Getinge Hybrid operating rooms
Driving the future of interdisciplinary surgery

This document is intended to provide information to an international audience outside of the US.
The future of surgery
– Pioneering the Hybrid OR

Passion for life is Getinge’s promise. It is this promise that has helped us grow into one of the most trusted, leading medtech companies in the world.

For more than a century, we have been contributing key innovations to the medical technology sector. One of these innovations is the Hybrid OR, which Getinge has been a pioneer in for almost 20 years. Our experience covers everything from basic Hybrid operating rooms to multimodality Hybrid suites.

Hybrid operating rooms transcend medical boundaries by combining a state-of-the-art OR with one or multiple powerful imaging systems, such as an angiography system, a computed tomography scanner (CT) or a magnetic resonance imaging scanner (MRI). Hybrid ORs can be used for a multitude of interdisciplinary interventions as well as conventional procedures, making them highly cost-efficient and versatile. At the same time, they improve patient outcomes by reducing the need to transport the patient between multiple departments and teams.

As well as supplying high-end equipment, we collaborate with leading imaging partners Siemens Healthineers, Canon Medical Systems, Philips and GE Healthcare. This allows us to create the best-possible working environment for your doctors, surgeons and nurses to diagnose and treat at the same time.
Once limited to cardiovascular procedures in the cath lab, image-guided surgery has expanded to comprise nearly all surgical disciplines, including cardiovascular, neurosurgery, oncology, orthopedic urology, and traumatology procedures – all of which benefit from intraoperative imaging.

Real-time diagnostic imaging means that interventions can be carried out in a single session, optimizing the use of your technical and human resources. Interdisciplinary teamwork is at the heart of the Hybrid OR concept, which benefits high-risk patients in particular: intraoperative imaging enables radiologists and surgeons to work closely together, coordinate procedures, and minimize risks to the patient.
Most hospitals already own the basic prerequisite for a Hybrid OR: a mobile C-arm or mobile CT. Adding an operating table system with radiolucent accessories immediately opens up additional, state-of-the-art therapy options. For even more advanced, high-end solutions, our consultants can develop a Hybrid suite tailored to your needs. This all-inclusive multimodality space offers up to three intraoperative imaging systems – angiography, CT and/or MRI. With such a future-oriented approach to modern medicine with the highest quality standards, your hospital will retain a reputation for excellent patient treatment.

Our Hybrid ORs are based on a modular solution concept, giving you the utmost flexibility – today and tomorrow.

Future innovations and new technology can be integrated with minimal changes, and you can change or replace individual components effortlessly. So, while the initial installation costs may be higher than with a traditional OR, a Hybrid OR actually provides you with a future-proof, long-term solution that will protect your hospital’s valuable investment.

Getinge’s Hybrid suites combine cutting-edge imaging technology with equipment and software of the highest standards to optimize workflows, drive efficiency, and increase patient outcomes. And our service does not end there: using our in-depth knowledge and planning expertise, we support you in every aspect of the construction or remodeling of your Hybrid OR.
Advantages of the Hybrid OR

Example: Workflow for a trauma patient

When a trauma patient is admitted to hospital, time plays a vital role. The patient’s hemodynamic stability determines whether they are transferred directly to the OR or sent to the emergency room for evaluation.

Trauma patients admitted to a hospital with a Hybrid suite can receive life-saving treatment faster and expect a better outcome. They can be treated in a timely manner, as the images that need to be taken during surgery for fast evaluation and action do not require the patient to leave the room. The communication paths between the radiologists, anesthetists, and surgeons are as short as it is humanly possible, allowing for effective cross-functional collaboration.

Compared to a "standard" general hospital, where practically every stage of diagnosis and treatment requires a transfer within the hospital, Hybrid ORs therefore offer multiple benefits for trauma patients. As they remain in a sterile environment for the duration of their diagnosis.
The workflows for both routine and trauma patients admitted to a “standard” general hospital as opposed to a hospital with a multimodality Hybrid suite.

- fewer transfers
- less infection risk
- less anesthesia

Benefits beyond patient outcome

Hybrid ORs can do more than reduce risks for patients and improve their treatment: they can increase the cost-effectiveness of your hospital. Our experts assess your needs and workflows in the OR and use sophisticated planning technology to optimize the use of space and equipment. Hybrid ORs can be used for different surgical procedures and interventions, reducing OR downtime and increasing the use of expensive equipment such as imaging technology.
One of the most challenging aspects of implementing a Hybrid OR solution is creating an overall functioning concept that coordinates and integrates a large amount of complex medical equipment. When you choose Getinge equipment, you get more than just state-of-the-art technology. We are your one-stop solution provider, assisting you with every aspect of your Hybrid OR: from initial need assessment to project management, from flexible room design to delivering and installing the equipment.

