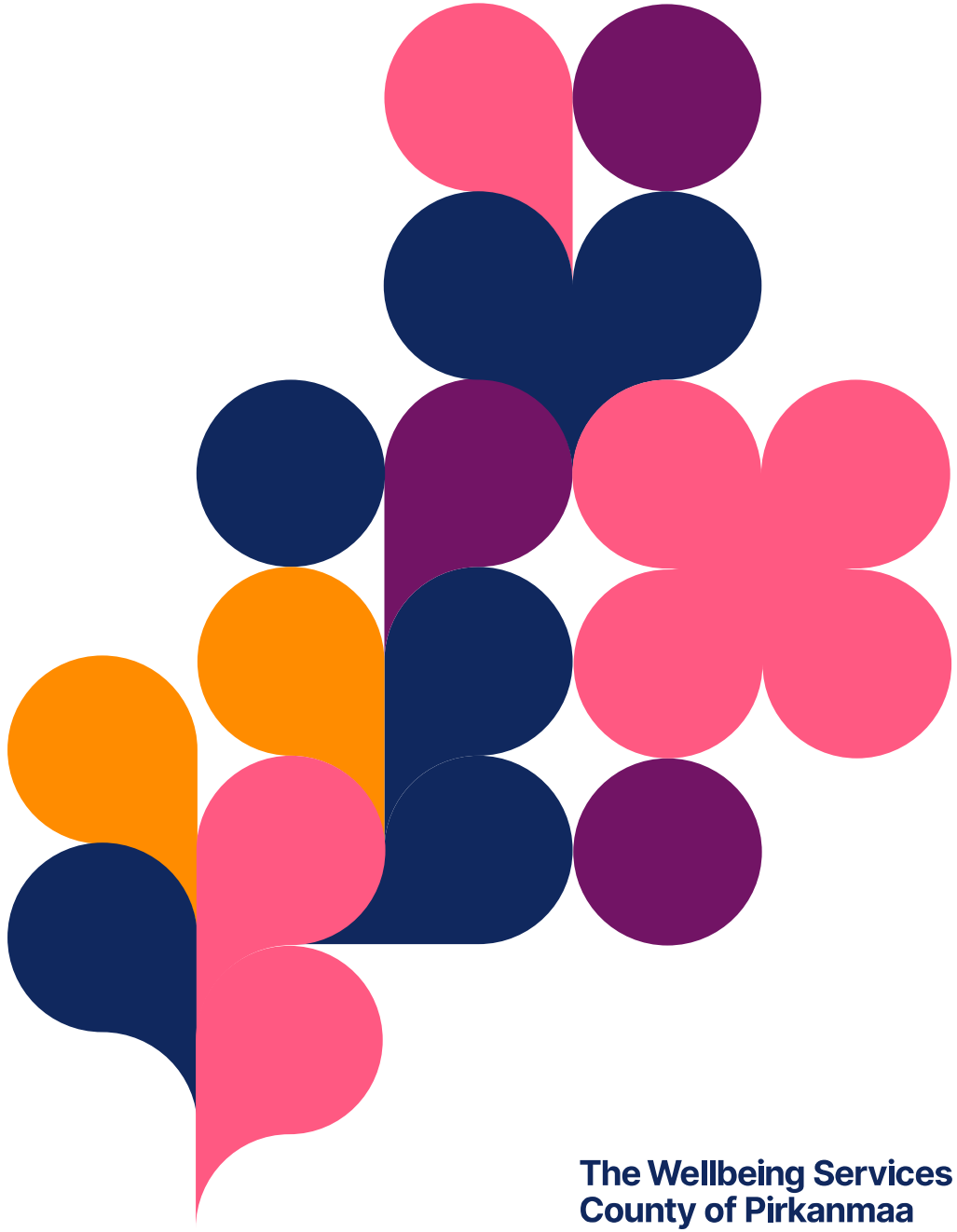
# How to exceed in surgery

Thea Veitonmäki



The Wellbeing Services
County of Pirkanmaa

# Definition of a great surgeon

- **4760 qualities and 4,374 shortcomings from 1,620** respondents including 385 surgeons, 291 patients, 565 operating theater (OT) health professionals, and 379 non-OT health professionals.
- The main three qualities **were dexterity (54% of respondents), meticulousness (18%), and empathy (18%).**
- Compared with surgeons, non-OT health professionals and patients put more emphasis on human qualities (29 vs. 39% and 42%, respectively, $p < .001$).
- OT health professionals referred more to NTS than surgeons (35 vs. 22%, $p < 0.001$).
