XXVIII IFSO World Congress

9-12 September 2025 | Santiago, Chile

AVAILABILITY OF ROBOTIC MBS FOR YOUNG SURGEONS

IFSO 2025 Santiago

Combined Therapies, The Dawn of a New Era

Elena Ruiz-Úcar M.D. FACS,FIFSO,FEAES,FESPEN

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Disclosure Slide

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NOTHING TO DISCLOSE

Elena Ruiz-Úcar M.D. FACS,FIFSO,FEAES,FESPEN
- Consultant Surgeon in the Bariatric-Metabolic and Endocrine Unit
General and Digestive Surgery Department. Fuenlabrada University Hospital, Rey Juan Carlos University. Madrid, Spain.
- Member of Scientific Committee of IFSO-EC
- Secretary of Young IFSO
- Co-Chair of the Membership & Engagement Committee of TROGSS(The Robotic Global Surgical Society)
- Section Editor of Journal Of Robotic Surgery (JORS)

Robotic MBS is increasingly available for young surgeons, though access depends on institutional investment and training programs

While challenges exist, including cost and the learning curve, robotic adoption **is growing in bariatric surgery, driven by benefits like improved ergonomics and potentially faster patient recovery.**

What Factors Are Influencing Availability for Young Surgeons?

Training Programs:

Structured programs are being developed and implemented to provide residents with fundamental robotic skills during their training.

Institutional Adoption:

The availability of robotic systems and the integration of robotic surgery into routine practice in a hospital setting are key.

Specialty Focus:

The increasing use of robotics in general and bariatric surgery is expanding the field for new surgeons.

Cost and Economics:

The high cost of robotic systems can be a barrier to widespread adoption, but competition among manufacturers is expected to improve economic viability over time.

What are our Young surgeons seeking for, what do they think?

Journal of Robotic Surgery (2022) 16:1073–1082
https://doi.org/10.1007/s11701-021-01344-y

ORIGINAL ARTICLE

Check for updates

Surgical trainee experience and opinion of robotic surgery in surgical training and vision for the future: a snapshot study of pan-specialty surgical trainees

Christina A. Fleming[1,2] · Oroog Ali[1,3] · Joshua M. Clements[1,4] · Johnathan Hirniak[1,5] · Martin King[1,6] · Helen M. Mohan[1,7] · Deirdre M. Nally[1,2] · Josh Burke[1,8] on behalf of The Association of Surgeons in Training (ASIT)

United Kingdom and Republic of Ireland

to elucidate **current surgical trainee experience** to robotic surgery across the UK and ROI

73.8% of trainees would value greater access to robotic surgery training.
73.4% believed that robotic surgery was important for the future of their desired specialty
77.2% believed it should be incorporated into formal surgical training.

Perceived disadvantages of robotic surgery experience in surgical training : **expense and the current impact of consultant robotic learning curves on training.**

Journal of Robotic Surgery (2023) 17:117–123
https://doi.org/10.1007/s11701-022-01399-5

ORIGINAL ARTICLE

Check for updates

The Atlantic divide: contrasting surgical robotics training in the USA, UK and Ireland

Tamara M. H. Gall[1,3] · Gautam Malhotra[2] · Jessie A. Elliott[3] · John B. Conneely[3] · Yuman Fong[2] · Long R. Jiao[1,4]

Received: 4 January 2022 / Accepted: 11 March 2022 / Published online: 2 April 2022

there is currently a **much higher use of robotic surgery in the United States of America (USA)** compared to the United Kingdom (UK) and Ireland.

identify whether any difference exists in exposure to robotic surgery during general surgical training between trainees in the USA, UK and Ireland.

116 responses.
- US trainees ($n = 34$) all had robotic simulator experience, only 37.93% of UK ($n = 58$) and 75% of Irish ($n = 24$) trainees ($p < 0.00001$).
- 91.18% of US trainees had performed 15 or more cases as the console surgeon, only 3.44% of UK and 16.67% of Irish trainees ($p < 0.00001$).
- Fifty **UK** trainees **(86.21%)** and 22 **Irish trainees (91.67%)** compared to 12 US trainees (35.29%) **do not think they have had adequate robotics training** ($p < 0.00001$).

- **Surgical trainees in the USA have had significantly more exposure to training in robotic surgery than their UK and Irish counterparts.**

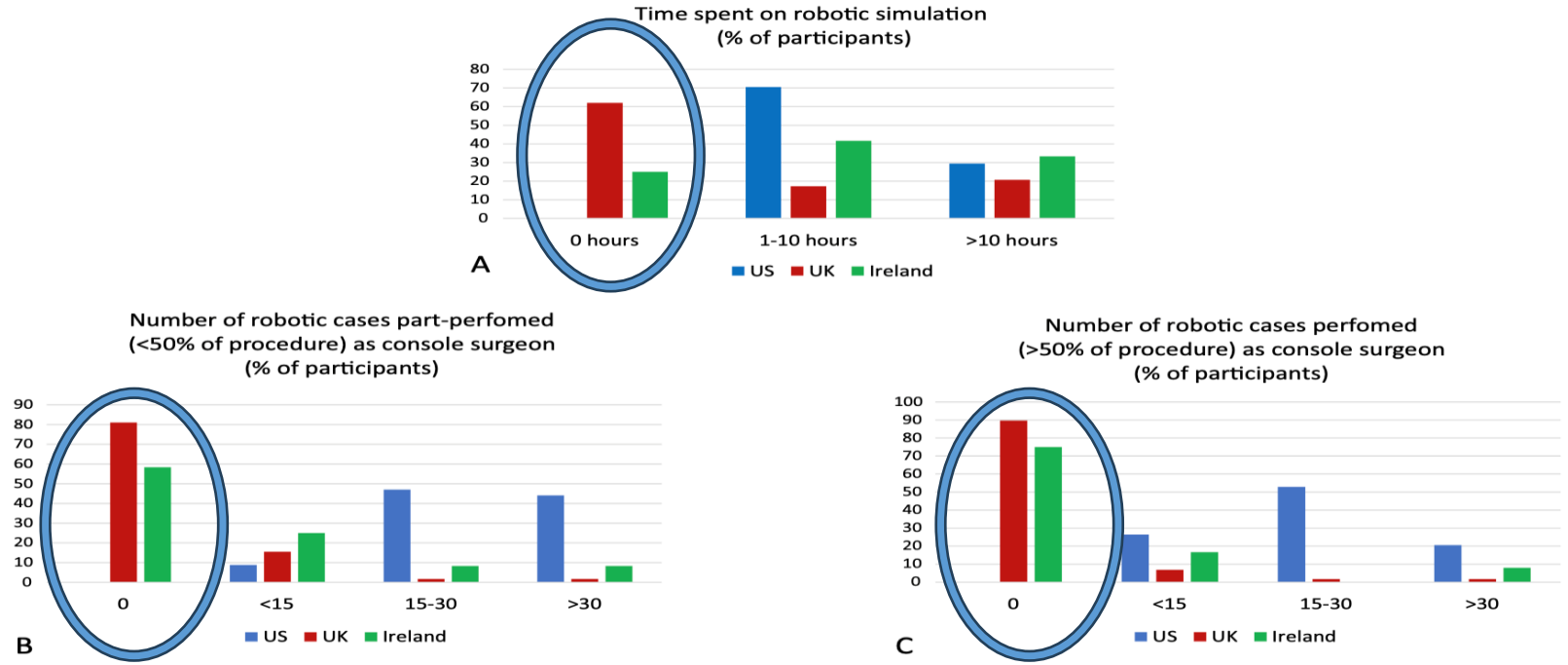

Fig. 1 Robotic training and experience of surgical trainees from the USA and from the UK

Journal of Robotic Surgery (2025) 19:501
https://doi.org/10.1007/s11701-025-02582-0

RESEARCH

Procedural robotic surgery training: a UK pan-specialty trainee Delphi consensus study

Matthew Harris[1,2,4] · Aidan Bannon[1,2] · Justin W. Collins[3]

Received: 3 April 2025 / Accepted: 12 July 2025

Table 2 Specialty groups represented in the consensus exercise

Specialty	Number (n = 85)	%
Colorectal	15	17.6%
Upper GI	11	12.9%
HPB	8	9.4%
Transplant	7	8.2%
Vascular	3	3.5%
Orthopaedics	7	8.2%
Paediatric surgery	3	3.5%
Plastic surgery	8	9.4%
Cardiothoracic	4	4.7%
Emergency general surgery	1	1.2%
Urology	10	11.8%
Neurosurgery	1	1.2%
ENT	3	3.5%
Maxillofacial	4	4.7%

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study to determine a consensus amongst **UK surgical trainees on the opinion of essential components of procedural robotic training.**
A Delphi consensus study : **85 surgical trainees representing the spectrum of surgical specialism and training grades.**

consensus defined as ≥ 80% agreement or disagreement.

Trainees strongly supported the integration of robotic training into surgical curricula, emphasising the importance of metrics-based assessment and credentialling in device, basic and procedural training.

Key recommendations revalidation every 5 years and centralised registries for robotic cases.

Therefore , **there is a robust consensus amongst UK surgical trainees**

Learning the Robotic Approach

Phased Introduction:

simpler robotic procedures, such as a sleeve gastrectomy, to gain comfort and build technique before tackling more complex cases like revision surgeries or gastric bypasses.

Team-Based Learning:

A structured, interdisciplinary operating room setting, involving nurses and anesthesiologists, is crucial

Ergonomics and Workload:

advantages for surgeons: improved ergonomics ,reduced stress, which can be particularly beneficial for new surgeons.

What robotic programs do we have available?

The CARS curriculum

Competency-Based Assessment of Robotic Surgery Skills

- standardized assessment tool for evaluating robotic surgery performance.
- It is not a curriculum itself, **but a scale : the CARS scale is a critical component of training programs** : objectively measuring a surgeon's proficiency in robotic techniques.
It assesses key psychomotor skills

What the CARS Curriculum (Scale) Does

- **Objective Assessment:**
it assess a surgeon's competence in robotic procedures.

- **Skill Differentiation:**
It can reliably differentiate **between beginner, intermediate, and advanced resident** performance based on their robotic surgical skills.

