TechSim – Background

TechSim is a very young center of technical simulation and was developed from scratch in February 2016 to a fully functional regional center within 12 months, with official start January 2017.

TechSim is part of a national project to implement mandatory validated courses on a national level. This will mean that a colonoscopy course or hip fracture course will be at the same high standard in Aalborg as in Odense or Copenhagen. In practice, we share our validated courses for free and help our colleagues at the regional centers with the implementation of the courses. The national teamwork is one of the main reasons why we expect to be the leading nation in technical simulation within 5 years.

Research at TechSim

TechSim is part of the need assessment project which aim is to identify clinical procedures that are needed to train in simulators before they are performed on patients. Now, the need assessments are well underway and we have made need assessments for pulmonary medicine, vascular surgery, urology, ophthalmology, and radiology. We have begun the need assessment in obstetrics & gynecology, Ear-Nose-Throat surgery, orthopedic surgery, and cardiology. Each need assessment is planned to be published in a peer review journal.

The first Ph.D. in lung ultrasound training starts in March 2017, followed by an undergraduate research year in simulation training for hysteroscopy.
Organization and Staff

Techsim is a regional simulation center and is part of the center for postgraduate education. The organizational tree is showed beneath. At the moment the organization consists of four medical students, a vacant position as an operation manager of technical simulation, Bjørn Ulrik Nielsen as head of technical simulation and professor Lars Konge as external consultant.
Courses, Training and examinations

At the moment we have six fully functional and validated courses (colonoscopy, hip fracture, vaginal ultrasound, knee arthroscopy, bronchoscopy, and emergency tracheotomy) and five courses ready to start in January (cystoscopy, gastroscopy, chest tube insertion, endobronchial ultrasound (EBUS), lumbar puncture). Laparoscopy – basic training will start in March or April so the course is close to the laparoscopy surgery in pigs.

<table>
<thead>
<tr>
<th>Advanced technical skills</th>
<th>No. participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthroscopy</td>
<td>10</td>
</tr>
<tr>
<td>Bronchoscopy</td>
<td>8</td>
</tr>
<tr>
<td>Coloscopy</td>
<td>3</td>
</tr>
<tr>
<td>Emergency tracheotomy</td>
<td>11</td>
</tr>
<tr>
<td>Hip fracture surgery</td>
<td>17</td>
</tr>
<tr>
<td>Vaginal Ultrasound</td>
<td>9</td>
</tr>
<tr>
<td>Total no. of trainees</td>
<td>58</td>
</tr>
</tbody>
</table>

Training in technical simulation on a national level

TechSim is working in close collaboration with MidtSim, NordSim and CAMES-RH to implement technical simulation on a national level. The teamwork is two folded.

1. The making of national needs assessments for 15 clinical specialties to identify procedures needed to train in technical simulation. The need assessment is performed by key-physicians in each clinical specialty and they will typically make a ranked list of 10 to 30 procedures.
2. The development of courses which validity evidence for the test, including a credible pass/fail-standard that has been published in international, peer-reviewed journals.

The main goal for the national group and especially TechSim, is to become the leading nation in technical simulation within five years.

Committee and council members

Nielsen BU.

- Member of the task group on implementing technical simulations in southern Denmark
- Member of the task group on implementing technical simulation nationally

Konge L.

- Member of the task group on implementing technical simulations in southern Denmark
- Member of the task group on implementing technical simulation nationally
- Head of Research at CAMES Rigshospitalet
- Co-chair of the AMEE Simulation Committee
Vice-chair of the Danish Association for Medical Education

Publications


Workshop, conferences and congresses

- TechSim has participated in IMSH 2016.
- One oral presentation at the Oresunds Symposium 2016.
  - Nielsen BU. Developing a state-of-the-art simulation centre for technical procedures. A team effort on three levels. From scratch to a regional technical simulation center within one year. Øresundssymposiet 2016.

Prospect 2017

The plans for 2017 are the following:

- The implementation of at least seven new courses in technical simulation
- The beginning of a p.h.d. in the education of pulmonary ultrasound.
- Hosting of the European course in pulmonary ultrasound.
- The publication of at least five articles related to technical simulation.
- Presentation of at least one poster at an international conference.
- Implementation of the technical simulation in the region of Southern Denmark.