



## Approved Innosuisse Flagship Project **Smart Hospital – Integrated Framework, Tools, and Solutions (SHIFT)**

**Project Lead:** Prof. Alfred Angerer, Prof. Sven Hirsch, ZHAW Digital Health Lab

**Leading House:** ZHAW Winterthur Institute of Health Economics

**Total Budget:** CHF 5.7 million, **Project Duration:** January 2022 – June 2025 (3.5 years)

The hospitals of the future will be different from the ones we know today. Through the consistent use of new forms of organization, digital technologies, and the integration of processes and data, hospitals will be continuously transformed into intelligent systems. More than ever, smart hospitals will focus on people, with the needs and experiences of the patients, their families, and the hospital staff at the very center.

Healthcare services are moving away from reactive to proactive care. The “P4 Health Continuum,” which comprises predictive, preventive, personalized, and participatory approaches, enables (chronic) diseases to be detected earlier, prevented better, and treated more successfully. Hospitals need to transform. They need to find better ways to deal with the many challenges and tasks associated with their purpose, including demographic challenges and meeting the increasing cost pressure of growing quality demands. In Switzerland, the need for digital transformation in healthcare predates the pandemic. Despite many technological solutions, we are confronted with inconsistent data silos, gaps in the assignment of responsibilities, and inefficient organizations.

The “Smart Hospital – Integrated Framework, Tools, and Solutions” (SHIFT) Flagship project focuses on the key players in the healthcare system: hospitals – at the same time, the largest players in terms of costs. Here, there is great potential for increasing quality and efficiency. Hospitals are also the most complex single entities. A holistic view of the challenges mentioned above will allow the various service providers to be analyzed, taking into account their interdependencies, after which they can be systemically readjusted within the overall system. The greatest challenge will be addressing this complex machinery as a whole. Digitalization in hospitals can only succeed if the human-technology-organization triad (MTO approach) is taken into account.

SHIFT will make use of new, holistic organizational approaches and the potential of digitalization. It will collect data, integrate it, and process it automatically, making it measurable, available, and analyzable decentrally at the right place at any time. These solutions are “smart” because they use technical tools such as artificial intelligence, virtual reality, and the internet of things. They are also “liquid” in that they use sensor technology, connectivity, and telepresence to provide patients with barrier-free care even beyond hospital boundaries. In this way, SHIFT will focus on people’s needs, create technologically integrated solutions, and develop efficient, agile management approaches to transform healthcare.

As the Leading House, ZHAW has joined forces with four research partners (University Hospital Basel (USB), University of Zurich (UZH), University of Applied Sciences and Arts Northwestern Switzerland (FHNW), and University of Basel (UNIBAS)), as well as 24 practice partners and four research partners to investigate how digital transformation can be implemented, using the example of hospitals.

Using a novel technology, data, and knowledge platform, we will show...

1. how new technologies enable seamless, “liquid” care and improve quality (Pillar 1: Seamless Patient Path),
2. how smart solutions must be designed to increase staff competencies and empower patients (Pillar 2: Patient & Staff Empowerment), and
3. how smart hospitals can manage both clinical and support processes more effectively and efficiently (Pillar 3: Management of Hospital Systems).