- **Competency-Based Evaluation:**

Key Components of CARS Assessment

- **Standardized Scale:** specific metrics for assessing performance.
- **Video Review:** video review of surgical procedures.
- **Reliable Scoring:** Blinded video raters and in-person faculty evaluations demonstrate moderate to high reliability, ensuring consistent scoring.

How CARS is Used in Robotic Surgery Training

- **Integration into Training Programs**
- **Tracking Progress:** over time by measuring improvements in CARS scores.
- **Identifying Skill Gaps:**

Global Surgical Education - Journal of the Association for Surgical Education (2024) 3:70
https://doi.org/10.1007/s44186-024-00265-2

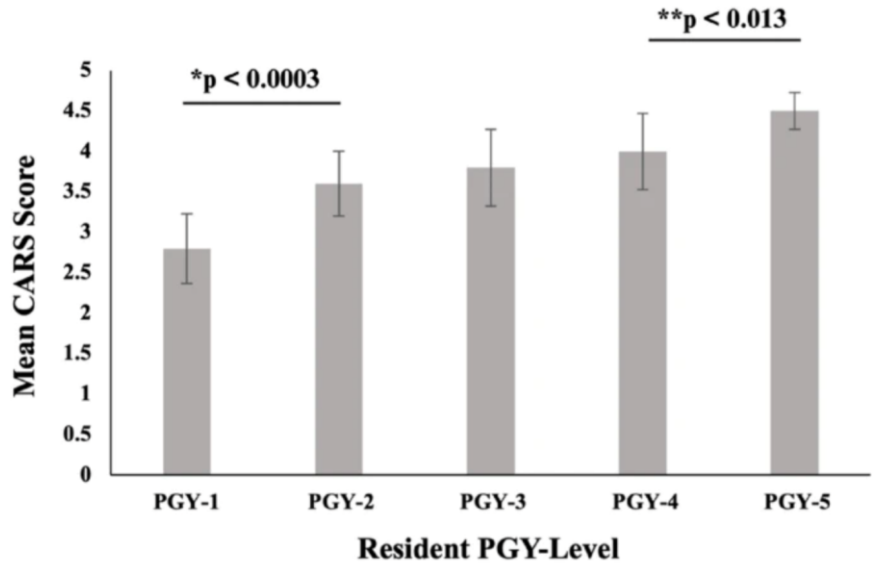
ORIGINAL ARTICLE

Development and initial experience of a novel *Competency-Based Assessment of Robotic Surgery Skills* (CARS) scale for general surgery residents

Steven M. Elzein[1] · Maria Paula Corzo[1,2] · Daniel Tomey[1,3] · Roberto Secchi del Rio[4] · Nana-yaw O. Bonsu[1] · Benjamin Benavides[1] · Laurie Minze[1] · Pierre Blanc[5] · Adel Abou-Mrad[6] · Rodolfo J. Oviedo[7,8,9]

Received: 29 October 2023 / Revised: 19 March 2024 / Accepted: 25 May 2024 / Published online: 18 June 2024

Fig. 1



Mean CARS scores by PGY level, in person evaluation

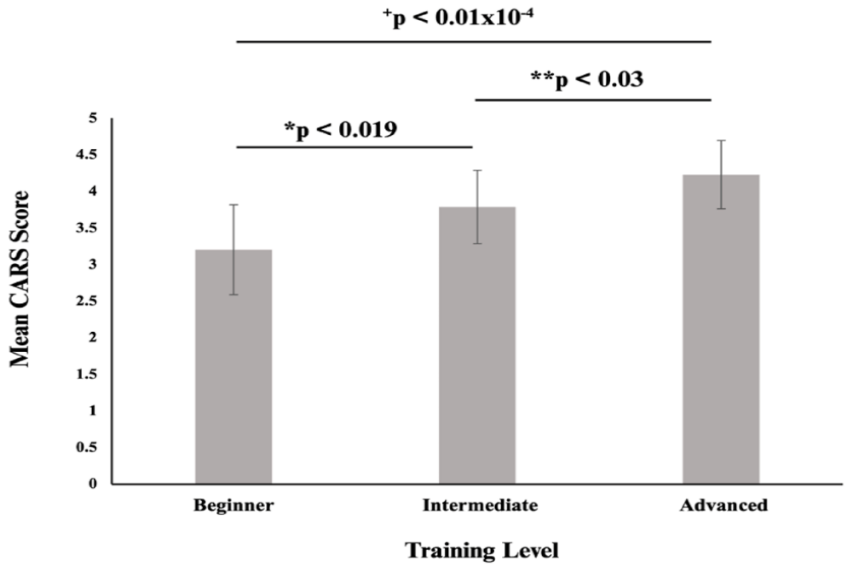


Fig. 2 Mean CARS scores by Resident Training Level, in person evaluation

Journal of Robotic Surgery (2023) 17:495–507
https://doi.org/10.1007/s11701-022-01444-3

ORIGINAL ARTICLE

The RoCS program

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RoCS: Robotic Curriculum for young Surgeons

Jessica Stockheim[1] · Aristotelis Perrakis[1] · Bernhard A. Sabel[2] · Robert Waschipky[3] · Roland S. Croner[1]

