



Jennifer Cleland

Wade Professor of Surgical Education
Research (supported by the Pilmuir Trust)

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Jennifer Cleland BSc, MSc, PhD, D Clinical Psychol

Wade Professor of Surgical Education, Royal College of Surgeons of Edinburgh (RCSEd)

Prof Jennifer Cleland has recently been appointed by the RCSEd to co-lead a new Surgical Education Research and Innovation Lab (SERI Lab), launching in 2024.



An occupational and clinical psychologist by training, she found her home in medical education in 2000. Her first job was as an Honorary Lecturer in the School of Medicine, University of Aberdeen, UK, a post divided between teaching and clinical work in hospital (Liaison) psychiatry. Rising steadily through the ranks, to Personal Chair then Endowed Chair in 2011, she was at the coal face of medical education for more than 10 years. After the focus of her role switched to fully focus on education research in 2011, she remained as a member of the senior management team of the Aberdeen medical degree until 2020, advising and supporting on operational matters and strategic initiatives. She then felt it was time for a new challenge, so moved to Singapore to build up a medical education research and scholarship unit.

From the start of her career in medical education, she has used her “outsider’s view” to full benefit, questioning why things are done in certain ways and working closely with colleagues from many different medical specialties to address real life problems in medical education and training. The golden thread which runs through her research is “getting the right people into and through medicine and into the right jobs”. In short, how can we ensure a medical workforce which is fit for purpose in terms of meeting population healthcare need? This description is important to understand the influence of her work, which encompasses a wide array of issues, from selection processes, through aspects of teaching and assessment (effective – and cost-effective - training), to influences on career decision making and recruitment and retention of the medical workforce. Her aim always is to engage in robust and conceptually driven research which has practical utility.

She has delivered over 100 invited national and international talks, and published over 300 scientific papers and book chapters, as well two editions of the textbook *Researching Medical Education*. She holds editorial roles with the journals *Medical Education* and *Advances in Health Sciences Education*. She has been honoured with honorary professorial/external faculty appointments from seven universities across four continents. She is an Associate Fellow with the Faculty of Surgical Trainers (FST) and a Fellow of the Royal College of Physicians of Edinburgh. She received the Ian Hart International Award for Innovation in Medical Education (2022).

Together with Prof Ken Walker, Prof Cleland has co-supervised a series of PhD fellows studying various surgical interventions and innovations, using mixed qualitative and quantitative methods, and publishing their findings; a model which will expand with the new SERI Lab.

Jen is married to an anaesthetist and they have one teenage daughter. She is a keen walker and cyclist. Her exercise repertoire now includes yoga and pilates, to try to counter middle-aged stiffness. Her other big passion is wine tasting (she was awarded WSET Level 3 in 2019), but this hobby is currently on hold due to the ridiculously high cost of alcohol in Singapore.

SELECTED JOINT PUBLICATIONS

Integrated Surgical Simulation

Shah AP, Cleland JA, Walker KA, Hawick L, Walker KG. Integrating simulation into surgical training. A qualitative case study of a national programme. *Advances in Simulation* 2023; 8: 20.

Shah AP, Walker KA, Walker KG, Cleland JA. Context matters in curriculum reform: a story of national level change in surgical training. *Medical Education* 2023; 57(8): 741- 752.

Shah AP, Walker KA, Hawick L, Walker KG, Cleland JA. Scratching beneath the surface: how organisational culture(s) influences curricular reform. *Medical Education* 2023; 57(7): 668- 678.

Shah AP, Walker KA, Walker KG, Hawick L, Cleland JA. It's making me think outside the box at times: a qualitative study of dynamic capabilities in surgical training. *Advances in Health Sciences Education* 2022; 26: 1-20.

Deliberate Practice

Walker KG, Shah AP, Brennan P, Blackhall VI, Nicol LG, Yalamarathi S, Vella M, Cleland JA. Scotland's "Incentivised Laparoscopy Practice" programme: engaging trainees with take-home laparoscopic simulation. *The Surgeon* 2023; 21(3): 190-7.

Falconer R, Semple CM, Walker KG, Cleland J, Watson AJM. Simulation for technical skill acquisition in open vascular surgery. *Journal of vascular Surgery* 2021; 73(5): 1821-1827.

Surgical Boot Camps

Walker KG, Blackhall VI, Hogg ME, Watson AJM. Eight years of Scottish surgical boot camps – how we do it now. *Journal of Surgical Education* 2020; 77(2): 235-241.

Cleland JA, Walker KG, Gale M, Nicol LG. Understanding the sociocultural complexity of a surgical simulation “Boot Camp”. *Medical Education* 2016; 50(8): 829-41. (CAMES1 award for Innovation in Simulation 2016.)

Thomas IM, Nicol LG, Regan L, Cleland JA, Maliapaard D, Clark L, Walker KG, Duncan JL. Medical students driven to distraction. Improving patient safety teaching through the use of a simulated ward round experience: a prospective controlled study. *BMJ of Quality & Safety* 2015; 24: 154-161.

