Institute for Hospital, Biomedical and Hygiene Engineering

Hybrid Operating Room with Angiography System – Planning Guide

In recent years several novel treatment approaches emerged because of the combination of interventional and open surgical procedures (Hybrid Surgery). The major focus area of this development is cardiovascular surgery.

Meanwhile several other clinical specialties like Neurosurgery, Orthopaedic and Trauma Surgery, General Surgery Thoracic Surgery and Craniomaxillofacial Surgery aim for the same direction Intraoperative imaging especially 3D imaging with i.e. rotational Angiography or “Cone Beam CT” respectively plays a crucial role in this process, because it enables the deployment and quality assurance of such complex procedures.

This lead to the construction of few highly specialised Operating Rooms equipped with MRI and CT scanners.

Intraoperative Angiography however has emerged as a quasi standard. Therefore the term Hybrid OR today is almost synonymously used for an operating room equipped with an angiography system. Thus this Planning Guide focuses on such rooms.

The national and international medical societies demand a specific equipment standard especially with respect to the imaging equipment of such rooms for certain interventions and clinical procedures. Moreover clinical requirements of such rooms vary depending on the clinical application to performed. This is especially important regarding the medical devices and equipment in the room. Additionally the Design, Planning and implementation has to consider several interdependencies with regards to clinical workflow, Hygiene and Building Services.

Only comprehensive Workflow-Know-How as well as thorough early starting design and planning involving all stakeholders can guarantee a successful implementation of a Hybrid OR. Thus the objective of this Planning Guide is to cover the topic Hybrid OR with an interdisciplinary approach and perspective. This is also reflected by the content: