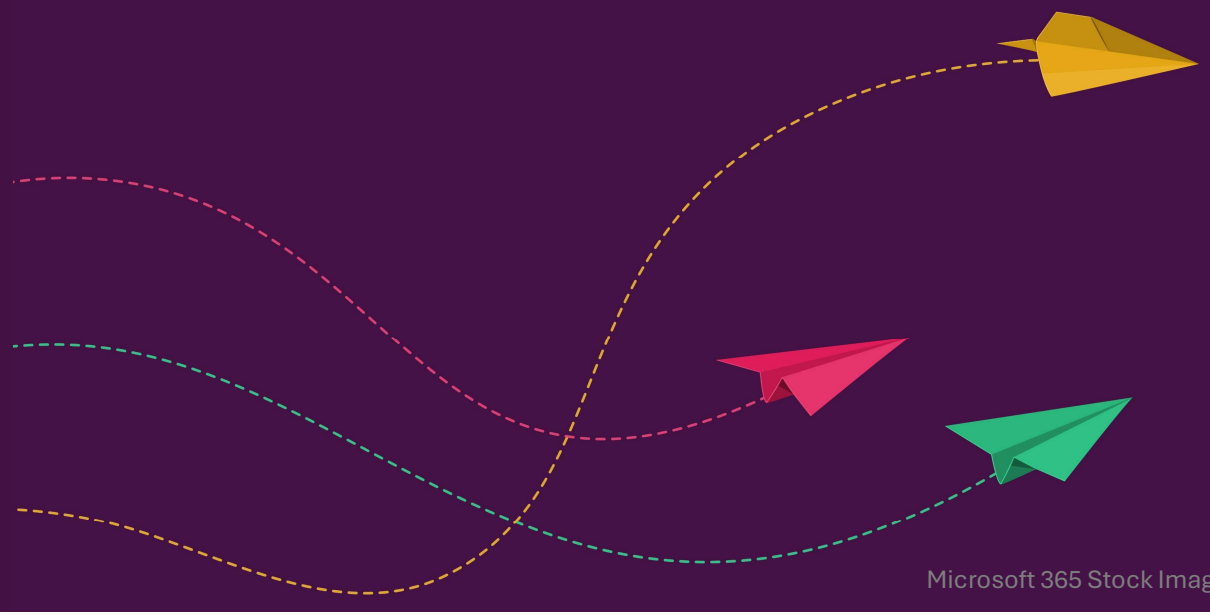
and the **projection** of their status in the near future’”[1]

1. Endsley, 1995, as cited in Prineas et al., 2020 (emphasis added)



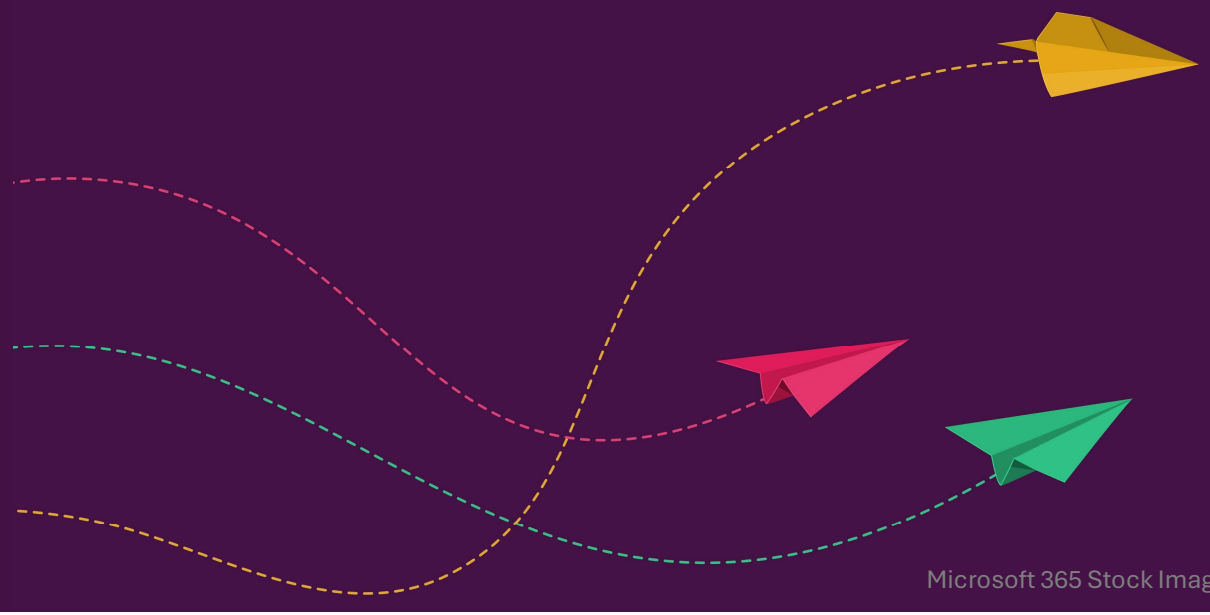
1. Prineas et al., 2020, *Figure 30.2: Situation Awareness (SA) in a clinical context.* (Courtesy of ErroMed, reproduced with permission)