Received: 10 March 2022 / Accepted: 26 June 2022 / Published online: 9 July 2022

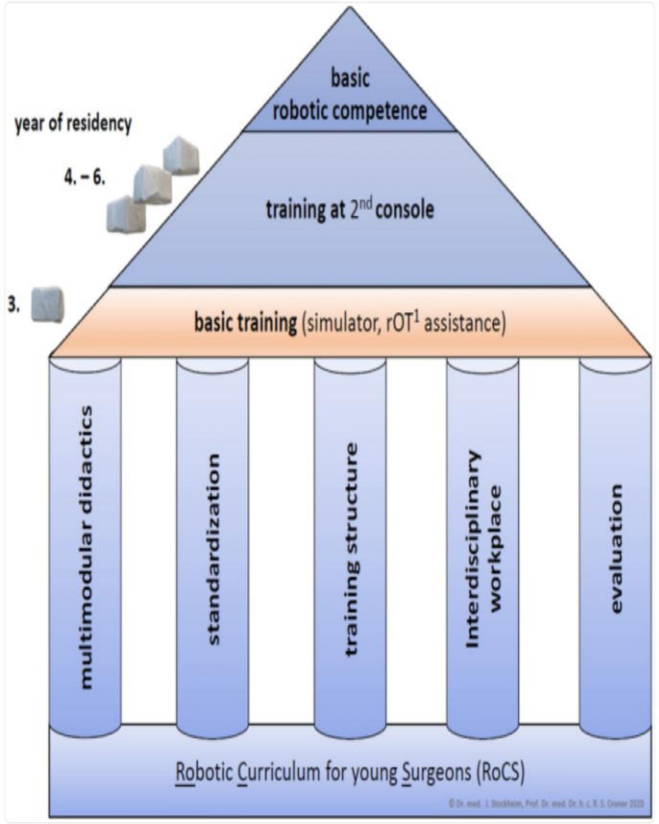
"robotic curriculum for young surgeons" (RoCS). It was implemented in the daily routine of a German university hospital starting in 2020.

RoCS is a multimodal training program :
- basic training through assistance at the operation table during robotic assisted operations
- basic console training.

Key elements : the robotic team time-out (rTTO), perioperative process standardization , procedural steps and procedural step complexity.

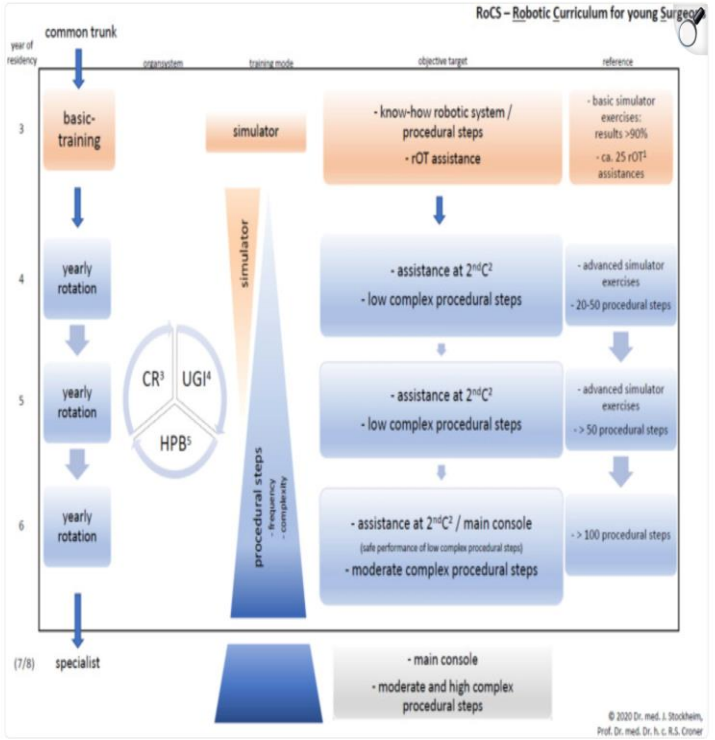
RoCS is a strong training tool to meet the specifc needs of young surgeons and evaluate their learning success of robotic procedural training.
Furthermore, comparison within the diferent robotic systems should be considered.

Fig. 1.



Curricular structure of the "Robotic Curriculum for young Surgeons" (RoCS) [1]*rOT* robotic operating table

Fig. 2.



RoCS concept timeline (year of residency, organ system, training mode, objective target, reference [1]*rOT* robotic operation table; [2]$2^{nd}C$ second console; [3]*CR* colorectal tract; [4]*UGI* upper gastrointestinal tract; [5]*HPB* hepatopancreaticobiliary tract

Journal of Robotic Surgery (2024) 18:307
https://doi.org/10.1007/s11701-024-02056-9