We work with leading global imaging partners to give you a high-end solution that will optimize workflows and increase treatment options, all the while avoiding common pitfalls that can cost you time and money.

Our experienced consultants act as a single point of contact for all your planning, sourcing, and maintenance requirements, simplifying the most complex projects and customizing them to your needs and expectations. Our services range from converting an existing OR into a Hybrid workspace with every available form of modern diagnostic imaging, to delivering a new-build, turnkey solution using our Maquet Variop Modular Room System.

And our one-stop approach does not end there: our experts at Getinge Financial Services can provide the consultative services you need to identify funding options that are available to you. At first sight, installing a Hybrid OR is a costly venture – but with the help of our project management and financial consultants, it will be an investment that pays off!
»The new Ohno Memorial Hospital is now able to combine sophisticated medical care for the brain, heart, musculoskeletal diseases, and cancer. Convinced by the high quality of products and services, we chose Getinge to provide our hospital with the relevant state-of-the-art equipment.«

Dr. Koji Saito
Chairman of the Board at the Kojinkai Social Medical Cooperation

Visualizing the Hybrid OR

Our unique 3D software helps visualize your Hybrid OR solution before it is built. By showing the relative placement of the OR table/imaging system, ceiling supply units, and surgical lighting system to each other, we can optimize workflows, making sure that components and staff do not get in the way of each other and avoiding collisions.
Cutting-edge equipment and state-of-the-art imaging technology
Making the most of your Getinge Hybrid OR

At Getinge, we are proud to partner with all leading imaging companies, each a pioneer in their own right, to meet real-world clinical challenges in the Hybrid OR.

Combining Getinge’s Hybrid OR solutions with state-of-the-art navigation, CT, and MRI systems facilitates a broad spectrum of therapeutic options and improves the overall quality of the medical services offered by the institution. With our unique product offering for Hybrid Suites, we can design an intuitive workplace that streamlines workflows.

The choice of the imaging system and its integration in the OR are key planning aspects:

Angiography systems are used for real-time diagnostics, navigation and mapping during multidisciplinary applications. They can be either floor- or ceiling-mounted: the latter has the benefit of allowing flexible imaging of the patient without moving the OR table, while the floor-mounted systems offer a greater range of imaging applications.
CT scanners are used for full-body scans. Orthopedic surgeries and trauma surgeries use a floor-mounted CT that is either located outside the OR or can be brought to the patient using a sliding gantry. The benefits include clear images of bones and blood vessels, which can also be used to identify tumors, as well as the quick availability and high resolution of the images.

MRI systems are used to assess damage to internal organs, nerve tissue and cartilaginous structures, as well as to identify sites of inflammation. An MRI scanner is usually floor-mounted in an adjacent room, but can be used intra-operatively. One of the benefits is that it can generate high-definition images of soft tissue without subjecting the patient to radiation. Recent technological advancements now even allow for real-time application under sterile conditions.

To achieve the best possibilities for optimal patient care, you can choose a two-room or even three-room solution, combining the imaging systems. This opens up the possibility of image fusion, whereby images from multiple modalities are fused to give you a more comprehensive assessment of the patient’s situation. Thus, planning, guidance, and check-up can all form part of one surgical intervention.
Okayama University Hospital is a teaching hospital in Japan, aiming to offer the most advanced medicine, surgery, and medical technology to patients who are adversely affected by serious disease. As part of their mission to be “the final line of defense in medicine,” the hospital partnered with Getinge to construct an impressive 20 new operating rooms, including one Hybrid OR. Getinge was involved from the very beginning, providing advice on room planning, equipment selection, OR integration, and the synchronization of the table and angiography system.

One of the challenges during this project was the fact that some of the suppliers were new cooperation partners for Getinge. Additional planning and coordination efforts were therefore necessary regarding the ceiling unit, the angiography system, and the mobile CT. However, Getinge was able to solve this problem of coordinating different systems by designing a separate multidisciplinary room, so that the angiography system would not limit use of the CT scanner and the OR in general.