“There is more bleeding than anticipated, pass me the hemostasis forceps and please call for assistance to bring & prepare the hemostasis spray”



Microsoft 365 Stock Image

“Patient’s oxygen sats just dropped to 84%, we need to stop the procedure and assist with ventilations”

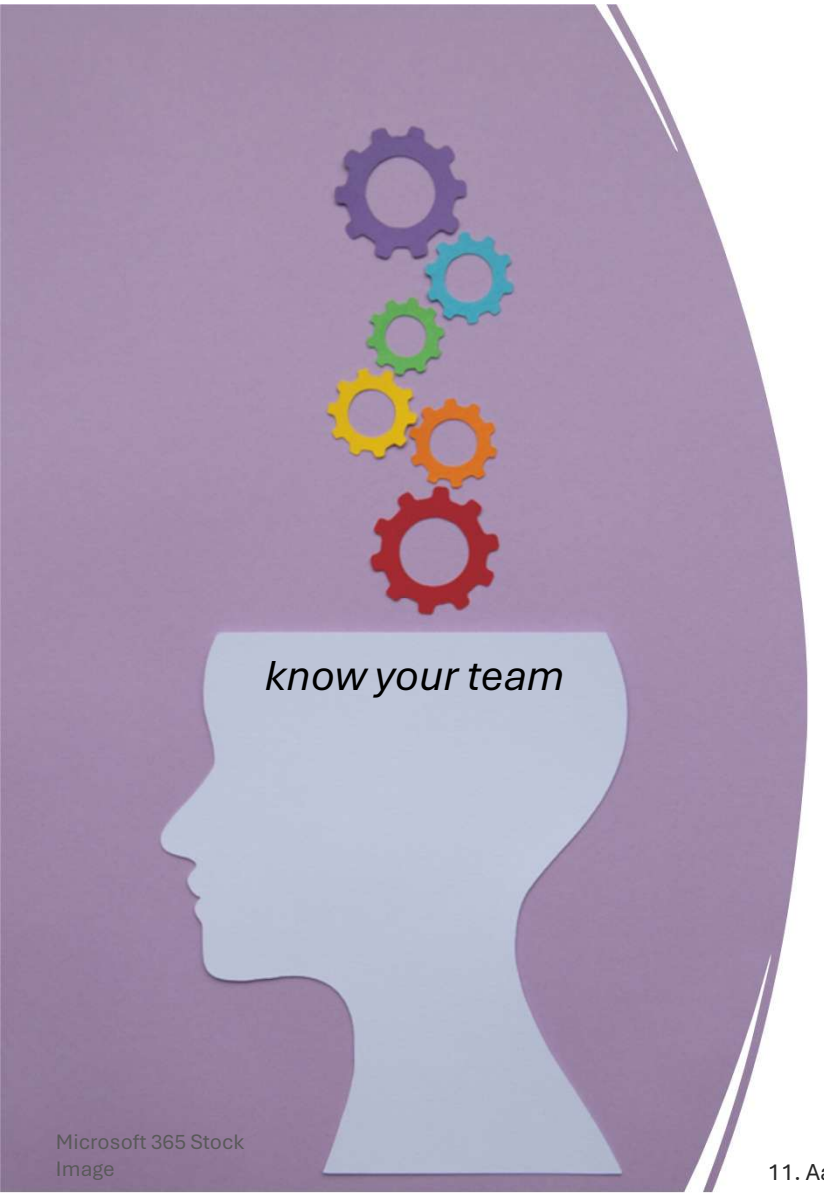


Microsoft 365 Stock Image

Know your team

Micro Moments

- pre-brief
  - (pause)
- post-brief



Microsoft 365 Stock Image

Communication

in the Endo Suite

Exchanging Information

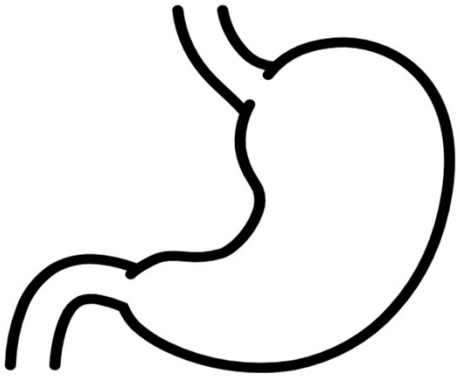
- Closed loop
- Calm, specific

Shared Understanding

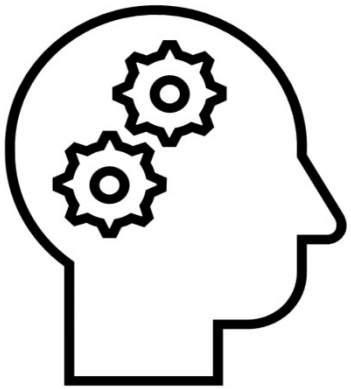
- Briefings
- Verbalize steps

8. Ravindran et al., 2020;
11. Aaberg et al., 2025; 14. Brindley & Reynolds, 2011

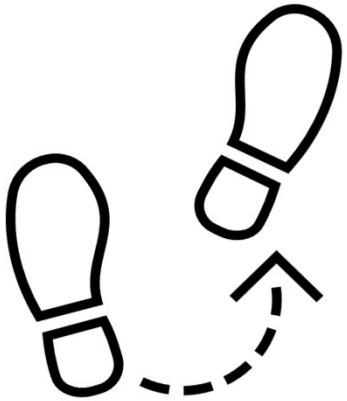
In closing…a debrief:



Gut What



Know What



Now What

17. Adapted from Eppich & Cheng, 2015

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18. Pac-Man GIFs created by Caitrin Sweeney, used with permission.

Interested in reading more about ENTS?

8) Ravindran, S., Haycock, A., Woolf, K., Thomas-Gibson, S. Development and impact of an endoscopic non-technical skills (ENTS) behavioural marker system. BMJ Simul Technol Enhanc Learn. 2020 Mar 6;7(1):17-25. doi: 10.1136/bmjstel-2019-000526. PMID: 35521085; PMCID: PMC8936727. https://doi.org/10.1136/bmjstel-2019-000526

https://pmc.ncbi.nlm.nih.gov/articles/PMC8936727/

Original research

Development and impact of an endoscopic non-technical skills (ENTS) behavioural marker system

Srivathsan Ravindran [1,2], Adam Haycock,[2,3] Katherine Woolf,[4] Siwan Thomas-Gibson[2,3]

► Additional material is published online only. To view, please visit the journal online (http://dx.doi.org/10.1136/bmjstel-2019-000526).

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Accepted 19 February 2020
Published Online First 6 March 2020

ABSTRACT

Background Non-technical skills (NTS) are crucial to effective team working in endoscopy. Training in NTS has been shown to improve team performance and patient outcomes. As such, NTS training and assessment are now considered essential components of the endoscopy quality assurance process. Across the literature, other specialties have achieved this through development of behavioural marker systems (BMS). BMS provide a framework for assessing, training and measuring the NTS relevant to healthcare individuals and team. This article describes the development and impact of a novel BMS for endoscopy: the endoscopic non-technical skills (ENTS) system.