- Knowledge was more important for surgeons (19%) than for all other professional categories ($p < 0.001$).

Front Med (Lausanne). 2023 Jun 28;10:1210915. doi: 10.3389/fmed.2023.1210915

## What defines a great surgeon? A survey study confronting perspectives

Romain Luscan [1,2], Emeline Malheiro [3], Fiona Sisso [1,4], Sébastien Wartelle [5], Yann Parc [6,7], Brigitte Fauroux [8,9], Thierry Bégué [10,11], Hubert Johanet [12,13], Françoise Denoyelle [1,2], Erea-Noël Garabédian [1,2], François Simon [1,2,*]

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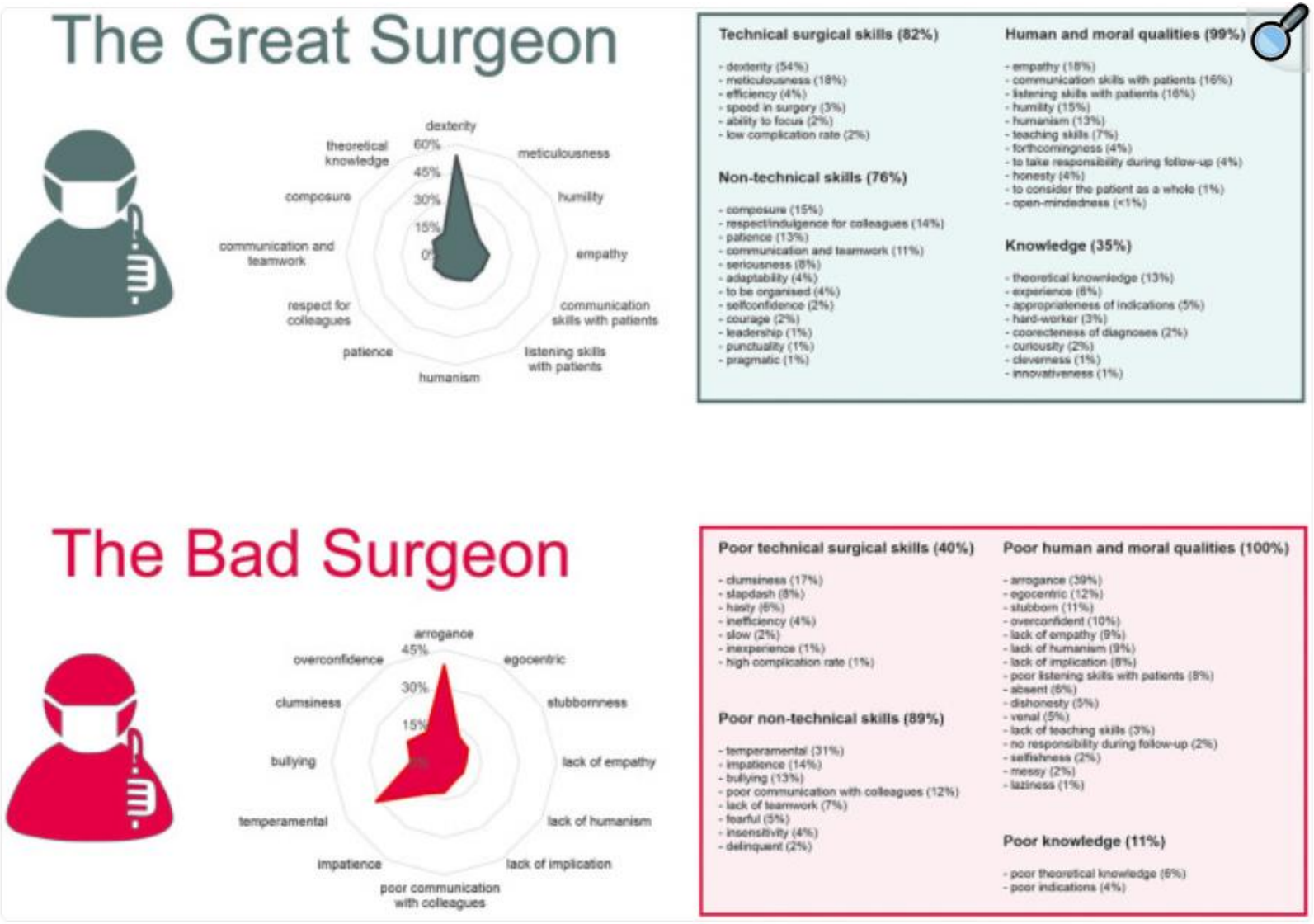
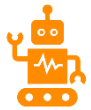


