PASSION Resident project

The PASSION Resident project is a European study that aims at establishing a new training syllabus for neurosurgical residents.

see Neurosurgical training in Europe.

The main goal is to shape young neurosurgeons in their resident years through the implementation of new training modules, including simulation courses that will improve their neurosurgical skills in an innovative way. Moreover this new methodology will allow standardised measurements with an objective perspective of their progress and achievements. Besides, we will assess all participants by means of some validated professional questionnaires.

This study will take place at the Besta NeuroSim Centre, within the IRCCS Carlo Besta Neurological Institute in Milan (Italy). It foresees the use of the most sophisticated and modern neurosurgical simulators available today. These simulators provide haptic feedback and a threedimensional virtual reality. Along with these technologically advanced systems (SimLab) the resident students participating will also have to perform microsurgical tasks at the WetLab station of the Center.

The PASSION Resident study project has been approved by our local Ethical Board (IRB). The study will start in March 2018

WHO CAN PARTICIPATE?

All neurosurgery residents currently enrolled in any Center or Institute in Europe (currently enrolled in a residency program across Europe - PGY1, PGY2, PGY3, PGY4). All residents must have no neurosurgical simulation training or experience.

All participants must have completed these pre-requisites: three (3) EVD placement procedures and three (3) microscope-assisted dural sutures (at the end of an intra-cerebral lesion removal surgery)

HOW TO PARTICIPATE?

All applicants must send these following documents in the exact way in which they are described, to these email addresses: alessandro.perin@istituto-besta.it and nicole.riker@istituto-besta.it:

A. Pre and post-operative CT scan (or MRI) in DICOM format of three EVD operations done, specifying: a) number of attempts needed to reach the lateral ventricle; b) Role that the resident had (first/second operator; level of independence) during the procedure; please note that first-time positioned EVD will be eligible for the study, no EVD substitution will be considered; You can also upload the last EVDs you have positioned consecutively during the last period of your surgical activity (collection of this data does not necessarily need to be perspective).

B. Video Recordings (through the microscope) of the last three dural sutures done at the end of an intra-cerebral lesion removal surgery specifying: a) The microscopes magnification level and the caliber of the suturing stitch; b) the role that the resident had during the procedure (first/second

operator; level of independence) and specify at what point of the registration the resident was actually operating at the microscope; c) Opening of any cisterns and/or of the cerebral ventricles; any post-operative complication referable to the dural suturing (CFS fistula, pseudomeningocele).

C. A document stating that the resident is officially enrolled in a residency program.

D. The attached form entirely and accurately filled out.

All data, namely DICOM images and microscope video recordings MUST be anonymous: they cannot and must not include any personal patient or surgeon information; the neurosurgeon's Center must not be recognisable.

All data must be uploaded to Google Drive. Please share all of the requested information at passionstudy2017@gmail.com

The information sent will be examined by a commission of expert neurosurgeons, in an anonymous manner (blinded evaluation). The first 140 resident students to submit the required information will be selected as participants for this study.

NB: this study will not focus on patients but will only evaluate the neurosurgical actions done by residents; no personal data that belongs to patients will be shared, no personal information about patients/surgeons/Institutions will be posed at risk or published.

WHAT IS THE STRUCTURE OF THE STUDY?

At the end of the selection process the participants will be randomised into two groups: half of them will take part in the Wet Lab and the simulation sessions (SimLab), while the other half will take part in the Wet Lab only (Control group). The first group will be divided into smaller groups of six participants who will be at the Centre for five consecutive days; the second group (control) will be at the Center only on the first and last day. (Look at the scheme on the following page).

Every participant will undergo specific dexterity and spatial orientation tests along with a psychometric evaluation.

At the end of the candidates' work at the Center, all residents must return to their medical activities and redo the exact pre-requisite tasks that were mandatory for the application process (3 EVD placements and 3 dural sutures) and send them back to the examining commission through the previously cited email addresses (POST-REQUISITES). This second data collection MUST be completed within 2 months after their return to their home Institutions.

FINANCIAL EXPENSES

The Best NeuroSim Center will cover all the expenses that regard the onsite study materials, namely brain tumour/dura models, mannequins, personnel and lunch tickets and accommodation for all participants. We ask participants to cover their travel expenses.

WHY SHOULD YOU PARTICIPATE?

First and foremost it would be a unique experience to work and collaborate within an international research group that for the first time ever aims at defining the potential beneficial impact that simulation might have on your learning process of both technical and non technical skills This would be achieved on a large scale by using top-notch, up-to-date simulators with haptic feedback that you will be entitled to use extensively. By participating in this innovative training you will have the chance to spend 5 days in one of the most renown and recognised neurosurgery Centres in the World, with a special focus on brain tumours and research and technology innovation. At the Besta Institute we operate on more than 3000 patients a year of whom 1000 are affected by CNS tumours; this is where the first European neurosurgical simulation Center was created. Here no matter whether part of the control group or the study groups you will be able to train some key neurosurgical tasks at the WetLab; moreover you will be using our simulators intensively (study group), or following all OR activities (control group).

Finally, as core members and contributors to this study you would all be named co-authors (in a study group publication entity) when the results of this study will be published.

ALL APPLICANTS MUST SEND THE REQUESTED ENROLMENT INFORMATION BY FEBRUARY 28th 2018

By signing this document:

I understand that in order to apply and participate in this study I must submit all of the requested materials following the anonymity requirements by the given deadline.

Furthermore I understand that in order to gain the certificate of attendance and the coauthorship status for the post-study publication, I MUST send the post-requisites asked of me within the 2 month deadline given.