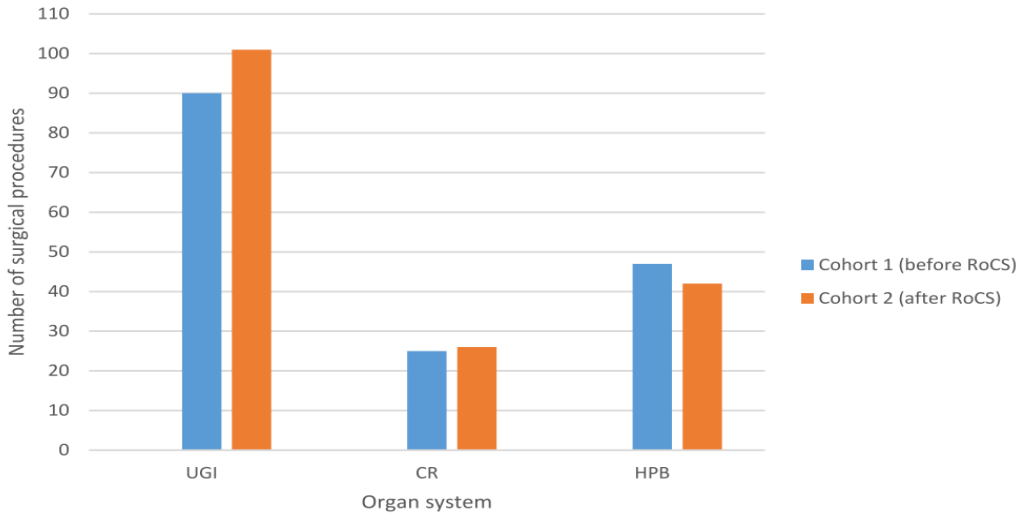
RESEARCH

The training pathway for residents: 'Robotic Curriculum for young Surgeons' (RoCS) does not impair patient outcome during implementation into clinical routine

Jessica Stockheim[1] · S. Andriof[2] · M. Andric[1] · S. Al-Madhi[1] · S. Acciuffi[1] · M. Franz[1] · E. Lorenz[1] · S. Peglow[1] · F. Benedix[1] · A. Perrakis[1] · R. S. Croner[1]

Received: 28 June 2024 / Accepted: 18 July 2024 / Published online: 6 August 2024

Does it entail any difference in patients outcomes?



This study evaluated the impact of RoCS' integration into clinical routine on patient outcomes.
Two cohorts were compared regarding the implementation of RoCS:

- Cohort 1 (before RoCS) included all robot-assisted procedures between 2017 and 2020 (n=174 adults) retrospectively;
- Cohort 2 (after RoCS) included all adults (n=177) who underwent robotic procedures between 2020 and 2021 prospectively.

RoCS can be safely integrated into clinical practice without compromising patient safety or oncologic quality.

ASMBS Surgical Technique and Advanced Robotics Training (START) Program

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Applicant Eligibility Requirements: **For fellows inside USA fellowships programs**

faculty-led **virtual didactic sessions, local mentoring by an experienced bariatric robotics surgeon, and hands-on mentored experiences** at a robotics training facility.

The program will train bariatric-focused fellows who are currently in a Fellowship Council-approved fellowship program

This training opportunity is open to a **maximum of 45 fellows** for the 2025-2026 academic year.

Learning Objectives: A range of robotic topics will be covered with emphasis placed on bariatric procedures, current and future robotics technology, application of robotic surgery in a wide range of general surgery procedures, and safe and practical application of robotics in general surgery cases.

Updates in Surgery (2023) 75:825–835
https://doi.org/10.1007/s13304-023-01485-9

ORIGINAL ARTICLE

Check for updates

Robotic-assisted surgery training (RAST) program: module 1 of a three-module program. Assessment of patient cart docking skills and educational environment

Maria Teresa Castaldi[1,2] · Mathias Palmer[2] · Daniel Moritz Felsenreich[2] · Jorge Con[1,2] · Roberto Bergamaschi[1,2]

The RAST program

RAST involves three modules: ergonomics, psychomotor, and procedural.

module 1: assess the responsiveness of postgraduate year: 1–5 general surgery residents (GSRs) to simulated patient cart docking, and to evaluate the residents' perception of the educational environment.

Patient cart training impacted the **responsiveness of GSRs with 54% docking time reduction** and **no differences in hands-on testing scores** among PGYs with a highly positive perception.

Journal of Robotic Surgery (2024) 18:322
https://doi.org/10.1007/s11701-024-02077-4

RESEARCH

RoboticSurgery4all: are discovery courses important for robotic surgery skills acquisition?

Mário Rui Gonçalves[1] · Björn Mück[2] · Jean-Pierre Faure[3] · Philippe Topart[4] · Miguel Castelo-Branco Sousa[1]

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for introduction to robotic surgery pre-congress courses.

A new methodology using a sleeve/bypass, a ventral TAPP and an inguinal TAPP **silicone models was implemented**.