# AI definition of a great surgeon



## Technical Skill and Knowledge

**Precision:** Displays excellent hand-eye coordination and attention to detail to perform surgeries safely and effectively.

**Expertise:** Has a solid understanding of anatomy, medical conditions, and surgical techniques, with the ability to apply this knowledge in practice.

**Continuous Learning:** Actively pursues further education and stays up-to-date on new techniques and medical advancements.

**Problem-Solving:** Remains flexible and resourceful when unexpected challenges arise during procedures.

## Sound Decision-Making

**Critical Thinking:** Analyzes complex situations to determine the best approach for the patient.

**Risk Assessment:** Carefully weighs the benefits and risks of different treatment options.

**Preparedness:** Plans thoroughly and anticipates potential complications, ready with solutions if needed.

## Empathy and Communication

**Patient Care:** Takes the time to understand patients' concerns, explains procedures clearly, and respects their preferences.

**Team Collaboration:** Works effectively with other healthcare professionals to ensure cohesive care.

**Reassurance:** Builds trust with patients and families by addressing their fears with empathy and clarity.

## Ethical Integrity

**Advocacy:** Puts patients' well-being first and prioritizes their needs in all decisions.

**Transparency:** Communicates honestly about risks, outcomes, and treatment options.

**Professionalism:** Maintains confidentiality and upholds ethical standards in all interactions.

## Resilience and Focus

**Endurance:** Can sustain concentration and energy during lengthy and challenging surgeries.

**Composure:** Stays calm and focused under pressure, even in high-stress situations.

**Self-Care:** Balances personal well-being to ensure long-term effectiveness as a surgeon.

## Commitment to Excellence

**Attention to Detail:** Ensures thorough care in all aspects, from preparation to follow-up.

**Accountability:** Takes responsibility for outcomes and continuously seeks improvement.

**Teaching and Mentorship:** Shares knowledge and skills to train and inspire future surgeons.

**Innovation:** Seeks new ways to improve surgical techniques and enhance patient care.

- video-based evaluation of robot-assisted partial nephrectomy,
