Japan-Finland Seminar on Personalized Medicine and Health, 9th April 2018, Tokyo

Background of the Seminar

The seminar in Personalized Medicine and Health aims at providing a forum for identifying concrete topics of joint interest for research and innovation cooperation by inviting experts from academia (including experienced researchers and young scientists) and industry (including business developers, innovators and investors) as well as government representatives and other stakeholders from Japan and Finland to present and discuss.

Both in Finland and in Japan the health care systems are facing growing challenges resulting from ageing population and growing number people with chronic medical conditions. To address these challenges new solutions for prevention and treatment are urgently needed and digitalization of health care and move towards preventive, predictive, personalized and participatory (P4) medicine boosted by recent developments in science and technology are expected to be among the key areas for breakthroughs. Along these lines national strategies have been devised and major initiatives launched. For example, Finland is leveraging its unique strengths to create an environment for personalized medicine research and innovation developing the supporting infrastructure and enabling legislation. Simultaneously initiatives for renewal of social and health care system are in progress aiming at guaranteeing access to quality care also in the future.

Accordingly, the topics of the seminar include novel technologies and methods for personalized medicine, including genomics & metabolomics, as well as data driven AI enabled analytics, diagnostics and treatment management. Finnish experiences from the development of infrastructure and enabling legislation (e.g. the Biobank Act and recent legislation enabling secondary use of health data based on individual's consent) will be discussed as they form the basis for research and innovation in personalized health.

Despite the progress in personalized medicine its large scale use in health care is still at very early stage. Recent initiatives for expediting the translation of personalized medicine ("P4 medicine") to clinical care practice will be discussed as this is a focal area for making the promise of personalized health into reality. There are opportunities in jointly working on validating new solutions, carrying out health economic studies and informing policy making and clinical guidelines using results and experiences from Finland and Japan.

For successful adoption of the new approaches and solutions education of professionals and citizen is needed, in particular as the aim is to empower the citizen – together with professionals - for better management of their health. For this aim the new digital and AI based solutions provide unforeseen opportunities by embedding guidelines as well as personalized learning at the time and point of need with the tools that are developed for prevention and for treatment management.

Personalized health breakthroughs require large scale, long term multistakeholder projects that aim at creating results that often would not be possible for any individual organization alone. In Finland such major projects are often organized as public–private partnerships (PPP). An example of a large scale PPP-project to be discussed is FinnGen, a large scale pre-competitive project to advance precision medicine was launched in 2017. It aims at producing medical innovations by combining health registry and genome data from 500,000 individuals and support Finland to become a pioneer biomedicine and personalized healthcare and creates co-operation model between public sector and healthcare industry to provide early access to new personalized treatments and health. Building on FinnGen one special focus is on personalized preventive medicine. As an example, the aim is

to combine genotypes and metabolomics information from up to 100,000 individuals (using a high-throughput NMR -based blood analysis solution) to evaluate cardiovascular risk, reporting the risk score to individuals and including an intervention to evaluate the efficacy of this strategy for reducing cardiovascular risk.

In Finland personalized health is seen both as a key area of future health care and as an important emerging industry serving global needs. The involved actors form the Finnish personalized health ecosystem that includes research and education institutions, companies providing solutions both for research and for healthcare needs, public and private social care and health care providers, research infrastructure entities like the Biobanks and the new Genome Centre, and accelerators and testbeds for companies and trials.

In personalized health cooperation there are opportunities for new innovative projects created by combining the complementary expertise and resources and by leveraging the ongoing large scale initiatives and the health care ecosystems in both countries. The opportunities to jointly study the combination of different ethnicities, environments and health care systems provides a perfect setting for gaining new scientific results and for creating health care innovations that serve global needs.