Methods The initial NTS taxonomy for endoscopy was created through a combination of literature review, staff focus groups and semi-structured interviews, incorporating the critical decision method. Framework analysis was conducted with three individual coders and generated a skills list which formed the preliminary taxonomy. Video observation of Bowel Cancer Screening endoscopists was used to identify exemplar behaviours which were mapped to relevant skills in the NTS taxonomy. Behavioural descriptors, derived from video data, were added to form the basis of the ENTS system.

Results A taxonomy of 33 skills in 14 separate categories were identified through framework analysis. Following video analysis and behaviour mapping, 4 overarching categories and 13 behavioural elements were identified which formed the ENTS framework. The endoscopy (directly observed procedural skills) 4-point rating scale was added to create the final ENTS system. Since its development in 2010, the ENTS system has been validated in the assessment of endoscopy for trainees nationally. ENTS informs a number of training initiatives, including a national strategy to improve NTS for all endoscopists.

Conclusions The ENTS system is a clinically relevant tool, validated for use in trainee assessment. The use of ENTS will be important to the future of training and quality assurance in endoscopy.

Key messages

What is already known on this subject
- The 2004 National Confidential Enquiry into Patient Outcome and Death report highlighted the need to improve the training and assessment of non-technical skills (NTS) in endoscopy.
- A number of studies have demonstrated the use of behavioural marker systems (BMS) in accurately assessing and measuring the impact of NTS in fields such as anaesthesia and surgery.
- No such system had previously existed in the area of endoscopy.

What this study adds
- As a result of this study, the endoscopic non-technical skills (ENTS) BMS was created in 2010.
- The ENTS system has been incorporated into the assessment and training of endoscopists, and is an integral feature of national strategies to help improve the quality and safety of endoscopy.

Check for updates

To cite: Ravindran S, Haycock A, Woolf K, *et al*. *BMJ Simul Technol Enhanc Learn* 2021;**7**:17–25.

BACKGROUND

Non-technical skills (NTS) are cognitive and social skills that are important to quality and safety outcomes in healthcare.[1] Within gastrointestinal endoscopy, the importance of NTS was first highlighted in the 2004 National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report.[2] Here, NTS were identified as contributory factors to procedure-related mortality and morbidity. NTS are integral to the effective delivery of care by healthcare teams and training has been demonstrated to improve overall team performance which can lead to improved patient outcomes.[3] Since the 2004 NCEPOD report, there has been an increasing understanding that training and assessment of NTS should be an essential component in the quality assurance of endoscopy.[4]

Within healthcare, behavioural marker systems (BMS) have been developed in response to training and assessment needs. BMS are behaviour-based constructs that individuals or teams can be compared against. They offer opportunities to accurately assess, train and measure the impact of NTS.[5] BMS were originally developed in the aviation industry to identify the key NTS required by pilots to perform 'crew resource management'.[6] These principles inspired the first healthcare-specific BMS: anaesthetics non-technical skills (ANTS).[7 8] Following this were BMS designed for individuals in surgery: NOn-Technical Skills for Surgeons (NOTSS),[9–11] Oxford NOn-TECHnical Skills for Surgeons (NOTECHS)[12 13] and Scrub Practitioners' Non-Technical Skills (SPLINTS).[14] These systems appear to have similarities in structure but clear differences in content. It is evident that BMS are not created with a 'one-system-fits-all' purpose in mind but rather, designed to meet the needs of the specific individuals or teams. This is reflected in the

Additional ENTS Resources

Siau K, Pelitari S, Green S On behalf of the Joint Advisory Group on Gastrointestinal Endoscopy (JAG), *et al*

JAG consensus statements for training and certification in colonoscopy

Frontline Gastroenterology 2023;**14:**201-221.