- 10 urological surgeons participating in a surgical collaborative in Michigan from July 2021 to September 2022.
- Each surgeon submitted up to 7 videos performing robot-assisted partial nephrectomy. Videos were segmented into 6 key steps, yielding 127 video clips for analysis. Each video clip was deidentified and distributed to at least 3 of the 24 blinded peer surgeons from the collaborative who also perform robot-assisted partial nephrectomy. Reviewers rated technical skill and provided written feedback.
- Reviewers scored each video clip using a validated instrument to assess technical skill for partial nephrectomy on a scale of 1 to 5 length
- Among the 27, 3 (11%) were female, and the median age was 47 (IQR, 39-52) years.
- performance score ranged from 3.5 to 4.7 points with a mean (SD) of 4.1 (0.4) points. **Greater skill was correlated with significantly lower rates of LOS greater than 3 days** (-6.8% [95% CI, -8.3% to -5.2%]), **EBL greater than 500 mL** (-2.6% [95% CI, -3.0% to -2.1%]), PSM (-8.2% [95% CI, -9.2% to -7.2%]), **ED visits** (-3.9% [95% CI, -5.0% to -2.8%]), **and readmissions** (-5.7% [95% CI, -6.9% to -4.6%]) ($P < .001$ for all). **Higher overall score was also associated with higher partial nephrectomy volume** (β coefficient, 11.4 [95% CI, 10.0-12.7]; $P < .001$).
- **higher technical skill was associated with lower rates of adverse clinical outcomes.**



JAMA Netw Open. 2024 Jul 1;7(7):e2421696. doi: 10.1001/jamanetworkopen.2024.21696.

# Surgeon Skill and Perioperative Outcomes in Robot-Assisted Partial Nephrectomy

Yuzhi Wang [1], Samantha Wilder [1], Mahmoud Hijazi [2], Marquisha D Myles [1], Mahin Mirza [2], Monica Van Til [2], Thomas Maatman [3], Khurshid R Ghani [2], Brian R Lane [4 5], Craig G Rogers [1]; Michigan Urological Surgery Improvement Collaborative

Affiliations + expand

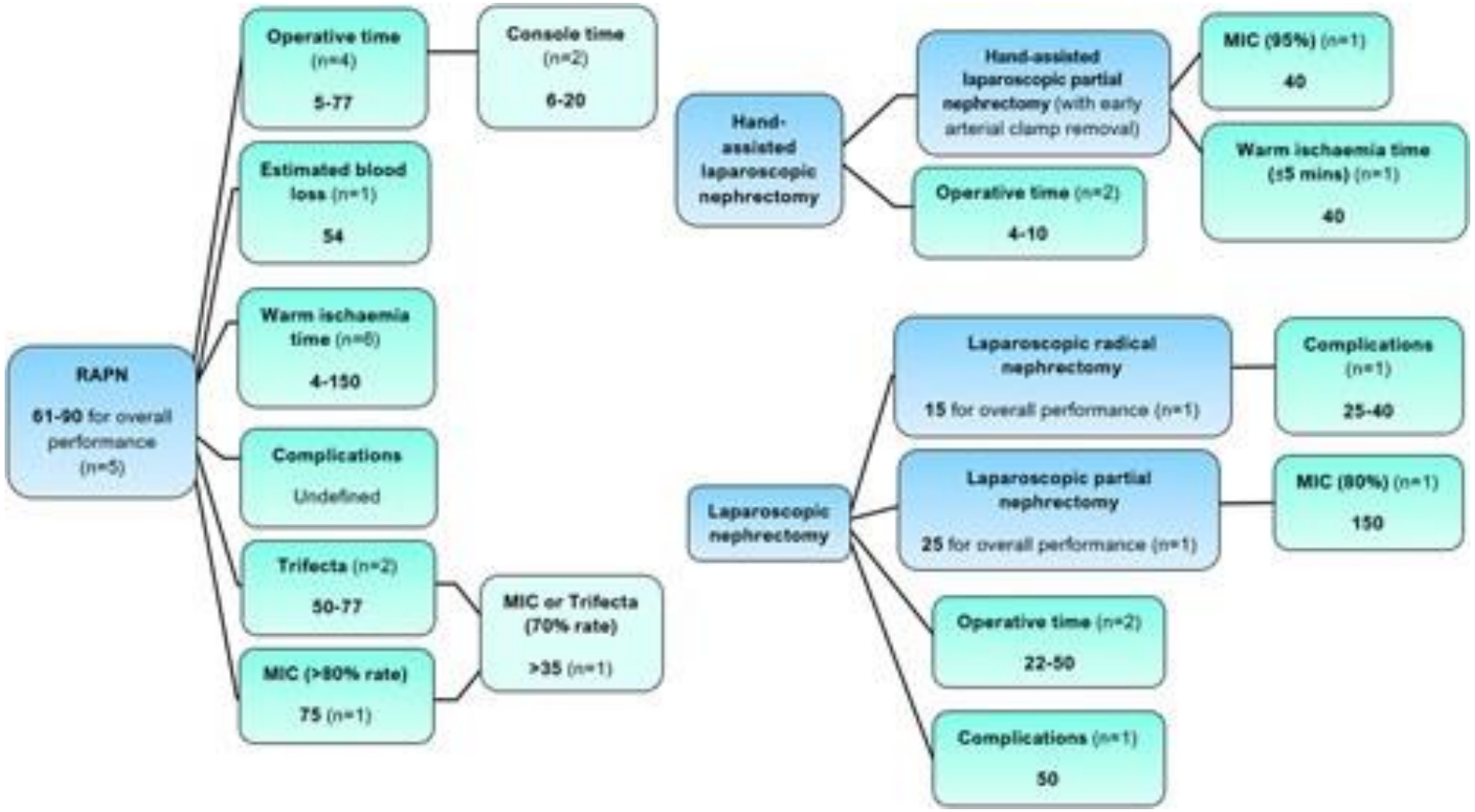
PMID: 39008300 PMCID: PMC11250260 DOI: 10.1001/jamanetworkopen.2024.21696

