Interdisciplinary approach in healthcare innovation

The Institute for Interdisciplinary Innovation in healthcare (I3h) aims to educate the next generation of healthcare professionals and to develop scientific knowledge in a way it can efficiently contribute to foster innovative technologies and strategies in healthcare. We want to bridge competencies and expertise from various disciplines and foster collaboration to contribute to patient-centered healthcare advances," explains I3h-co-director, Prof. Dr. Hilde Stevens. "It is organized as a virtual institute, a collaborative research and education environment, linking complementary expertise to elaborate and educate."

"Healthcare is entering a new era, characterized by therapeutic and preventive solutions, tailored to individual patients' needs. Another characteristic is the use of newly developed tools, based on emerging technologies and artificial intelligence. The approach is very data-intensive. The novel health technologies should go together with new economic models."



© Institute for Interdisciplinary Innovation in healthcare - Prof. Dr. Hilde Stevens, I3h-co-director

Hi-Prix

I3h is a partner in several interdisciplinary and international projects. "A good example is Hi-Prix, involving 18 partners from 10 European countries, including academic institutions, public authorities, healthcare providers, and independent research organizations. Through theoretical models, quantitative simulation, qualitative research work and case-studies, this three-year EU-funded project will generate new evidence on: a) the role of the public sector in R&D, b) indirect medical and environmental costs in

pricing and reimbursement determinations, c) the pricing dynamics over pharmaceutical products' lifecycle, and d) the impact of policies and incentives on the competitiveness, innovativeness and equity in the healthcare system. We will map and formulate new pricing and payment schemes to use across technology classes, therapeutic areas, settings, and healthcare systems/geographies to guide successful adjustment and flexible implementation. However, the lack of appropriate data infrastructure, legal barriers, and unwillingness to adapt current systems often impede the use of these schemes."

Fight against paediatric cancer

Cancer in children remains a major source of suffering: in Europe, every year around 35,000 children are diagnosed with, and around 6,000 children die from cancer. "Despite major advances in cancer research, children benefit much less from this progress than adults. Some tumours (e.g., neuroblastoma) are almost exclusively observed in children. The development of new therapeutics for children with cancer, however, is hampered by the rarity of each individual childhood cancer. This makes drug development economically unattractive, resulting in a low interest in paediatric cancer from the traditional pharmaceutical industry."

To improve this situation and to ensure that research leads to access to novel treatments for children, I3h collaborates with Sam Daems, director at Waterland, who tragically lost his daughter to an incurable brain tumour. "Together with the team of KickCancer Foundation (Belgium) and the Imagine for Margo Foundation (France), we developed a novel economic model, published in Nature Reviews Drug Discovery and featured in the Financial Times. It is based on combining resources from public and private parties, profit and non-profit, in a pooled fund which optimally balances risk and returns. This fund will invest in a portfolio of development programmes, each focused on a specific paediatric therapeutic target, reducing the investors' risks as much as possible. Therefore, early in the development, long before the new medicines are approved by health authorities, pre-agreements will be negotiated with the organizations responsible for their reimbursement."

Educational flagship

Every year, I3h organizes the Interdisciplinary Program in Healthcare Innovation. "This is our educational flagship," says Hilde Stevens. "Healthcare experts from various domains share their views on challenges and opportunities to establish sustainable, affordable, accessible and patient-centric healthcare systems. It runs in all Belgian universities, and increasingly also in various European universities and health organizations, each time

attiring around 120 participants. The program is increasingly followed by master and PhD students, postdocs and professionals interested in healthcare innovation.”



© Institute for Interdisciplinary Innovation in healthcare - Part of the Interdisciplinary Program in Healthcare Innovation is an annual lecture, in 2024 given by Alain Fischer, specialist in gene therapy.

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