

### **Emergency Hospitals for Coronavirus Patients**

Pictures from the Chinese city of Wuhan circulated around the world: there, within a matter of a few days, a hospital for Coronavirus patients was built at lightning speed. Just ten days after the diggers moved in, the first patients were being treated. Hospitals in Germany are also preparing for the emergency. If the capacities of individual regions that are particularly badly affected are not adequate, it will be necessary to reactivate decommissioned hospitals. In some cities, buildings such as exhibition centers or sports halls are already being repurposed. For this to work without a hitch, a multitude of things must be considered, from structural features through hygiene requirements to legal matters.

#### **When Capacities Are Insufficient**

With regard to medical care, Germany is definitely one of the frontrunners in Europe. There are around 28,000 intensive care beds in 1,160 hospitals, and this figure is currently being doubled by special measures. At the same time, hospitals have cancelled non-urgent planned surgeries, patients have been transferred and – where possible – sent home. While all these measures create additional treatment capacity for emergencies, if the number of serious cases rises sharply within a short time auxiliary hospitals will absorb the expected increase in the number of patients.

#### **Bringing Disused Hospitals Back Into Service**

In order to create additional treatment capacity, a number of German federal states have recommissioned disused hospitals. In Germany, there are still around 150 such hospitals, but their condition varies greatly, depending on how long they have been disused and whether any refurbishment measures have since been carried out. Recommissioning is accordingly complex. Professor Dr. med. Christian K. Lackner, a physician and Head of the Healthcare Division at Drees & Sommer, explained: ‘Clinicians, technicians and engineers have to work hand in hand to make the building fit for the new hygiene and process requirements as quickly as possible. Detailed knowledge of all the framework conditions – including legal ones – relating to buildings, hospital management, medical technology and hygiene is also needed. Under time pressure, this will only succeed if there are cross-professional teams working in parallel.’ Professor Lackner believes it is worth the effort, because clinical processes can be mapped more easily here than in other types of buildings. Moreover, the technical prerequisites and the hygiene conditions are already in place.

### **Repurposing of Sports Halls and Exhibition Centers**

If the recommissioned hospitals also reach the limit of their capacity, large-capacity buildings such as sports halls or exhibition centers can be converted quickly. For this to work, every step must be planned in advance and precisely timed. Individual modules such as partition walls are industrially prefabricated and assembled on site. In principle, intensive care beds and beds with ventilators can be set up in the same way. However, intensive care beds have even higher requirements in terms of hygiene and technical equipment. To guarantee patient safety, the same technical construction requirements apply in sports halls and exhibition centers as in hospital buildings.

Professor Lackner continued: ‘The watchword is that under no circumstances should patients be put in danger or germs spread. The design of ventilation systems, sanitary facilities and medical technology must be in line with hygiene requirements. Important measures include, for instance, a separate admission area for infected patients, or a ventilation system that prevents the further spread of germs.’ He also suggested that such auxiliary hospitals should only be run in close collaboration with all other regional hospitals.

### **Staff and Equipment**

Integrated procedures and pooled resources will be required – just as with a merger of clinical facilities. It involves clinical and logistical processes, the documentation of treatments, medical equipment, technical facilities and, not least, staff. Christian Lackner commented: ‘We have now reached the *learning by doing* phase – especially as regards the logistics surrounding the replenishment of stocks of consumables and protective equipment. Hospitals, nursing homes and the entire outpatient care sector are accessing the same global equipment market for these items.’

According to Professor Lackner another great challenge, in addition to the provision of medical devices such as ventilators, intensive care monitoring equipment and infusion pumps, is the hiring of staff. He added: ‘In line with the instructions issued by the German Federal Ministry of Health, in addition to fully qualified medical specialists and nursing staff, medical students can also be recruited as team members to take blood samples or swabs.’ This relieves medical and nursing staff to a certain extent, he added, but only if the composition of the teams is right: ‘Patient safety is the most important thing.’

### **Biography of Professor Christian Lackner, Director Healthcare Division**

*Professor Dr. med. Christian K. Lackner, aged 59, is both a clinician and a real estate expert. Following many years as the Head of the Institute for Emergency Medicine and Medical Management at the University Hospital of LMU Munich, eight years ago he switched to take up a senior consulting function in the Healthcare division of the Stuttgart-based real estate consulting company Drees & Sommer. For several years he has been providing advice to large hospitals on, among other things, drawing up emergency action and staffing plans for mass casualty incidents – MCI – (such as mass casualty injuries and mass casualty infections). He also provides the institutions with support on the harmonization and extension of these plans to regional, federal state and national level.*

*He applies his knowledge and experience of emergency and acute medicine; clinical risk and error management; structural and process analysis; and change and quality management processes, to the planning and analysis of projects relating to the construction, conversion and extension of clinics and hospitals. Working together with construction project engineers, process advisors and project managers, he oversees planning and construction processes, including consultation of users and clinical commissioning. His objective is always to maximize patient safety while minimizing risk.*

*To do this, he critically examines the existing position and compares it with the current operational, process-related and medical needs. Smooth, resource-conserving and less error-prone clinical operational processes are essential, particularly in acute medicine.*

### **Drees & Sommer Healthcare**

*Since the beginning of March, Drees & Sommer has formed interdisciplinary, cross-professional teams of experts that are on standby. Clinicians, medical technicians, engineers and architects, nursing specialists, hygiene experts, procedural and infrastructural facility management specialists – all very experienced in their fields and team-oriented – are ready to begin work on the same day if requested by an emergency taskforce or the public authorities to carry out work on the recommissioning or repurposing of hospitals, including emergency hospital construction. We can remain in place until the structure is working routinely in order to relieve all institutions that are already operating at full capacity or are overloaded. The greatest challenge is making it possible to map the necessary clinical and nursing processes – especially if the buildings are unsuitable for the purpose.*

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