# Practise

Int J Surg. 2023 Jul 1;109(7):2037-2057. doi: 10.1097/JS9.0000000000000345.

## The learning curves of major laparoscopic and robotic procedures in urology: a systematic review

Baldev Chahal [1], Abdullatif Aydin [1 2], Mohammad S A Amin [3], Azhar Khan [2 4], Muhammad S Khan [4], Kamran Ahmed [1 2], Prokar Dasgupta [1 4]

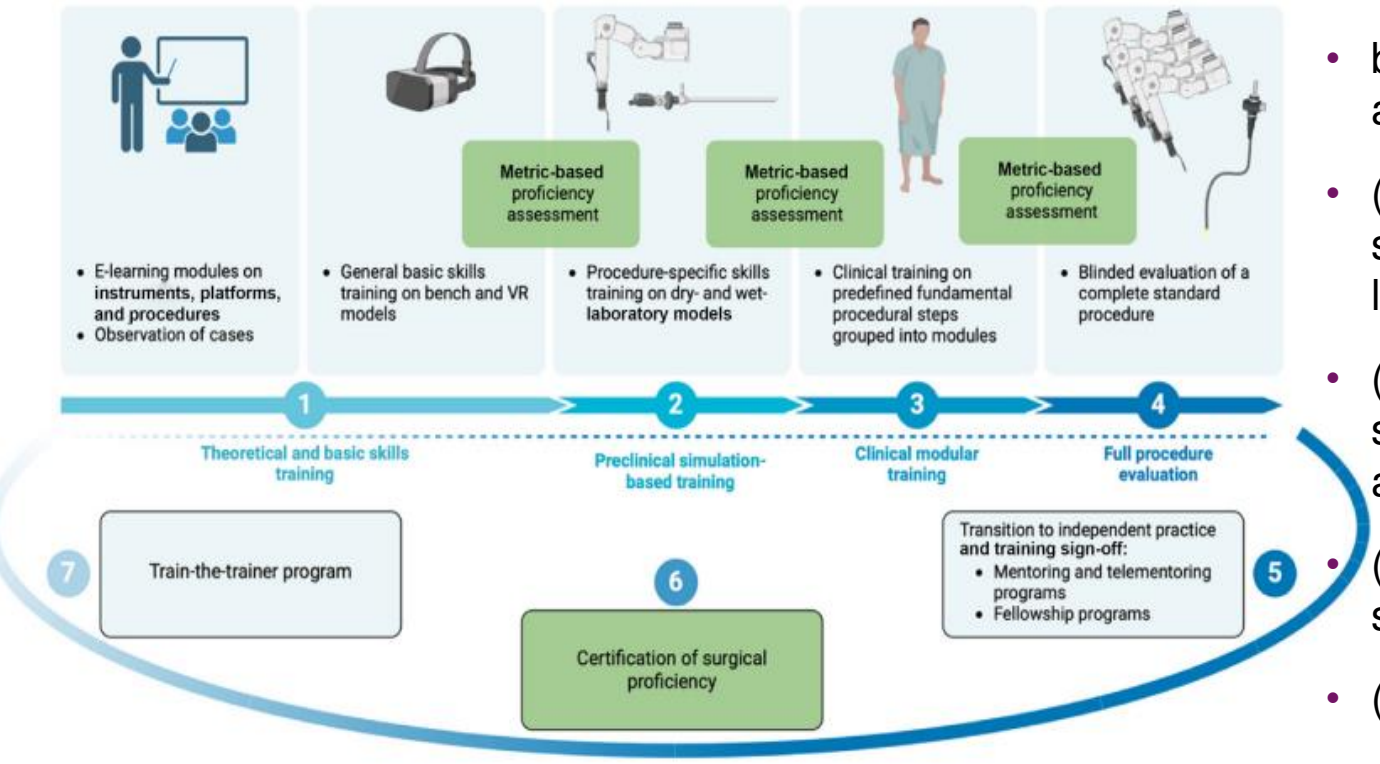



- Systematic review of 97 studies
- operative time (OT), estimated blood loss, complication rates, warm ischemia time, procedure-specific outcomes

# Proposal for a comprehensive and standardized modular training pathway based on current evidence and expert recommendations