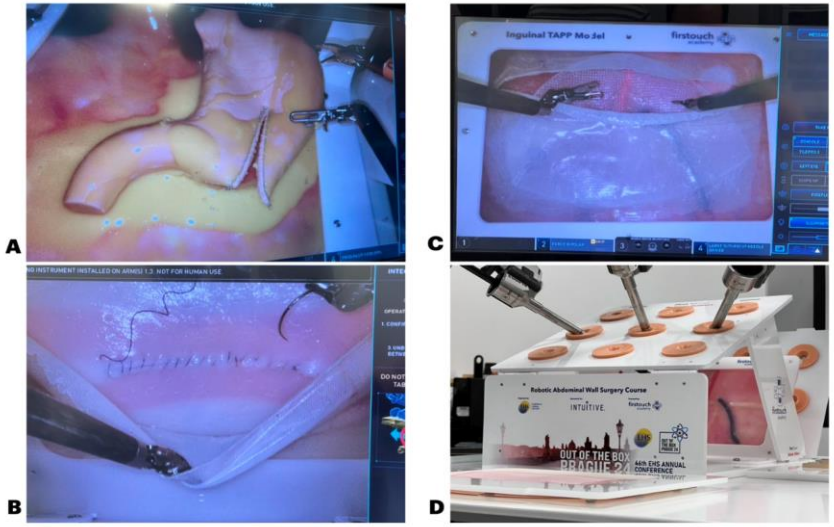
trainees answered a questionnaire to evaluate the course and the methodology. A total of 21 participants participated in the courses and **(72.2%) had no experience in robotic surgery.**

All trainees rated the course as good or excellent. There was a strong agreement between participants regarding the **adequacy of the silicone models for this type of simulation/course**

more confidence to perform a real robotic procedure

72% considered the anatomical models better than VR for robotic skills acquisition

low-cost way and easy to produce, use and discharge.: much cheaper that using a cadaver for simulation training



A Sleeve/Bypass model (@IFSO2024); **B** View of the ventral TAPP model (@ EHS2024); **C** View of the inguinal TAPP model (@ EHS2024); **D** View of the First Trainer, Robotic Edition (@ EHS2024)

Journal of Robotic Surgery (2025) 19:312
https://doi.org/10.1007/s11701-025-02493-0

RESEARCH

A mixed-method survey study evaluating two robotic surgical training courses in Germany

Sjaak Pouwels[1,2] · Beniamino Pascotto[3] · Rodolfo J. Oviedo[4,5,6] · Marco Raffaelli[7,8] · Antonio Albuquerque[9] · Adel Abou-Mrad[10] · Juan Santi Azagra[3] · Ricardo Zorron[11] · Jordi Tarascó[12] · Enrique F. Elli[13] · Mario Rui Gonçalves[14,15] · Miljana Vladimirov[1]

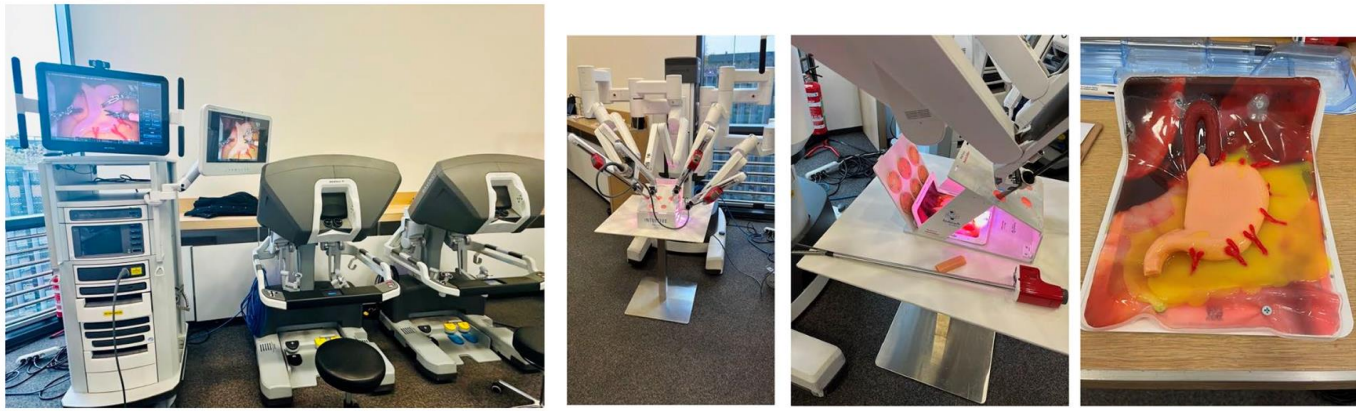
2024: - one as part of the Frankfurter Meeting in Frankfurt

- the other one named 'DGAV OP Workshop Robotische Chirurgie': November 2024, in Detmold

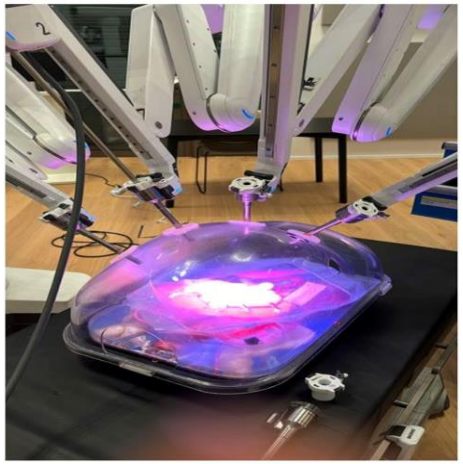
this study evaluates both courses using a mix-method approach and define aspects to improve both courses.

anonymous survey

A: Setup in Frankfurt am Main



B: Setup in Detmold



A view of the course set-up and models* used in the courses in respectively Frankfurt am Main (**A**) and Detmold (**B**) in Germany. *Sili- cone models used originally developed by Goncalves et al.

