Trusted Health Ecosystems
Concept for a national platform strategy

In the "Trusted Health Ecosystems" project we are creating a concept and a product vision for a national health platform of the future. This text is part of the overall concept which is published at www.trusted-health-ecosystems.org.

Discover more, search less – prototype of a national health platform

The core service of the national health platform outlined here is to provide personalized information pathways that adapt to changing information needs and have the capacity to facilitate the handling of health-related information. To illustrate our concept, we have developed a prototypical design that shows what this platform might look like one day.

Increasingly, patients are using the internet to gather information from sources beyond the traditional healthcare system. Currently, they rely primarily on major search engines for this task. Depending on the search term entered by a user, Google and other search engines can generate hundreds of thousands, or even more, results, leaving it up to the user to determine which "hit" is accurate. Users often aren't aware that their selection process is influenced not only by objective criteria but also by algorithmic systems that lack transparency, as well as their own emotions.

The underlying logic of our product vision is different: rather than searching for information, patients discover it. The conventional "pull" principle of search engines gives way to the "push" principle of messenger services, where relevant information is offered at the right moment. Information and education in health care are no longer isolated events, they follow a structured process that considers individual preferences and the contextual conditions of each patient (See Understanding information transfer as a process).
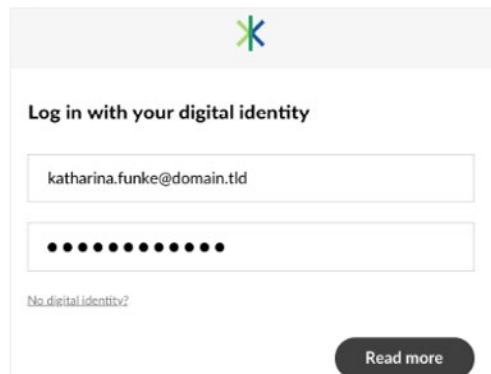
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It starts with trust

Unlike searches conducted with a search engine, the information pathway starts from within – not outside – the healthcare system, that is, in consultation and treatment rooms, and wherever else patients receive personalized support. After all, trust in the platform isn't fostered online; it's built where people have face-to-face interactions. Therefore, our concept envisions that healthcare professionals can suggest or "prescribe" an information pathway through an SMS URL or even directly from a patient's electronic health record.

Personal information feed

When it comes to user verification, our concept intends to utilize the digital health ID provided by health insurers to their policyholders. This approach eliminates the need for complicated registration processes and unnecessary access barriers. Once users log in to the platform, they're greeted by a user interface resembling those found on major social networks. This has the advantage that users can navigate quickly and effortlessly.

*Login with
digital health ID*

We've named our prototype "LIV," which stands for the German concepts of "leicht" (easy), "individuell" (individual), and "vertrauenswürdig" (trustworthy). We've developed two versions: one optimized for mobile devices and the other for desktop use. Potential future additions include an auditory interface and voice control mechanisms for the information system.

Similar to Facebook, LinkedIn, and other social networks, the focal point of the interface is a "feed" with tiled posts that accumulate content over time. However, this approach differs significantly from social networks in that it presents users with much less information. The platform's objective is to reduce information overload while enhancing content quality. Content is thus highly personalized and relies on contextual information to determine the optimal time for delivery to the user.
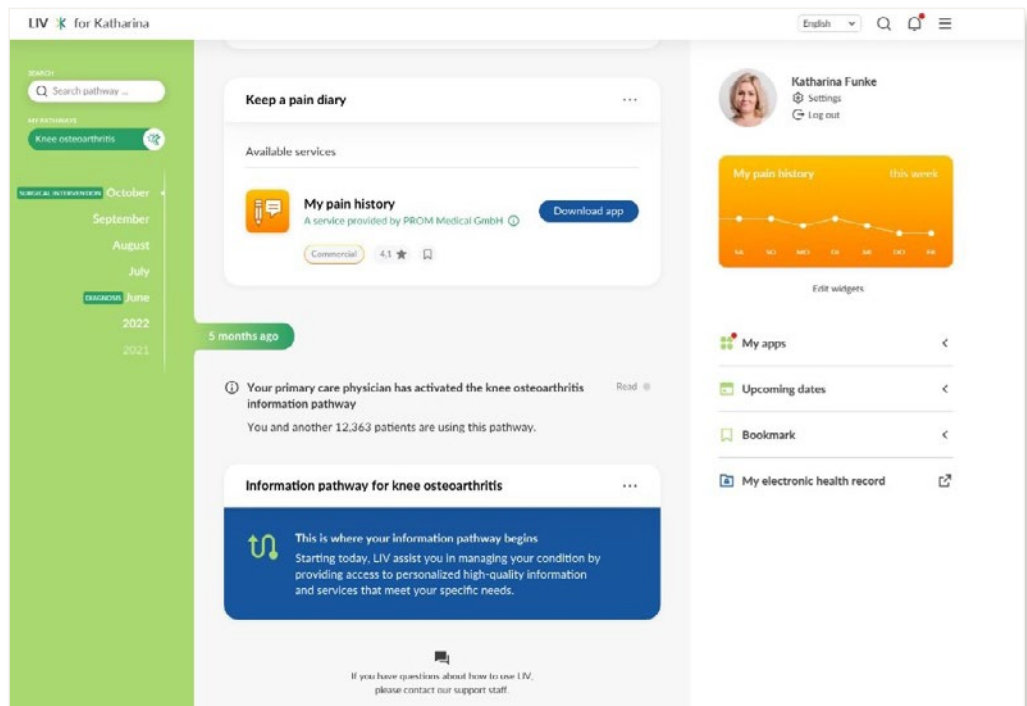
For instance, if a new medication is prescribed and the patient has opted in to data-sharing, this contextual information is transmitted to the platform via the electronic health record. Consequently, the information pathway automatically displays relevant information about the medication in real-time. Contextual cues can also come from various sources such as smartwatches, voice systems, or mobile sensors, offering prompts for situational information requirements.