Understanding expertise

Walker KG, Whiteley I. iView Expert: lessons from space on seeing inside the heads of experts. *Bulletin of the Royal College of Surgeons of England*, 40th anniversary edition June 2023.

Blackhall VI, Cleland JA, Moug S, Wilson P, Walker KG. Barriers and facilitators to deliberate practice using take-home laparoscopic simulators. *Surgical Endoscopy* 2019; 33(9): 2951-9.

Falconer R, Cleland JA, Semple C, Walker KG, Watson AJM. Development and delivery of a national pilot programme of home-based simulation for vascular anastomosis training. *Journal of Surgical Simulation* 2022; 9: 99-106.

Blackhall VI, Walker KG, Whiteley I, Wilson P, Cleland JA. iView Expert: a tool to uncover expertise and support surgical skills training. *Medical Education* 2021; 55(5): 658.

SELECTED PUBLICATIONS

<p>Predicting performance in surgical training</p> <p>Note that Ellis and Scrimgeour were Intercollegiate Fellows, who successfully achieved PhDs in surgical education from the University of Aberdeen, with Cleland as main supervisor.</p> <p>This is a selection of their publications:</p> <p>Ellis R, Cleland J, Scrimgeour DSG, Lee AJ, Hines J, Brennan PA. Establishing the predictive validity of the intercollegiate membership of the Royal Colleges of Surgeons written examination: MRCS Part A. <i>The Surgeon</i> 2023;21(6):323-330.</p> <p>Ellis R, Cleland J, Scrimgeour DSG, Lee AJ, Hines J, Brennan PA. Establishing the predictive validity of the intercollegiate membership of the Royal Colleges of Surgeons written examination: MRCS Part B. <i>The Surgeon</i> 2023; 23(5): 278-284.</p> <p>Ellis R, Brennan PA, Hines J, Lee AJ, Cleland J. Examining the diversity of MRCS examiners. <i>The Surgeon</i> 2023; 21(5): 273-277.</p> <p>Ellis R, Cleland J, Scrimgeour DSG, Lee AJ, Brennan PA. A cross-sectional study examining the association between MRCS performance and surgeons receiving sanctions against their medical registration. <i>The Surgeon</i> 2022; 20 (4): 211-215.</p> <p>Ellis R, Brennan PA, Lee AJ, Scrimgeour DS, Cleland J. Differential attainment at MRCS according to gender, ethnicity, age and socioeconomic factors: a retrospective cohort study. <i>Journal of the Royal Society of Medicine</i> 2022; 115(7): 257-272.</p> <p>Scrimgeour DSG, Cleland J, Lee AJ, Brennan PA. Prediction of success at UK Specialty Board Examinations using the mandatory postgraduate UK surgical examination, <i>BJS Open</i> 2019; 3: 865-871.</p> <p>Scrimgeour DSG, Patel R, Patel N, Cleland J, Lee AJ, McKinley AJ, Smith FCT, Griffiths G, Brennan PA. The effects of human factor related issues on assessors during the recruitment process for general and vascular surgery in the UK. <i>Annals of the Royal College of Surgeons of England</i> 2019: 101 (4); 231-234.</p> <p>Scrimgeour DSG, Brennan PA., Griffiths G., Lee AJ, Smith FCT. & Cleland, J. Does the Intercollegiate Membership of the Royal College of Surgeons (MRCS) examination predict 'on-the-job' performance during UK higher specialty surgical training? <i>Annals of the Royal College of Surgeons of England</i> 2018; 100: 669-675.</p> <p>Scrimgeour DSG, Cleland JA, Lee AP, Griffiths G, Brennan P. Which factors predict success at the mandatory UK postgraduate surgical exam: The Intercollegiate Membership of the Royal College of Surgeons (MRCS)? <i>The Surgeon</i> 2018; 16: 220-226.</p> <p>Scrimgeour DSG, Cleland JA, Lee AP, Griffiths G, McKinley AJ, Marx C, Brennan P. Impact of performance in a mandatory postgraduate surgical examination on selection into specialty training <i>British Journal of Surgery Open</i> 2017; 1 (3): 67-74.</p>	<p>Surgical decision making</p> <p>Bisset took time out of training to achieve a PhD, with Cleland as a co-supervisor (Lead supervisor – Prof Moug) .</p> <p>Bisset CN, Moug SJ, Oliphant R, Dames N, Parson S, Cleland J. Influencing factors in surgical decision-making: a qualitative analysis of colorectal surgeons' experiences of postoperative complications. <i>Colorectal Disease</i>. 2024; 26: 987–993.</p> <p>Bissett CN, Ferguson E, MacDermid E, Stein SL, Yassin N, Dames N, Keller DS, Oliphant R, Parson SH, Cleland J, Moug SJ. Exploring variation in surgical practice: does surgeon personality influence anastomotic decision-making? <i>British Journal of Surgery</i> 2022; 14;109(11): 1156-1163.</p> <p>Bisset CN, Dames N, Oliphant R, Alasadi A, Anderson D, Parson S, Cleland J, Moug S. Exploring shared surgical decision-making from the patient's perspective: Is the personality of the surgeon important? <i>Colorectal Disease</i> 2020; 22 (2): 2214-2221.</p> <p>Generally relevant to surgical training in Scotland (selected)</p> <p>MacLaren AS, Hollick R, Locok L, Marchie P, Skea Z, Skatun D, Cleland J, Watson V, Denison A, Wilson P. 'Moving to the countryside and staying'? Exploring doctors' migration choices to rural areas. <i>Journal of Rural Studies</i>. 2024. Early online May 20. https://doi.org/10.1016/j.jrurstud.2024.103210</p> <p>Cleland J, Porteous T, Ejebud O-Z, Ryan M, Skatun, D. Won't you stay just a little bit longer? A discrete choice experiment of UK doctors' preferences for delaying retirement. <i>Health Policy</i> 2022; 126: 60-68.</p> <p>Maclaren AS, Cleland J, Locock L, Skea Z, Denison A, Hollick R, Murchie P, Wilson P. Understanding recruitment and retention of doctors in rural Scotland: Stakeholder perspectives. <i>The Geographical Journal</i>. 2022; 188 (2): 149-308.</p> <p>Cleland J, Porteous T, Ejebu O, Skatun D. "Should I stay or should I go now?": A qualitative study of why doctors retire. <i>Medical Education</i> 2020; 54 (9): 54:821–831.</p> <p>Scanlan G, Johnston P, Walker K, Skatun D, Cleland J. Today's doctors: what do men and women value in a training post? <i>Medical Education</i> 2020; 54 (5): 408-418.</p> <p>Kumwenda B., Cleland J, Walker K, Johnston, PJ, Prescott, G. The relationship between socio- demographic factors and selection into UK postgraduate medical training programmes: a national cohort study. <i>BMJ Open</i> 2018;8:e021329. doi: 10.1136/bmjopen-2017-021329.</p> <p>Scanlan G, Cleland JA, Johnston PJ, Walker K, Does Perceived Organizational Support Influence Career Intentions? The Qualitative Stories Shared by UK Early Career Doctors. <i>BMJ Open</i> 2018;8:e022833. doi:10.1136/bmjopen-2018-022833.</p> <p>Scanlan G, Cleland JA, Johnston PJ, Walker K, Krucien N, Skatun D. What factors are critical to attracting NHS foundation doctors into specialty or core training? A discrete choice experiment <i>BMJ Open</i> 2018, 8 (3) e019911; DOI: 10.1136/bmjopen-2017-019911.</p> <p>Cleland JA, Roberts R, Kitto S, Strand P, Johnston PJ. Using paradox theory to discern responses to service-training tensions in general surgery. <i>Medical Education</i> 2018; 52 (3): 288-301.</p>
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EXPERT PANELS

