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Hospitals in touch with the latest trends

The intelligent and centrally controlled use of state-of-the-art building technology and its integration allows hospitals and care facilities to boost efficiency, security, and sustainability while reducing complexity and costs.

In 2009, the average life expectancy in Switzerland was 84.4 years for woman and 79.8 years for men; 50 years ago, it had been about 71 years. In 1960, the total costs for the Swiss healthcare system were 2 billion Francs, which corresponded to 4.9% of the gross domestic product; in 2008, costs had risen to 58 billion Francs (10.7% of the GDP). Demographic change brought about by higher life expectancy and progress in medical care is putting increasing pressure on all service providers in modern healthcare systems.

These factors place even more stringent demands on hospitals and care facilities, which in turn creates additional responsibilities towards patients, staff, and visitors: biomedical and communications technology, security and fire safety, air conditioning—from general zones to operating rooms requiring clean-room conditions—as well as the supply of all forms of energy must be ensured 24 hours a day. At the same time, facility operators are expected to save energy, reduce the environmental impact, and cut costs.

Better efficiency and security through integration

How can patients control the lighting and temperature in their room right from their beds, raise or lower the blinds, or surf the web, watch TV, or listen to the radio from their patient terminal? How can caregivers and doctors access all relevant patient records, such as current x-ray images, at any time and from anywhere in the hospital?

A large hospital has as many as a hundred different medical and building technology systems. Most of them are still monitored, operated, and managed separately. In addition, many systems use proprietary or industry-specific standards and protocols. However, integrated systems which

communicate with each other and offer a unified user interface for operations and management are gaining ground—and are becoming more attractive economically as well.

The intelligent use of state-of-the-art technologies and their holistic integration is an effective approach for the healthcare industry to meet growing demands. Without integrated building automation systems that combine all building technology infrastructure applications into one solution so they are able to interact, it is impossible to meet all these requirements. In short, integrated intelligent infrastructure solutions improve operations, reduce complexity and costs, and make it possible to significantly boost efficiency, security and sustainability.

Installing and maintaining such solutions requires extensive expertise as well as a broad range of products, systems and services. As one of the world's largest healthcare suppliers, Siemens offers a modular program for the healthcare industry. From building technology to imaging systems, from therapy equipment to IT and telecommunication solutions, Siemens' comprehensive portfolio helps customers meet their business and environmental goals.

Best care possible

Intelligent management of all applications associated with the building technology infrastructure is the most effective way to meet all comfort, security and efficiency requirements in hospitals and care facilities. The integration and central control of the building technology infrastructure are essential to this approach. Standardized interfaces are used to control laboratory and biomedical systems and to monitor information and communication systems. This interoperability between building automation, danger management, biomedical engineering, and information and communication technology allows hospitals to provide the best patient care possible while keeping costs to acceptable levels and maximizing security and reliability.

The following examples demonstrate how integrated solutions from Siemens ensure patient and staff comfort and security in hospitals and care facilities and provide for streamlined operations and improved energy efficiency.

HiMed hospital room solution: Modern hospital rooms give patients maximum independence and easy communication while reducing the workload of caregivers and doctors. The Siemens HiMed Cockpit is an easy-to-use touchpanel terminal attached to the hospital bed that integrates room controls (lighting, temperature, windows, blinds) and communication features such as phone and email. Patients can also choose from a variety of entertainment options such as TV, video, Internet, radio or games. In addition, the terminal provides access to patient records which doctors and caregivers can retrieve using their ID. Since the patient terminals are connected to the hospital

information system, system administrators can make definable information, such as x-rays, as well as specific applications available right at the bedside.

HiMed IP Nurse Call system: This IP-based nurse call system is a reliable solution for hospitals. Its modular design can be customized to comply with specific requirements and structures, and its voice and convenience features are optimized for communication between patients and hospital staff. Mobile call distribution and communications streamline tasks, reduce staff workload, and increase patient comfort. Patients are able to use the room components easily and safely. The call system is connected directly to the hospital's IP network. No specialized knowledge is required for planning, installation, startup and support. Call rooms are easily added to the system via Plug and Play.

Operating room solution: Operating rooms (ORs) have stringent requirements for technical systems. To protect the lives of patients, ORs must be available immediately when needed and ensure trouble-free operations. For example, correctly set ventilation helps protect against infections during surgery. Adequate fresh air supply and the correct room temperature improve working conditions and boost the productivity of surgeons and nurses during surgery. The Siemens touchpanel allows for immediate and direct control of features such as ventilation, heating, lighting and blinds, and displays error status messages. An easy-to-use interface ensures ideal environmental conditions for patients and doctors, better safety, more efficient procedures, and reduced energy consumption. Based on customized scenarios, the operating room solution allows OR workflows to be optimized.

Mobile nurse call and care system for dementia patients: The effects of our aging population include an increase in the number of long-term patients and in the occurrence of diseases such as dementia, which require specialized solutions. This makes it imperative to optimize performance in care wards in order to ensure comprehensive patient care at any time. For example, a proactive security management system could be established to track older persons, those suffering from confusion, and patients who might get lost in the hospital or leave the building without supervision. Using a state-of-the-art wireless tracking system, the location of a person carrying an RFID transmitter can be determined quickly and precisely. In an emergency, the nursing staff in charge is alerted immediately. This means enhanced security for patients and relatives and better staff productivity because caregivers don't have to monitor doors or search for patients. The system also eliminates baby mix-ups, prevents theft of expensive medical equipment, and supports asset tracking and logistical workflows.

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