

**O-07**

## **OR-STAFF DRIVEN PRODUCT INNOVATION; IMPROVING ERONOMICS AND LOGISTICS IN THE OPERATING THEATER**

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Surgery is a labour intensive, physically intensive and mostly non-ergonomic process. For an average (MIS) procedure at least five staff members (e.g Surgeon, assistant, scrub-nurse, circulation nurse, anaesthetist (assistant)) are present in the OR, often even more, increasing the OR-costs. Most of the medical technological innovations for the Operating Theatre/Room (OR) are investigator or surgeon driven. Hardly any of the innovations are initiated by other members of the OR-staff. Therefore we did an inventory, asking OR-staff members their opinion about demanding, non-ergonomic, non-optimal and time-consuming tasks and device-related problems they encounter. Furthermore we asked them their ideas how they would improve these devices or tasks.

Beside a long list of minor problems or problems which cannot be improved by medical technology, a few problems were mentioned often and/or might be solved by medical technological solutions:

- Instrument baskets are not complete or instruments are not functional (e.g. not sharp)
- Instrument baskets are over-complete, being time-consuming sorting them out on the instrument table and visa-versa
- Wires, tubes and lines are all over the place, are difficult to differentiate, and makes it hard to move, or to reposition trolleys.
- Depending on the procedure, additional (often heavy but vulnerable) equipment, like endoscopy trolleys, C-arm, Microscopes or Robots have to be moved in towards the OR-table and positioned accurately. This is a hard to perform, non-ergonomic and time consuming task.

This last problem was mentioned by the majority of the OR-staff members and could in our opinion be improved by introducing technology. Existing products to overcome these problems do not provide an add-on or save solution, therefore together with students, OR-staff members and designers of our department we developed concepts. By introducing force-controlled, power-assisting solutions (e-bike technology), it might be able to lower the forces needed to manipulate heavy equipment and to improve the accurate positioning of these devices.

Involving OR-staff members in technological innovations might improve OR-procedures, improve the efficiency and time, and in addition the costs of the OR.