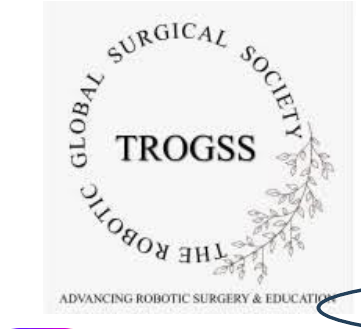
64.7% of the respondents preferred a **combination of formal lectures with hands-on lab experience.**

For the hands-on experience 32.4% preferred either a wet lab with organic animal organ ex-plants or with human cadavers.

In terms of training course frequency, **76.5% preferred that robotic surgical course** be organised at multiple events throughout the year **independent of a conference**

73.5% of the respondents thinks that these types of courses should **include a hands-on exam that will lead to a robotic surgical certification.**

Respectively 91.2% and 94.1% of the respondents think that mentorship facilitates a better learning experience and that **these robotic surgical courses should contribute to developing a robotic surgery teaching curriculum.**



TROGSS – The Robotic Global Surgical Society
https://trogss.org · Traducir esta página

TROGSS – The Robotic Global Surgical Society

TROGSS (The Robotic Global Surgical Society) is a premier international organization dedicated to advancing the practice and education of robotic surgery.

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- **The Robotic Time Zone** — The Robotic Time Zone is your dynamic gateway into the ... >
- **Intercontinental Training** — This TROGSS Intercontinental Training Program (ITP) is ... >
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Available Programs

- **Nacogdoches Medical Center, Nacogdoches, TX, United States of America**

Prof. Rodolfo J. Oviedo, MD, FACS, FRCS, FICS, FASMBS, DABS-FPDMBS

- **November 20th National Medical Center, ISSSTE. Mexico City, Mexico**

Prof. Omar F. Gaytan, MD

- **Centre Hospitalier Universitaire d'Orléans (CHU), Orléans University Hospital, France**

Dr. Adel ABOU-MRAD, FACS, FICS

- **Centre Hospitalier de Luxembourg, Luxembourg City, Luxembourg.**

Dr. Beniamino Pascotto MD, FEBS-MIS

- University Bielefeld-Campus Lippe, Detmold, Germany

Dr. Miljana Vladimirov, MD, MHBA.

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-Chibune General Hospital, Osaka City, Osaka, Japan

Prof. Seiichi Kitahama, MD

- Maria Inmaculada Hospital, Florencia-Caquetá, Colombia

Prof. Adolfo Perez Bonet, MD

- InterHospital, Guayaquil, Ecuador

Dr. Omar Rivera, MD.

International Journal of Surgery 13 (2015) 115–123

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journal homepage: www.journal-surgery.net

Review

An over-view of robot assisted surgery curricula and the status of their validation

Rebecca A. Fisher, Prokar Dasgupta, Alex Mottrie [1], Alessandro Volpe [2], Mohammed S. Khan, Ben Challacombe, Kamran Ahmed*

MRC Centre for Transplantation, King's College London, King's Health Partners, Department of Urology, Guy's Hospital, St Thomas Street, London SE1 9RT, UK

The main curricula are the FRS, the FSRS, the Canadian BSTC initiative. They are in various stages of validation and offer a mixture of theoretical and practical training, using both physical and simulated models

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FRS: Fundamentals of Robotic Surgery:

- Florida Hospital Nicholson Center group:I t was officially launched online on March 1st 2014 and is currently undergoing validation
- Orlando group: based at the Colon and Rectal Clinic of Orlando

FSRS: Fundamental Skills of Robotic Surgery: a simulation-based course developed by an international team based at the Roswell Cancer Institute, Buffalo, NY

BSTC: basic skills training curriculum, university of Toronto: Canada, the adoption of robotic surgery into clinical practice has been less widespread than in the United States: generic skills and is not tailored to any specific specialty

Proficiency-based robotic curriculum: A group at University of Texas Southwestern Medical Center

An overview of the main robotic curricula in development

Name	Fundamentals of Robotic Surgery (FRS)	Fundamental skills of Robotic Surgery (FSRS)	ERUS robotic surgery training curriculum	Proficiency-based robotic curriculum	Fundamentals of robotic surgery: Orlando group
Specialty	Multi-specialty. Advanced curricula in several specialties planned	2007 Multi-specialty	Urology, currently focused on Robot-Assisted Radical Prostatectomy	Multi-specialty	Multi-specialty

The Future of Robotic Metabolic Surgery

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1. Growing Momentum:

Despite challenges, robotic surgery is becoming a permanent fixture in the surgical landscape, including in bariatric procedures.

2. Innovation and Advancement:

There are many programs and organizations dedicated to advancing the field by fostering collaboration between experienced robotic surgeons and promising young surgeons.

