PRESS RELEASE
For immediate release

Luxembourg, 27 April 2023

Clinnova to Launch Precision Medicine Initiative Across Europe

Inaugurating a new initiative to foster AI-driven precision medicine via data federation, standardization, and interoperability.

Clinnova, an international project involving clinicians and researchers from Luxembourg, France, Germany and Switzerland, is being officially launched in Luxembourg on April 27th at a kick-off ceremony attended by the Ministers of Higher Education & Research and Health. The initiative aims to realize the benefits of precision medicine for treatment decisions through data federation, standardization, and interoperability. The project is supported jointly by the Luxembourg National Research Fund (FNR), the Grand Est Region, the Canton of Basel as well as the State of Baden-Württemberg and will establish a shared launchpad for medical AI algorithm development in the heart of Europe.

Artificial intelligence (AI) holds huge potential in the field of healthcare but its realization faces challenges, notably in the context of data enabling and the ability to build appropriate clinical studies. The Luxembourg part of the Clinnova project is in the framework of the National Centres of Excellence in Research (NCER) programme of the FNR and is led by the Luxembourg Institute of Health (LIH) in partnership with the University of Luxembourg, the Centre Hospitalier du Luxembourg, and the Hopitaux Robert Schuman.

To date there are no straightforward methods available to decide which drug to prescribe to which patient. With new drugs coming on the market in a steady flow, this leaves physicians and patients with a concrete problem: the wrong therapy may extend the disease burden while invoking an unnecessary cost on the social system. Clinnova was conceived as a precision medicine initiative that tackles these challenges on three levels.

On the first level, Clinnova focuses on generating benefits for patients and physicians on three diseases, inflammatory bowel disease, rheumatoid diseases and multiple sclerosis. With an emphasis on data quality and standardisation, the goal is to develop effective AI algorithms that can support physicians in prescribing the right drug to an individual patient at the right time. Furthermore, these data can accelerate translational research into disease causes, which can further affect patient care.

On the second level, Clinnova will bridge the worlds of biomedical research and healthcare by fostering critical infrastructure development in Luxembourg. It will undertake the necessary steps to assure data interoperability and integration in this infrastructure concept.

Finally, on the third level, Clinnova will federate precision health data across borders. The Clinnova team in Luxembourg has teamed up with Universities and clinical centres in Baden-

Württemberg in Germany, the Grand Est region in France, and the region of Basel in Switzerland to invest in similar Clinnova precision health programs, thereby linking the established IT infrastructures. In this vein, the Clinnova partners are building a federated precision health network across Europe.

Overall, AI-driven solutions for healthcare require both infrastructure investment and coordination between clinical institutions. *"We envision that in such a data-enabled environment, the translation and application of biomedical research towards patients and their unmet needs will become a seamless routine process,"* says Dr Jasmin Schulz, chief coordinator of Clinnova at the LIH. The project's stakeholders also believe that translational research initiatives focused on patients will evolve to become a major driver for fundamental research, thereby increasing the amount of therapeutic possibilities for patients in the future.

"We believe that Clinnova's mission to utilize data science and AI to reshape healthcare aligns well with the national priorities of Luxembourg. The Ministry of Health fully supports this ambitious goal to become a leading digital economy and further develop personalised medicine," stated Paulette Lenert, Minister of Health.

On the national, trans-sectorial level, the Luxembourg National Data Service has also been created as a catalyst for the national research and innovation ecosystem to fully utilise the potential of data. In this context, Clinnova was chosen as one of the use cases for the healthcare sector.

"By leveraging data federation, standardization and interoperability, Clinnova is poised to foster AI-driven precision medicine at an unprecedented scale. By utilizing international and interdisciplinary expertise anchored within the national priority of personalised healthcare, the project fully aligns with the Luxembourg National Research and Innovation Strategy. Clinnova will significantly contribute to Luxembourg's research environment and the expansion of its positive image throughout the world," concluded Claude Meisch, Minister of Higher Education and Research.

About the FNR's NCER programme

The National Centres of Excellence in Research (NCER) programme was established by the Luxembourg National Research Fund (FNR) and provides a structuring framework and funding instrument to bundle research excellence around a mission of significant societal relevance by encouraging high-level transdisciplinary research and inter-sectoral collaboration.

The first successful NCER project was launched by the FNR in 2015 on the topic of Parkinson's disease. A second NCER project was initiated earlier this year in the field of Financial

Technologies. NCER projects should become internationally recognized examples of best scientific practice, in regards to the outcomes and impact of research as well as in the way research is carried out. The funding of an NCER project by the FNR is contingent on a rigorous evaluation by a panel of international experts and runs for a maximum of 8 years.

About the Luxembourg Institute of Health (LIH)

The Luxembourg Institute of Health (LIH) is a public biomedical research organisation focused on precision health and invested in becoming a leading reference in Europe for the translation of scientific excellence into meaningful benefits for patients.

The LIH places the patient at the heart of all its activities, driven by a collective obligation towards society to use knowledge and technology arising from research on patient derived data to have a direct impact on people's health. Its dedicated teams of multidisciplinary researchers strive for excellence, generating relevant knowledge linked to immune related diseases and cancer.

The institute embraces collaborations, disruptive technology and process innovation as unique opportunities to improve the application of diagnostics and therapeutics with the long-term goal of preventing disease.

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