Integrated patient information

The information pathways always refer to a specific medical condition, therefore they are created on a disease-specific basis. This tailored approach enables the system to potentially combine various medical conditions, delivering integrated and coherent offerings to patients dealing with multimorbidity.

As part of our product vision, we've initiated an example pathway based on the diagnosis of "knee osteoarthritis." A fictional user, Katharina Funke, receives an initial, tentative diagnosis, marking the start of a journey through different parts of the healthcare system. This journey encompasses specialized diagnostics, surgery decisions in a hospital, medical rehabilitation, and occupational reintegration. The information pathway starts by providing basic information about the condition, which is followed by details regarding the healthcare system, treatment alternatives and legal issues, as well as information on rehabilitation.
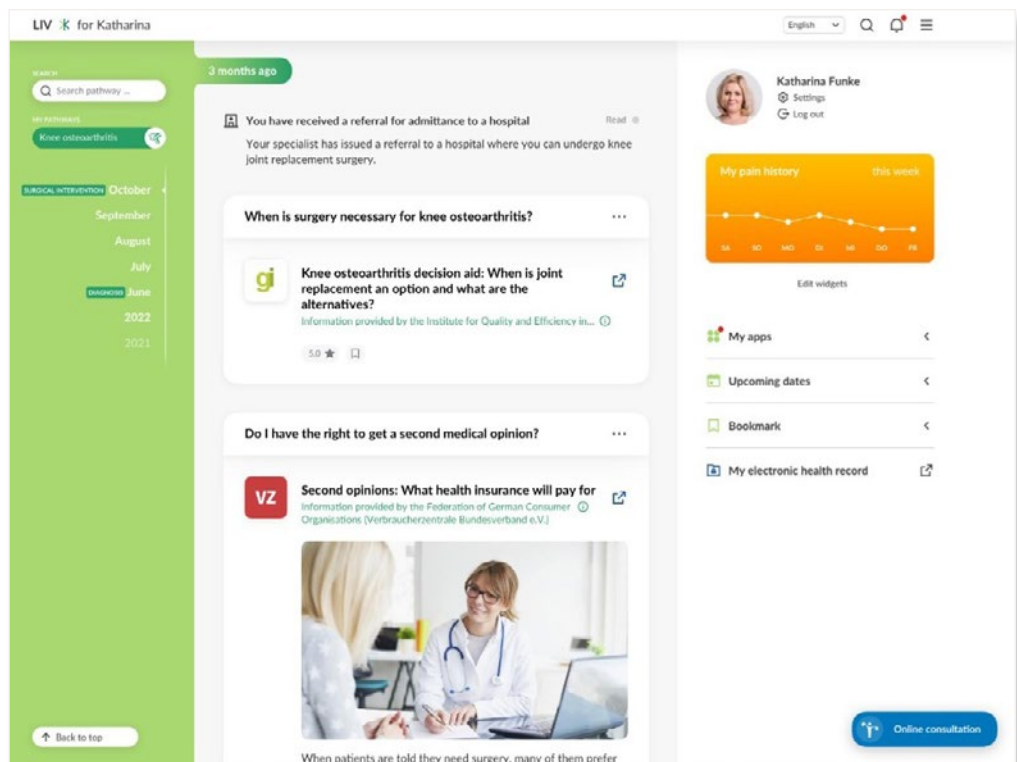
Target group-specific prevention pathways

The concept of information pathways is illustrated in our product vision through the scenario of a knee osteoarthritis diagnosis. However, the basic principle of process-driven information management can easily be adapted to the domain of prevention and can even be tailored to specific target groups and cultural considerations. Applying the principle in this way, healthy behaviors could be practiced and strengthened over time. Particularly vulnerable groups could be reached precisely.

In creating a personalized pathway, the system draws upon a wide array of information and services from various certified providers, thus offering users a comprehensive selection of suitable options. As a result, the system might encounter several different offerings for a specific information need. In such cases, the highest-rated offering within the user community is presented, and a drawer function allows users to view and select other options.

Application of new knowledge

In addition to the information provided, each pathway also presents relevant digital services based on the patient's needs. For example, when learning about a newly prescribed medication, users can proceed to redeem a digital prescription. Similarly, users receiving information about treatment options are directed to a

service for obtaining a second medical opinion. Additionally, information about healthy eating is followed by digital applications featuring cooking recipes and dietary plans. By integrating information and services in this manner, the system helps patients apply newfound knowledge to their lives and health-related decisions.

Linking information with relevant services

Each information pathway is unique, tailored to dynamic individual needs and encompasses medical, legal, and psychosocial considerations. The system also proactively offers information that users may not have even been looking for. For instance, it can provide information about a patient rights and responsibilities even before issues related to sickness pay arise.

The system's user interface and core service could undergo diverse modifications. Regardless of the final design, this product vision demonstrates that a national health platform could yield numerous benefits without having to generate editorial content itself. It showcases the feasibility of bundling valuable information and easing patients' information management burden. By incorporating a quality verification process for providers, reversing the search engine principle, tailoring information to the user and applying process-driven principles to information provision, we can develop a new format that simplifies how health information is processed, facilitates informed decision-making, and fosters trust in digital solutions.

Bibliography

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Contact: Dr. Sebastian Schmidt-Kaehler, Dr. Inga Münch

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