https://fg.bmj.com/content/flgastro/14/3/201.full.pdf


Endoscopy

OPEN ACCESS

Guideline review

JAG consensus statements for training and certification in colonoscopy

Keith Siau,[1,2] Stavroula Pelitari,[3] Susi Green,[4] Brian McKaig,[5] Arun Rajendran,[6] Mark Feeney,[7] Mo Thoufeeq,[8] John Anderson,[9] Vathsan Ravindran,[10] Paul Hagan,[11] Neil Cripps,[12] Ian L P Beales,[13,14] Karen Church,[15] Nicholas I Church,[16] Elizabeth Ratcliffe,[17,18] Said Din,[19] Rupert D Pullan,[20] Sharon Powell,[21] Catherine Regan,[21] Wee Sing Ngu,[22] Eleanor Wood,[23] Sarah Mills,[24,25] Neil Hawkes,[26] Paul Dunckley,[27] Marietta Iacucci,[2,28] Siwan Thomas-Gibson,[25,29] Christopher Wells,[30] Aravinth Muruganathan,[5,31] On behalf of the Joint Advisory Group on Gastrointestinal Endoscopy (JAG)

El Menabawey T, McCrudden R, Shetty D, *et al*

UK and Ireland Joint Advisory Group (JAG) consensus statements for training and certification in diagnostic endoscopic ultrasound (EUS)

Gut 2024;**73:**118-130.

https://gut.bmj.com/content/gutjnl/73/1/118.full.pdf


Endoscopy

OPEN ACCESS

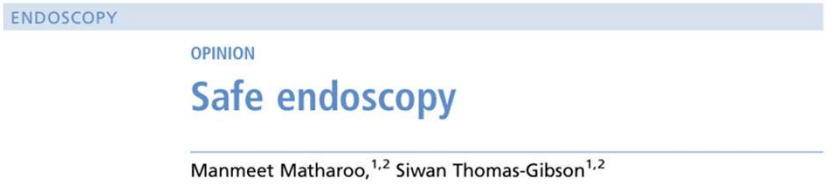
Original research

UK and Ireland Joint Advisory Group (JAG) consensus statements for training and certification in diagnostic endoscopic ultrasound (EUS)

Tareq El Menabawey,[1,2] Raymond McCrudden,[3] Dushyant Shetty,[4] Andrew D Hopper,[5] Matthew T Huggett,[6] Noor Bekkali,[7] Nicholas R Carroll,[8] Elaine Henry,[9] Gavin J Johnson,[1] Margaret G Keane,[10] Mark Love,[11] Colin J McKay,[12] Sally Norton,[13] Kofi Oppong,[14,15] Ian Penman,[16] Jayapal Ramesh,[17] Barbara Ryan,[18] Keith Siau,[19] Manu Nayar[20]

Matharoo, M., & Thomas-Gibson, S. (2017). Safe endoscopy. *Frontline gastroenterology*, *8*(2), 86–89. https://doi.org/10.1136/flgastro-2016-100766

https://pmc.ncbi.nlm.nih.gov/articles/PMC5369442/pdf/flgastro-2016-100766.pdf


ENDOSCOPY

OPINION

Safe endoscopy

Manmeet Matharoo,[1,2] Siwan Thomas-Gibson[1,2]

Additional ENTS Resources

Anderson J. (2012). The future of gastroenterology training: instruction in technical skills. *Frontline gastroenterology*, *3*(Suppl 1), i13–i18. https://doi.org/10.1136/flgastro-2011-100065

https://pmc.ncbi.nlm.nih.gov/articles/PMC5551943/pdf/flgastro-2011-100065.pdf

ANNIVERSARY ISSUE

OPINION

The future of gastroenterology training: instruction in technical skills

John Anderson

Ravindran, S., Bassett, P., Shaw, T., Dron, M., Broughton, R., Griffiths, H., Keen, D., Wood, E., Healey, C. J., Green, J., Ashrafian, H., Darzi, A., Coleman, M., & Thomas-Gibson, S. (2020). Improving safety and reducing error in endoscopy (ISREE): a survey of UK services. *Frontline gastroenterology*, *12*(7), 593–600. https://doi.org/10.1136/flgastro-2020-101561

https://pmc.ncbi.nlm.nih.gov/articles/PMC8640393/pdf/flgastro-2020-101561.pdf

Endoscopy

Original research

Improving safety and reducing error in endoscopy (ISREE): a survey of UK services