Surgical Royal Colleges**Scottish Surgical Simulation Collaborative**

Health Education England's (HEE) Shape of Training Expert Advisory Group 2015

NHS Education for Scotland

NHS Education for Scotland Medical Directorate Research & Development Governance Board (2018-2020)

World Health Organization (WHO)

Member of the multi-region WHO Academy Advisory Group on Quality in February 2023 (<https://www.who.int/about/who-academy>)

FELLOWS

Surgical Education Research Fellows

Rahee Mapara – The influence of gender and diversity on experience of workplace-based assessments in surgical training (for PhD, Glasgow)

Anna Kieslich – An integrated approach to robotic surgical training (for PhD, Aberdeen)

Emudiaga Emanuwa – Video-assisted coaching in communication skills for surgeons (for PhD, Edinburgh)

Adarsh Shah PhD Aberdeen 2023. "Complexity in curriculum reform: a qualitative case study of the Scottish 'Improving Surgical Training' pilot."

Saskia Clark-Stewart MSc Edinburgh 2023. "Preparing the Specialty Trainee – developing Non-Technical Skills beyond the operating theatre, through simulation."

Director, WHO Collaborating Centre (CC) for Digital Health and Health Education, Singapore

Rachel Falconer PhD Aberdeen 2022. "Vascular surgical simulation programmes using novel 3D-printed hydrogel models."

Vivienne Blackhall PhD Aberdeen 2019. "A mixed methods study of clinician experience with two innovative skills training interventions."

Aliasger Amin MMedEd Newcastle 2017. "iView Expert: externalising surgeons' expertise in complex tasks."

Laura Nicol MSc Edinburgh 2016. "Incentivised Laparoscopy Practice."

Rural Surgical Fellows

Lauren Smithson, Sarah Prince, Alan Grant

International Surgical Fellows

Ann Sunny, Arbin Joshi, Daniel Rajkumar, Nirmal Lamichhane