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ZHAW School of Management and Law

Scientists Are Developing the Smart Hospital of the Future

ZHAW, together with other academic and industry partners in Switzerland, is investigating ways for hospitals to achieve digital transformation. The Innosuisse Flagship project “SHIFT” will run until 2025.

Modern forms of organization, digital technologies such as virtual reality or artificial intelligence, and the integration of processes and data can turn hospitals into intelligent systems while increasing quality and efficiency.

For three and a half years, a consortium headed by ZHAW and four other research partners, some 20 hospitals, and 24 industry partners will explore the question of how hospitals can be transformed to realize the vision of “the hospital of the future.” The research project “Smart Hospital - Integrated Framework, Tools & Solutions” (SHIFT) will run until June 2025. It has a total budget of 5.7 million Swiss francs, and as one of its Flagship projects, it has the support of Innosuisse, the Swiss Innovation Agency.

The Road to Digitalization

Hospitals are the most important and the largest players in the healthcare system in terms of costs. “Accordingly, we have a particularly effective lever here to better tap the potential of digitalization. With SHIFT, we can, in a sense, develop a digital transformation blueprint of the entire healthcare system,” explains ZHAW health economist Alfred Angerer, Co-Director of the research program.

Digital technologies help hospitals cope with cost pressure, demographic change, and quality demands. One example is data-based forecasting models for predicting, planning, and optimizing staff scheduling. In addition, sensors and apps can help promote physical activity among patients after surgery and provide medical staff with corresponding data for monitoring treatment goals.



Strengthening Prevention and Early Detection

“The ‘smart hospital’ is characterized, among other things, by more proactive care for patients; more than ever, it puts people at the center of its processes,” says Sven Hirsch, Co-Director of SHIFT and head of the ZHAW Digital Health Lab. Digitalization will generally increase the possibilities for detecting diseases earlier or even preventing them. “With the help of digitalization, we can also adapt treatment even better to patients. For example, we can discharge some patients earlier and continue to treat them at home in their familiar environment,” adds Jens Eckstein, a specialist for internal medicine at the University Hospital Basel and Medical Director of SHIFT.

The program consists of three research areas: In the first, researchers look into how inpatient treatment in the hospital and outpatient follow-up care for patients at home can be linked seamlessly with the help of digital technologies. The second involves the development of solutions to support hospital staff and patients and strengthen their abilities. The third area concerns the development of effective and efficient hospital management processes.

A Broad Research Network

The SHIFT Innosuisse Flagship project is run by the Winterthur Institute of Health Economics at the ZHAW School of Management and Law with the support of an interdisciplinary team of ZHAW researchers in IT, health, data analysis, and process design. In addition to the University Hospital Basel, the Universities of Basel and Zurich, FHNW, and the participating hospitals, 24 industry partners help to integrate the project into practice. With its Flagship initiative, Innosuisse promotes innovation in relevant areas for a large part of the economy and society. SHIFT is one of 15 research projects approved in the 2021 Flagship call.

About the SHIFT research project

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