Srivathsan Ravindran [1,2] Paul Bassett,[3] Tim Shaw,[4] Michael Dron,[4] Raphael Broughton,[4] Helen Griffiths,[1] Dimple Keen,[1] Eleanor Wood [5,6] Chris J Healey,[1,7] John Green,[8] Hutan Ashrafian,[2] Ara Darzi,[2] Mark Coleman,[1,9] Siwan Thomas-Gibson [2,10]

Ravindran, S., Thomas-Gibson, S., Murray, S., & Wood, E. (2019). Improving safety and reducing error in endoscopy: simulation training in human factors. *Frontline gastroenterology*, *10*(2), 160–166. https://doi.org/10.1136/flgastro-2018-101078

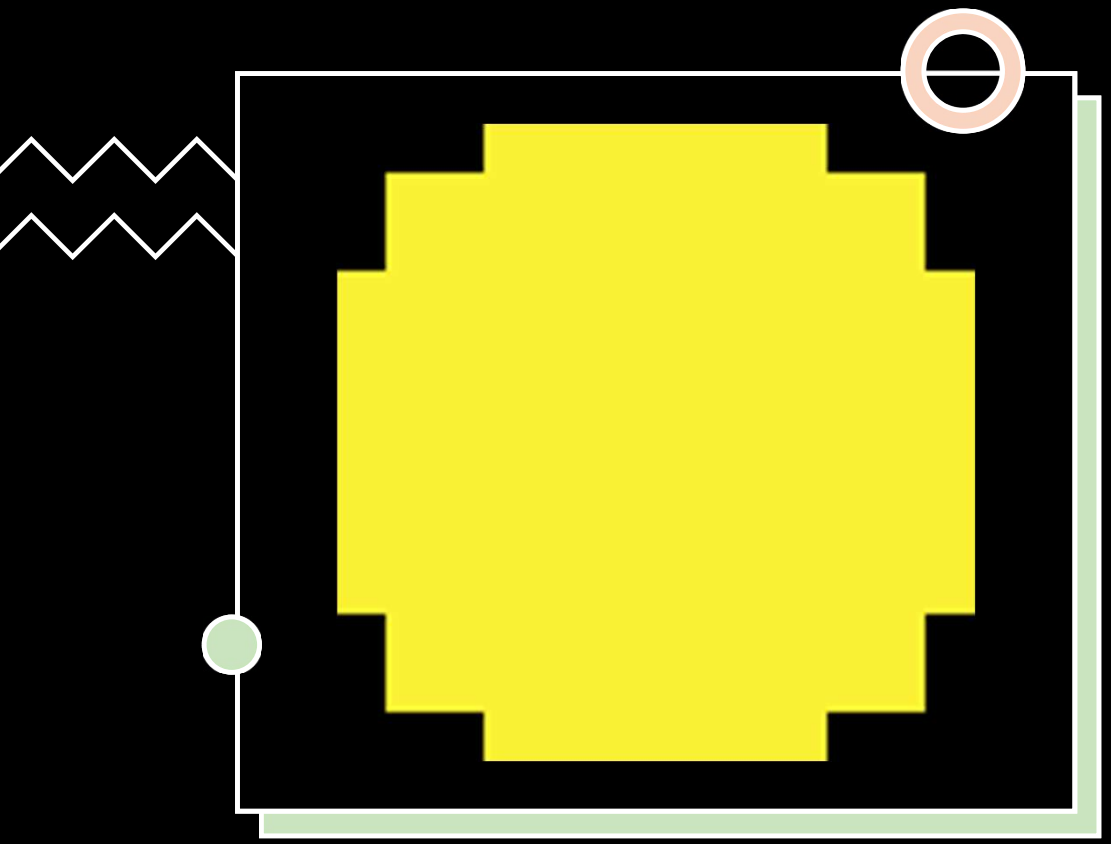
https://pmc.ncbi.nlm.nih.gov/articles/PMC6540271/pdf/flgastro-2018-101078.pdf

ENDOSCOPY

REVIEW

Improving safety and reducing error in endoscopy: simulation training in human factors

Srivathsan Ravindran,[1,2] Siwan Thomas-Gibson,[1,2] Sam Murray,[3] Eleanor Wood[4,5]



Thank you!

Danae.Drouin@albertahealthservices.ca