EUROPEAN UROLOGY 86 (2024) 130–145





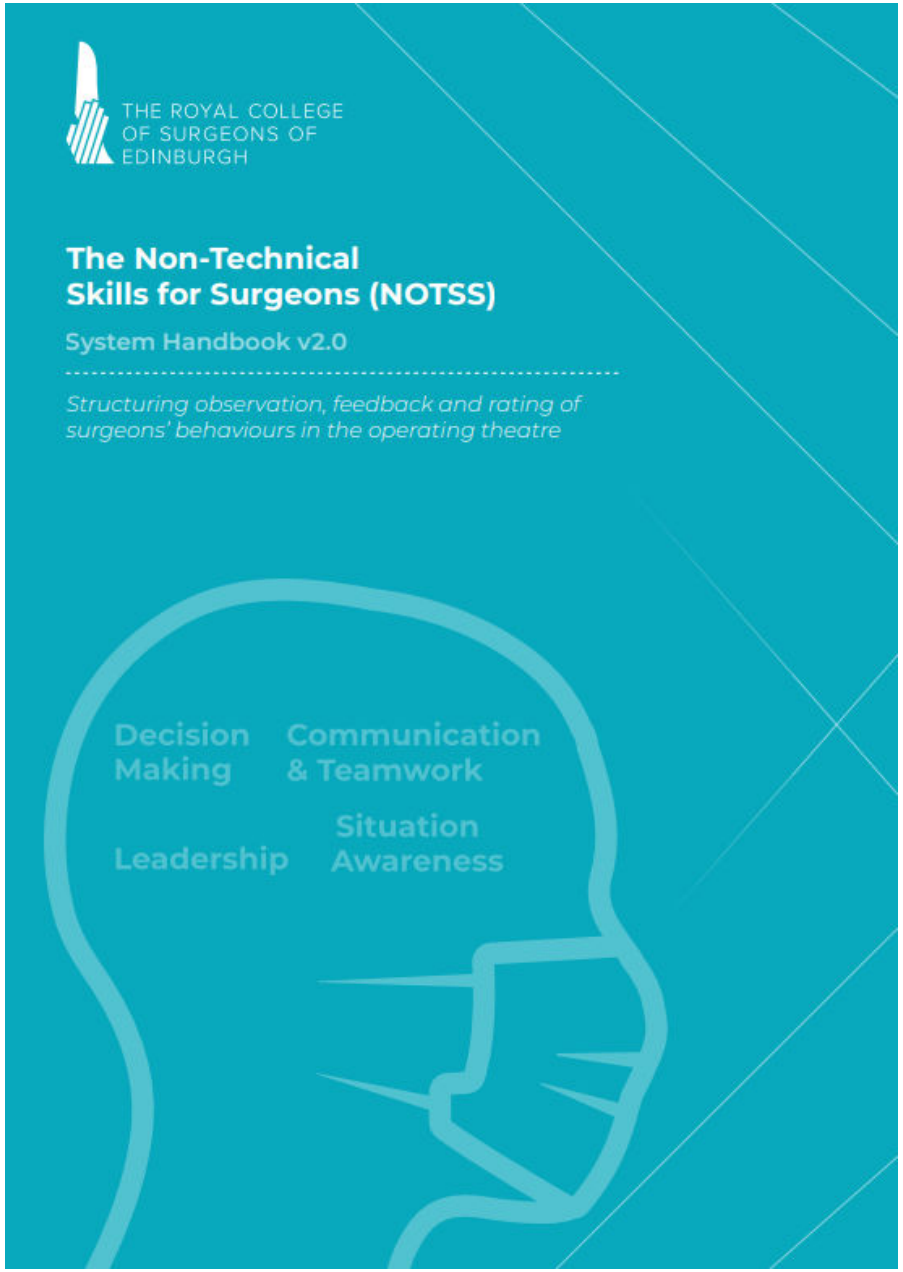

- (1) Theoretical and basic skills training: online training on instruments, platforms, and theoretical aspects of surgical procedures. observation designated surgical procedures
- basic skills simulation-based training on virtual reality (VR) and bench-top models is conducted,
- (2) Preclinical simulation-based training: procedure-specific simulation-based training is carried out in dry- or wet-laboratory (if available)
- (3) Clinical modular training: fundamental steps of the surgical procedure are identified via a Delphi consensus among experts and the complexity of each is ranked.
- (4) Full procedure evaluation: the trainee carries out a full standard procedure
- (5) Transition to independent practice and training sign-off:
- (6) Certification of surgical proficiency:
- (7) Train-the-trainer program: surgeons who complete all the steps of the training curriculum and receive certification for independent surgical practice may become trainers.

# Non-technical skills

- cognitive and social skills by which surgeons make and execute decisions in the perioperative environment.
  - **Leadership**
  - **communication and teamwork**
  - **situation awareness**
  - **decision making.**
- teachable and can be evaluated and refined over time.
- Lapses in these abilities are responsible for a **large proportion of medical errors**.
- Systems errors, rather than isolated technical mistakes, contributed to the adverse outcome in up to 86% of cases
- The 2010 Scottish Audit of Surgical Mortality reported that only 4.3% of adverse operative events were related to technical errors, **most complications resulted from poor decision making**
- Implementation of the WHO surgical checklist is an acknowledgment and an example of the importance of nontechnical skills in improving the care of surgical patients.

Stucke et al 2021

# The Non-Technical Skills for Surgeons (NOTSS) system




- behavioural rating system developed by a multi-disciplinary group comprising psychologists, surgeons, and anaesthetists in 2006 Aberdeen, Scotland.
- describes the main observable non-technical skills associated with good surgical practice
- can be used to observe and rate surgeons' behaviour in theatre in a structured manner and allow a clear and transparent assessment of training needs to be made.

