

Research Letter

European training in urology (ENTRY): quality-assured training for European urology residents

Dear Editor,

The general surgical exposure of European urology residents in the performance of invasive procedures, their confidence in the execution, and the overall satisfaction with their training is low [1]. The European Training in uROlogy (ENTRY) project is a cooperative partnership between Humanitas University, ORSI Academy and *Fundació Puigvert*, aiming to improve the training of urology residents in minimally invasive procedures. The ENTRY project is developing an educational programme that has three key steps: an eLearning component; a hands-on simulation phase; and a quality-assured methodology for training in the operating room. The final ambition of the project is to provide European urology trainers with high-quality teaching tools and compendia, laying the foundation for a standardized European training programme for residents based on a scientific training approach. The project is supported by the European Commission with an ERASMUS grant (KA220-HED Cooperation partnerships in higher education).

A well-established and evidence-based methodology, namely, proficiency-based progression (PBP) training methodology, will be implemented to ensure that training is effective [2–4]. This methodology encompasses straightforward but rigorously defined steps: (i) Detailed characterization of a procedure of interest through performance metrics. The metrics explicitly identify observable performance units before, during and after the surgical procedure; (ii) validation of the metrics; (iii) quantitative definition of a benchmark (i.e., proficiency level) based on the mean performance of experienced surgeons who are genuinely skilled at performing the procedure; (iv) deliberate practice: continuous training with metric-based feedback until trainees demonstrate the defined proficiency benchmark. During this practice, trainees receive ongoing, unambiguous, formative feedback using the objective, binary scored metrics. Previous studies have shown that PBP training reduces objectively assessed intra-operative procedure performance errors by ~60% in comparison to traditional training programmes, including not only the Halstedian model but also newer approaches, such as simulation-based training, mastery learning and proficiency-based learning [5]. Even more importantly, PBP requires trainees to meet quantitatively defined performance benchmarks before advancing in their training, with the goal of achieving proficiency before starting their practice in the operating room, on real patients [4]. The eLearning and the hands-on simulation components provide a safe and controlled

environment, outside of the operating room, in which residents can acquire surgical skills, accelerating their learning curve without compromising patient safety.

To outline the programme, four co-design sessions have been planned. The first two have already taken place. These meetings included urologists, urology residents and training experts and aimed to integrate the different perspectives and needs of each stakeholder. Afterwards, a workshop with higher education providers from European Union countries and representatives of national and international urological organizations will take place in the near future, with the aim being to validate the final ENTRY programme outline.

The first aim of the programme has already been identified (Table 1). This will be to establish a structured training curriculum for a common procedure, i.e., transurethral resection of the bladder (TURB). This will provide a high-quality approach for real-practice teaching in the operating room, according to the PBP methodology. The Delphi meeting for assessing the content validity of TURB metrics will take place in Barcelona in October 2022. Subsequently, the process to establish construct validity (i.e., the metrics distinguish between the objectively assessed performance of experienced and novice urologists when performing the procedure) will include several European centres. These centres will also be involved in the proficiency benchmarks that must be accomplished by trainees before training progression/completion and subsequent implementation of their skills in the clinical setting. The construct validity evidence will also establish in which phases of the procedure the performances of expert and novice surgeons differ the most. This information will inform and guide the development of the simulation model.

The metrics will then be applied for PBP training on a simulator for TURB. Finally, the eLearning module, composed of online lessons, tutorials and illustrative videos and including thorough explanation of the methodology itself and its application to both the hands-on training and the clinical practice on real patients, will be developed. The first outcome from our project will be to construct a PBP training curriculum for the TURB procedure, including eLearning, PBP-based simulation training and a process for integration of this learning in real practice in the operating room.

After a train-the-trainers course, a pilot testing of the curriculum, aiming to reach out to 20 tutors and 150 urology

Table 1 Summary of the ENTRY project phases and predicted results.

Project phases	Project results
1. Co-design sessions	Outline of the programme
2. Validation workshop	Validation of the programme
3. Results production	Structured curriculum course for TURB
	<ol style="list-style-type: none"> 1. Development of the metrics for TURB 2. Delphi meeting 3. Validation of the metrics for TURB 4. Proficiency assessment and definition 5. Development of a PBP training curriculum course <ol style="list-style-type: none"> 1. eLearning modules 2. PBP-based simulation training 3. Methodology for real practice in the operating room
	Pilot testing

PBP, proficiency-based progression; TURB, transurethral resection of the bladder.

residents, will evaluate the curriculum and assess its impact on the trainees' performance (and, eventually, their peri-operative and clinical outcomes). Once validated, we hope that the curriculum will be very appealing to all the European centres for training their residents.

Consequently, we aim to expand the offer of structured, PBP-based training curricula for a number of endourological and minimally invasive procedures. Indeed, the TURB training curriculum can represent the starting point for developing metrics and training models for several endoscopic procedures of the lower and upper urinary tract, firstly, transurethral resection of the prostate and ureteric stenting. The development of further metrics will be successive to the construct validity of the TURB metrics. For this purpose, the ENTRY project will be open to other centres and urological societies willing to develop synergies aimed at innovating surgical training of European urology residents [6,7]. Clinical evidence strongly suggests that the skill of the operating surgeon is related to clinical outcomes [8]. Since better training almost certainly means better outcomes, these projects could have a huge positive impact on patients, surgeons and healthcare systems. Moreover, it will boost the attractiveness of urology residency schools across Europe.

Disclosure of Interests

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