But the majority are in North America and Europe. There are huge differences between USA a the rest of the world. **The requirement of boosting and spreading robotic educational programs worldwide is key**

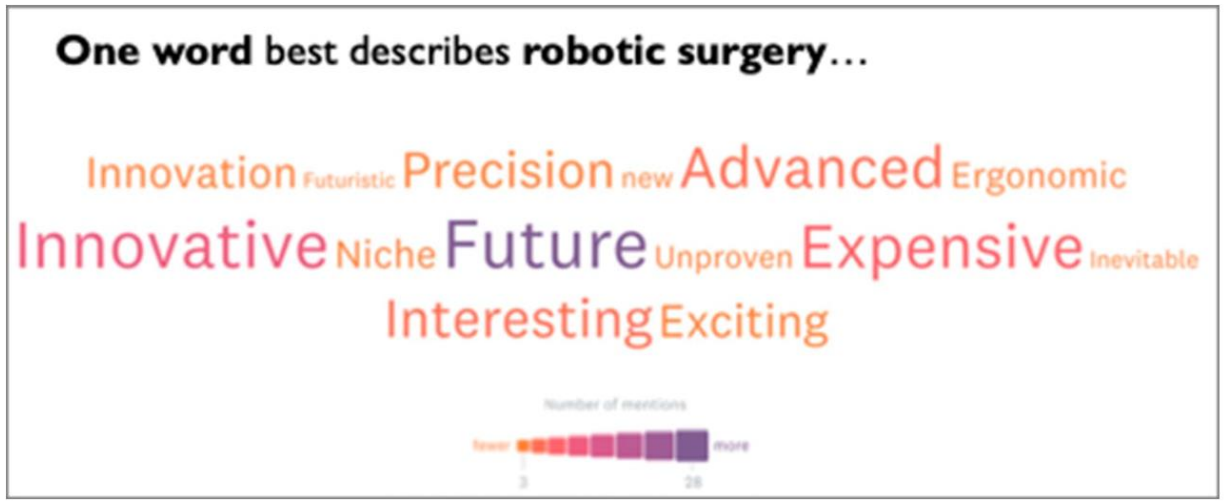
3. Patient Safety:

The primary aim is to ensure patient safety through high-performance, standardized procedures within a supportive and interdisciplinary environment assessed by robotic educational tools.

4. Challenges specific for robotic surgical training :

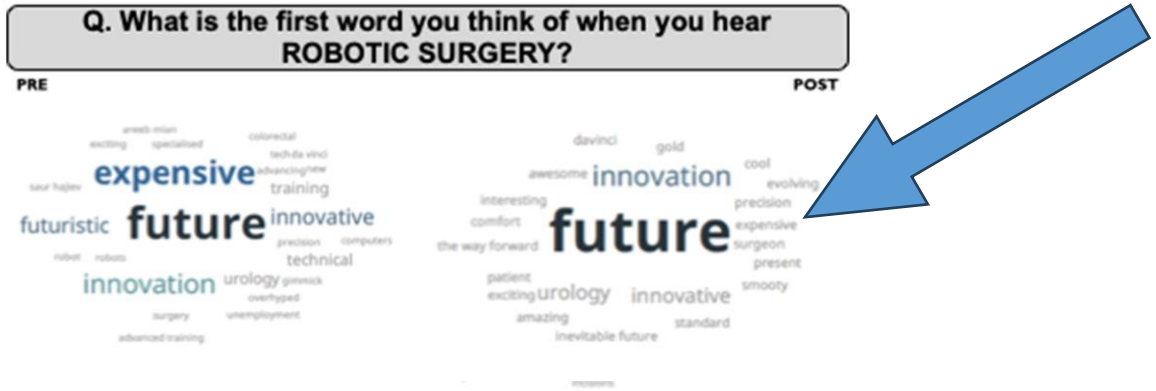
- the availability of the systems, logistic and transport costs
- general costs of the training courses.
- the number of training opportunities, when we compare it with laparoscopic and open surgery

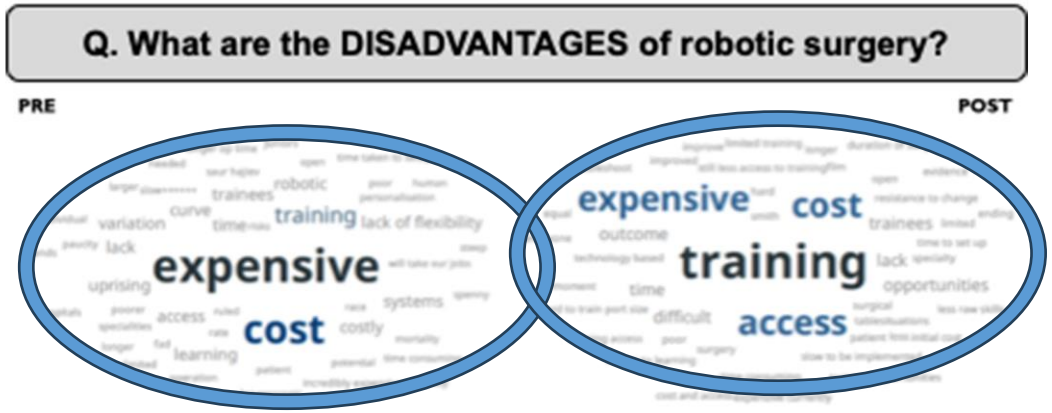
CONCLUSIONS IN A GLANCE



Trainee views on the one word that best describes robotic surgery

https://doi.org/10.1007/s11701-021-01344-y





Word cloud summaries of live-polling data pre- and post-plenary session

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