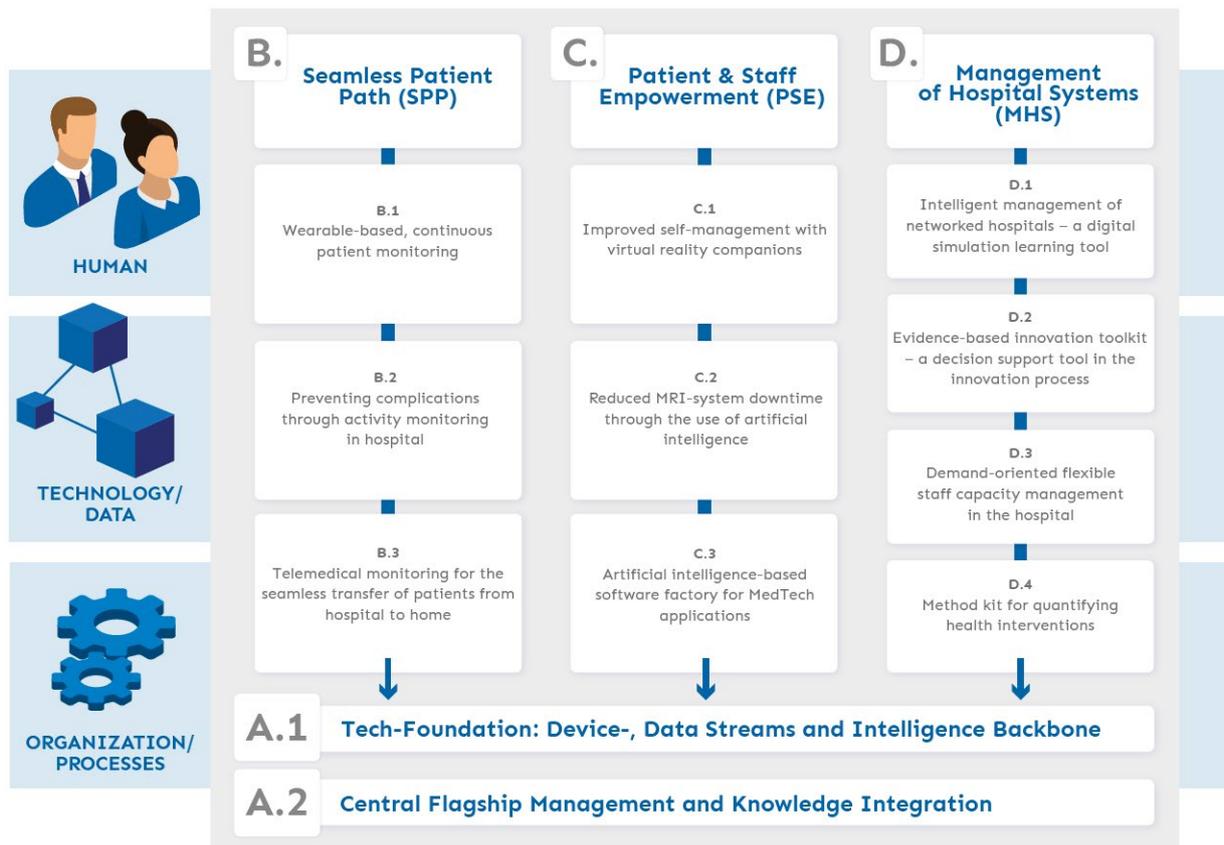


Figure: The three pillars of the SHIFT Flagship project, including subprojects

#### Practice Partners

- Ateo GmbH
- Atos Schweiz AG
- Beaufort AG
- Careanesth AG
- Company Factory AG
- Craft AG
- EI-T GmbH
- Energie 360 Grad AG
- headbits AG
- heyPatient AG
- Kantonsspital Aarau AG
- KPMG AG
- Leitwert AG
- Medgate AG
- POLYPOINT AG
- PrognosiX AG
- Roche Diabetes Care AG
- Swiss Paraplegic Centre
- Swiss Cancer Foundation
- TBWA Switzerland AG
- The i-engineers AG
- University Hospital Zurich
- Whatscount GmbH

#### Research Partners

- ZHAW Winterthur Institute of Health Economics
- ZHAW Institute of Applied Simulations
- ZHAW School of Social Work
- ZHAW Institute of Business Information Technology
- ZHAW Institute of Applied Information Technology
- ZHAW Institute of Innovation and Entrepreneurship
- ZHAW Institute of Data Analysis and Process Design
- University Hospital Basel
- University of Basel Institute of Nursing Science
- University of Zurich Krauthammer Lab
- University of Applied Sciences and Arts Northwestern Switzerland

#### Contact

- Prof Alfred Angerer, [alfred.angerer@zhaw.ch](mailto:alfred.angerer@zhaw.ch)
- Prof. Sven Hirsch, [sven.hirsch@zhaw.ch](mailto:sven.hirsch@zhaw.ch)