Okayama University Hospital’s Hybrid OR is now primarily used for cardiovascular interventions and other types of
thoracic surgery. Its modular Maquet Variop wall and ceiling elements were customized to accommodate windows to let in daylight and printed with photos of Okayama’s famous Japanese garden to create a friendly, appealing environment for the medical staff to work in. In fact, the layout and design of this Hybrid OR are now used as a best practice example the world over.

The hospital has also reserved a space for an additional Hybrid operating room, to be completed at a later time, which will feature either a further angiography system or an MRI.
Yuanlin Christian Hospital, Taiwan

Yuanlin Christian Hospital (CHCH) is one of the newest and most modern hospitals in Taiwan, with nine conventional operating rooms and two specialized Hybrid OR configurations. The hospital was constructing a new building and wanted state-of-the-art equipment to ring in an era of new technical standards. They decided on Hybrid ORs, to be used mainly for neurosurgical and vascular interventions, and sought out Getinge as a leading manufacturer that can plan a complex Hybrid OR environment and deliver it as a turnkey solution.

As the Hybrid ORs were to be adjacent and share a sliding gantry CT scanner, one of the challenges was how to adhere to international hygiene standards while conforming with local regulations. The very limited time frame for the construction of the Hybrid ORs also posed a challenge. Despite these challenges, Getinge finished the Hybrid ORs on schedule. The chosen Maquet Variop Modular Room System made it possible to construct a separate little room for parking the sliding gantry CT scanner. It can thus serve both Hybrid ORs, almost doubling the utilization level of this cost-intensive equipment. In addition, the angiography system and the CT scanner in the angio-CT Hybrid OR can move freely over the Maquet Magnus Operating Table System, offering new possibilities in therapy, interventions, and immediate assessment of treatment results.

The project took 14 months from initial design to go-live. Getinge continues to support CHCH, especially regarding new technological developments. The design of Hybrid ORs allows for easy adaption and installation of new features and equipment, enabling CHCH to keep pace with any future technological and medical innovations.
In the Hybrid OR, we have many self-supporting beams that lift the equipment, making it safe for the medical personnel to move around during operations. Such an environment is a safety guarantee for the staff and also allows for optimal ergonomic workflow. The golden standard from Germany and Getinge has brought Taiwan the greatest help.

Max Y. F. Lin
Managing Director, Taiwan
What sounded futuristic just a few decades ago is fast developing into a standard in healthcare: Hybrid ORs and multimodality suites combine the latest advancements in robotics and image fusion to allow clinicians to diagnose and treat in a single location. This reduces risk and delays, improves patient safety, and ultimately reduces costs.

In the modern Hybrid OR, spatial separation is a thing of the past. Cardiovascular, neurosurgery, oncology, orthopedic surgeries, urology, and traumatology procedures can benefit from real-time diagnostic imaging. By integrating X-rays, ultrasound, MR, and CT into the OR, all procedures can be performed in the same surgical suite – minimally invasive and conventional alike.

When planning your new Hybrid OR, it is important to focus on the needs and workflows of today, but also the rapidly evolving – often as-yet-unknown – technologies and tools of tomorrow. Initially, installing a Hybrid OR is a major financial investment. But it is an investment that pays for itself: patient outcomes and staff satisfaction are improved, while OR downtime is reduced.

As a pioneer in the design and installation of Hybrid ORs, Getinge goes well beyond individual products to deliver complete and customized solutions that are future-proof and suit the continuously evolving, multidisciplinary needs within the Hybrid OR. Our comprehensive approach – refined by years of experience – places the hospital and its patients at the center, helping to save and support lives the world over.
Second to none
Getinge’s product offering for Hybrid suites

Getinge solutions for Hybrid ORs
From MR-compatible ventilators to tables and everything in between, Getinge has created a product offering for Hybrid suites that is second to none. The elements complement each other for seamless interaction and an ergonomic user experience. We go beyond individual products and deliver complete multidisciplinary solutions that suit all professional disciplines within the Hybrid OR environment.
Structure and flow are the fundamental elements of a successful Hybrid OR. With the Maquet Variop Modular Room System, your Getinge expert can plan and design an intuitive workplace that streamlines workflows. Combined with IT solutions by Getinge that work together to ensure a safer, integrated, and better utilized facility, we enable healthcare professionals to focus on delivering the best possible care for patients.
Getinge is a global provider of innovative solutions for operating rooms, intensive care units, sterilization departments and for life science companies and institutions. Based on our firsthand experience and close partnerships with clinical experts, healthcare professionals and medtech specialists, we are improving the everyday life for people – today and tomorrow.

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