Volpe A.¹, Ahmed K.², Dasgupta P.², Ficarra V.³, Van Der Poel H.⁴, Mottrie A.⁵, ERUS board members

¹OLV Vattikuti Robotic Surgery Institute, Dept. of Urology, Aalst, Belgium, ²MRC Centre For Transplantation, Kings College London. Guy's Hospital, Dept. of Urology, London, United Kingdom, ³University of Udine, Dept. of Urology, Udine, Italy, ⁴Netherlands Cancer Institute, Dept. of Urology, Amsterdam, The Netherlands, ⁵OLV Vattikuti Robotic Surgery Institute, OLV Hospital, Dept. of Urology, Aalst, Belgium

INTRODUCTION & OBJECTIVES: The criteria set for surgeon’s competence before starting robotic surgery are neither structured nor evidence based. The development of structured and validated training curricula represents one of the current priorities in the robotic urologic field.

MATERIAL & METHODS: A structured training program/curriculum was developed based on a focused group expert panel discussion (ERUS 2012/13; EAU 2013) and used to train 10 fellows from major teaching institutions across Europe. The overall study duration was 12 weeks. The key components of the curriculum included e-learning, an intensive week of structured simulation laboratory training, including virtual reality simulator and dry/wet lab simulation platforms (synthetic, animal and cadavers) and modular training in robot-assisted radical prostatectomy (RARP) at each institutions under supervision of the mentors. The technical and non-technical skills of the fellows were assessed by the mentors at the end of the program using previously validated GEARS (score 1-5) and NOTTS (score 1-4) scales. Following the completion of the simulation based curriculum-training, a full RARP performed by the fellows was video-recorded and blindly assessed by two independent expert robotic surgeons using a dedicated assessment scale. The scores of the fellows were compared with those of two expert robotic surgeons. The educational impact was evaluated with a questionnaire the fellows had to complete at the end of the training.

RESULTS:
The fellows had limited previous console exposure (4 mos, IQR 0-6.5). At the end of the training, the fellows received an average score >4 (4.1-4.7) from their mentors for all the technical skills domains of the GEARS scale, with no negative scores (≤2). An average score ≥3.5 was also achieved for the 4 non-technical skills domains of the NOTTS scale, with no negative scores (≤2). Eight fellows were deemed able to perform a RARP alone by their mentors. At the assessment of the video-recorded RARP, 6 fellows received a sufficient score by the reviewers for all steps of the surgical procedure and 8 reached an average overall sufficient score. The robotic experts significantly outperformed the fellows for all surgical steps. At the final questionnaire, all fellows considered the program effective in improving their robotic skills and ability to perform the surgical steps of RARP with a mean score 4.7 on a Likert-type scale (1=strongly disagree to 5=strongly agree).

CONCLUSIONS: This 12-weeks structured training program was successful to improve the robotic skills of fellows and their ability to perform the surgical steps of RARP. Further studies are needed to define the ideal length and schedule of these programs. This pilot study represents a step towards the definition of validated curricula for RARP and other robotic procedures.