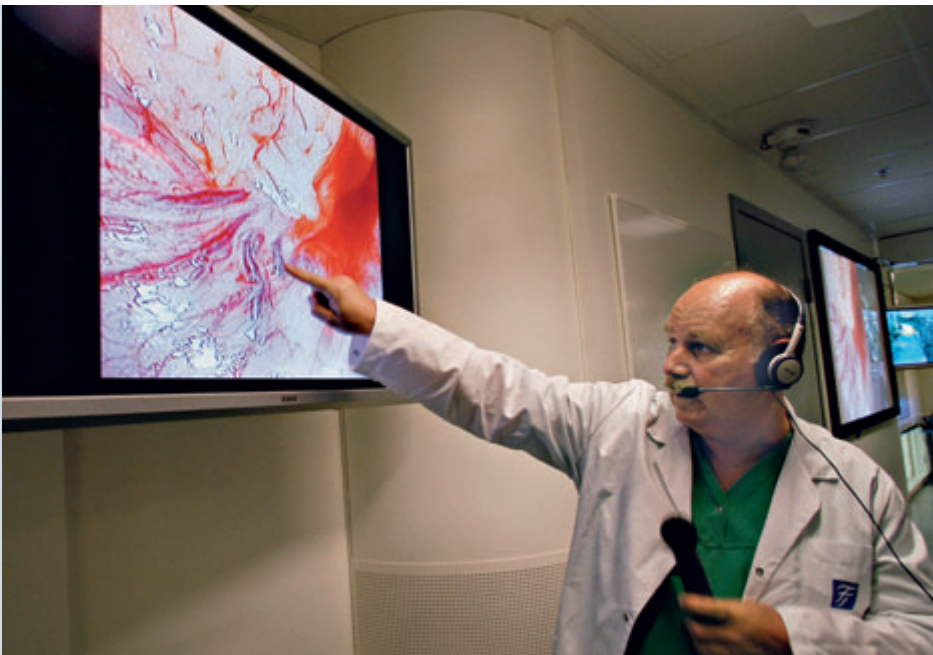


Tomorrow's Technology Applied Today

Research and development within medical technology is rapidly expanding. At St. Olavs Hospital in Trondheim, Norway, the future has already begun.



Roland Mårvik, Chief of laparoscopic surgery, explains the procedure to the students.

They call it the "Operating room of the future" at St. Olavs Hospital. This innovative OR concept, run by the department of surgery, consists of two different rooms, one specifically for endovascular treatment and another one for laparoscopic surgery. In close cooperation with the Trondheim University Hospital and the Norwegian University of Science and Technology (NTNU), in Trondheim the whole concept became reality. The two operating rooms are made for development, testing and application of new technology and new treatment modalities, especially within minimal invasive surgery. The most recent equipment is

available in these two rooms and it is now possible to test and develop prototypes in cooperation with clinicians, technologists and scientists.

Modern Teaching

A very remarkable aspect of the concept is how modern teaching possibilities are integrated into the "Operating room of the future." One floor above the two 70-square-meter operation rooms, about 20 students and specialists can follow the procedures either through windows, a HDTV screen or on their computer moni-

tors. Every workplace is equipped with a headset enabling two-way communication with the surgeons at the table. "Patient health is a key concern for us which is why we chose the most innovative technology to rebuild St. Olavs. The AV/IT solution not only meets our need for the best teaching practice, with students able to see the most sophisticated techniques without compromising hygiene, but we now also have the ability to store the OR images digitally and share them with other medical staff, using the DICOM visible light PACS archives for digital patient records," said Dr Ronald Mårvik, Chief of Department, National Centre for Advanced Laparoscopic Surgery.

Sophisticated technology

The lecture room features a HDTV screen to provide the best image quality for the observers. Thus, there is an excellent opportunity to follow all details regarding the procedure on the PC screen, or on a wide-screen with high definition quality. The clinical images from the displays in the operation room are transferred in the same quality to the monitors in the lecture room. The high definition video images are connected through several dedicated networks to distribute them to wherever they are needed. Videoconferences from the operating rooms to any centre in the world are also possible. This has been already done on several occasions for regional and international conferences and congresses. St. Olavs Hospital pioneered a project during the annual EuroPACS in June 2006.



A look inside the lecture room: students can observe the operations at their desk. The headsets are used for direct communication with the surgeon.

A live transmission from the OR room to a local cinema in Trondheim was established. This was the first time that high definition (HD) surgical images were shown on a 15x5 m cinema canvas screen.

Strong partners

Projects like this can only be realized because of the cooperation network the

hospital has built. The close cooperation between the University Hospital of Trondheim and Norwegian University of Science and Technology (NTNU), St. Olavs Hospital, the SINTEF research foundation and industry partners have made the "OR of the future" a reality. Industry vendors like Siemens, Sony®, Olympus® and Tyco Healthcare® can ensure ongoing development and constant upgrading of the systems that are already in use. For the hos-

pital, this means that they will have the most modern equipment available to test and apply new technology and new treatment modalities in order to avoid unnecessary invasive surgery for their patients.

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