Table 1

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

## ACHIEVING EXCELLENCE IN SURGERY

| | |
|---|---|
| Mentorship | Have a role model and a trustworthy advisor |
| Technical skills are essential, yet not sufficient | Balance good technical skills with knowledge and common sense |
| Seek to benefit your patients and not your recognition | Walk away from narcissistic concepts and adulation |
| First, "do no harm" | Don't be reckless with other people's lives |
| Operate slowly and think quickly | Remain calm, think through your maneuvers, and execute them accurately |
| Make surgery look simple | Don't be ostentatious |
| Be patient | Don't let anxiety determine the outcome of the surgery |
| Motivate your team | Lead and support your surgical team |
| Enjoy your work | Find pleasure and passion in surgery |
| Manage fear and know your limits | Feel fear and thrive on it; audit your results and study your limits |
| Learn from your mistakes and share your knowledge | Learn from mistakes and share your knowledge with others; ask for help when needed |
| Relate to your patients, bring them comfort and relief | See the patient as a whole and accompany them through the process of illness |
| Be grateful and humble | Honor your mentors by "paying it forward" |
| Balance your life | Work while focused on your patients and live life focused on your family and friends |
| Be a good person | Above everything else, be humane |

# How to exceed in surgery

## Excellence in surgery: Becoming the "best" you can be

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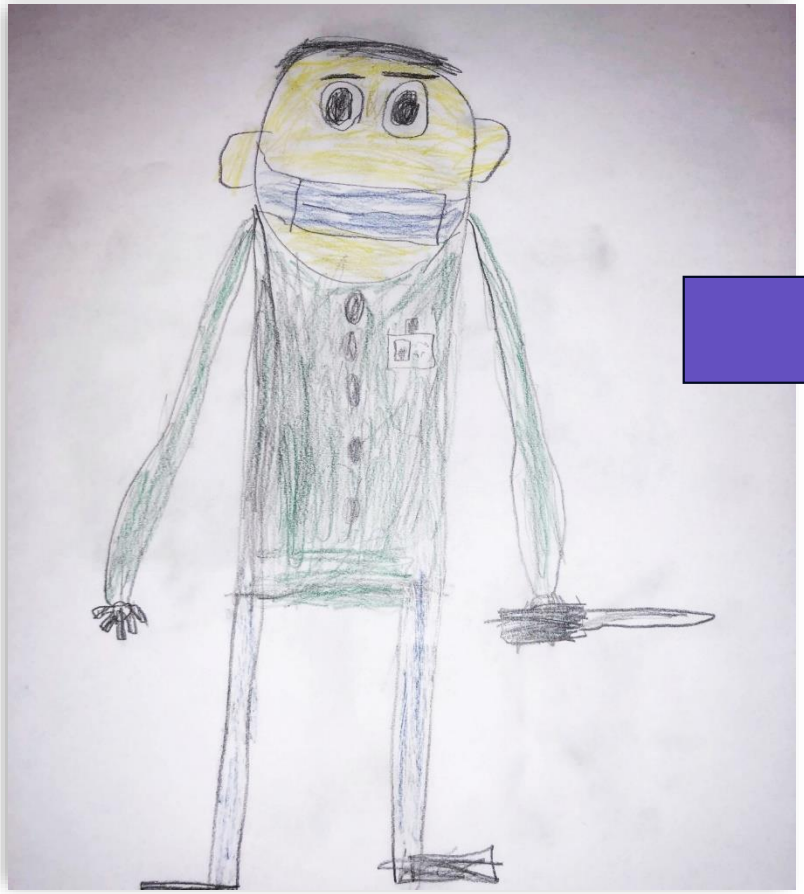
# How to exceed in surgery?



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# Thank you

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County of Pirkanmaa