

Paris, 22 June 2016

Presentation of the French Plan for Genomic Medicine 2025

The French Plan for Genomic Medicine 2025 was presented to Prime Minister Manuel Valls by Yves Lévy, President of the National Alliance for Life Sciences and Health (Aviesan) and CEO of Inserm, on 22 June 2016. The Prime Minister sent an engagement letter to the President of Aviesan in April 2015, to examine the conditions needed to enable the use of whole genome sequencing in clinical practice. This ambitious plan, overseen and supported by the State, is aimed at positioning France as a leader among the major countries involved in genomic medicine within the next ten years. Although it responds to a public health challenge in diagnostic, prognostic and therapeutic terms, this plan is also aimed at encouraging the emergence of a national medical and industrial sector for genomic medicine, and exporting this expertise.

Genomic medicine is a reality: it is already transforming the manner in which a disease is prevented, diagnosed and treated, and how its progression is predicted. It is a highly competitive area internationally, with every country now hoping to introduce genomic medicine in its care pathway, develop an industrial sector and attract scientific talent in order to consolidate its strengths. To develop this Plan, the Aviesan alliance gathered together for a year institutional representatives and cross-sectional authorities from the research, health and industrial sectors, health and research agencies, ministerial headquarters, industries represented by ARIIS (Alliance for Research and Innovation in Health Industries), CNAM (National Health Insurance Fund), HAS (French National Authority for Health), CGI and École d'Économie de Toulouse (Toulouse School of Economics).

Thus over 150 people were involved in:

- Defining the place and importance of genome sequencing in current medicine and in the developments expected in the next 10 years.
- Establishing France's position in the area of genomics research, its place in current health plans and the priorities to be implemented in line with the national health and research strategies.
- Assessing the related challenges in terms of innovation, commercialisation and economic development, while taking technological aspects, big data management, and ethical implications into account.
- Proposing a long-term health economics model, incorporating National Health Insurance funding and the development of an industrial sector to support such an initiative.

"Genomic medicine is a revolution in the area of care and prevention," stated Yves Lévy, President of Aviesan, at the presentation of the Plan. "It is at the heart of innovation as regards diagnosis, prognosis, treatment and drug administration. France must find a way to achieve this revolution, and take its place among the leaders. To do so, we have formidable assets in the form of our basic, clinical and translational research."

Based on 14 operating measures structured into 3 broad objectives, the French Plan for Genomic Medicine 2025 is aimed at:

→ **Deploying the instruments of the genomic care pathway by**

- acquiring sequencing capacity with the deployment of a network of twelve sequencing platforms covering the whole territory,
- putting in place the tools for exploiting the volumes of data generated with the installation of a Data Collector and Analyser (DCA), which can handle and exploit the considerable volume of data generated by matching them with medical data, and offer the first services within the care pathway.

→ **Ensuring the operational deployment and growth in power of the scheme in a secure technical and ethical framework in order to allow access to genomic medicine for all people concerned (patients and their families according to indications) on the territory by:**

- The effective implementation of the genomic care pathway, the different components of which will be tested and validated, from the collection of consent documents, procedures for specimen taking, and transport and transfer of samples to sequencing centres, up to the establishment of staff to perform analysis and quality control on samples, and the preparation and sending of reports,
- The establishment of a scheme for the assessment and validation of indications for access to genomic medicine,
- The creation of a centre of reference, innovation, expertise and transfer (CRefIX), which can, in partnership with industry, provide the essential developments in technology and information systems,
- The establishment of the necessary training in genomic and digital health in universities and schools to meet the challenge of exploiting and interpreting data,
- The guarantee of a secure and high quality pathway.

→ **Contributing to the rapid emergence of a "genomic medicine" sector**

The establishment of a **national genomic medicine sector**, which can be a **lever for scientific and technological innovation, technology transfer and economic growth**, will require involvement from the relevant industries along with academic research and public health bodies.

To support the emergence of this sector, the plan also provides for monitoring of developments in genomic medicine at international level, and the implementation of a research programme devoted to health economics aspects.

The ethical dimension is at the centre of this Plan for Genomic Medicine. Access to

and use of genomics data representing whole populations raise many ethical questions, both at individual and societal level. The Plan also anticipates referral to the French National Consultative Ethics Committee (CCNE), which is essential for strengthening these aspects at national level, and for acquiring the means to inform, consult and involve citizens in this revolution.

Finally, Patient organizations linked to Inserm constitute a solid network of partners very aware of the challenges and issues involved in high throughput genomic medicine, as evidenced by their contribution to this Plan.

Genomic medicine, international competition and major challenges

The United States, United Kingdom and China have launched ambitious national plans in the last two years, aimed at both developing a national strategy and supporting their industrial actors. With them, many industrial actors are preparing to deploy technological solutions devoted to genomic medicine and managing the associated massive digital data. Big international companies have seen the strong development potential of digital health, and are investing in this sector.

In Europe, several countries have started to incorporate genomic medicine into their health system: Estonia, the Netherlands and Slovenia. There is a risk of medical tourism developing towards European countries offering this type of service, and with it a worsening of health inequalities.

It was against this background that the “French Plan for Genomic Medicine 2025” was drawn up to respond to the different challenges of genomic medicine:

A public health challenge to allow a substantial number of patients to receive personalised diagnostic, prognostic and therapeutic care through the sequencing of their genome.

A scientific and clinical challenge aimed at strengthening the translational chain from the molecular exploration of diseases to therapeutic benefit for the patient through the constitution and matching of heterogeneous and multiple databases, whether they involve biological, clinical or even environmental data.

A technological challenge through the essential convergence of the digital and life and health sciences required by this approach. The ability to acquire, store, distribute, interpret and address these massive data is at the centre of this convergence, which will lead to the emergence of a computational and data sciences sector in biology.

An economic challenge, both in terms of efficiency and cost for our healthcare system (reduction in the number of inappropriate, inaccurate and expensive tests, reduction in time needed for analysis, elimination or limitation of unnecessary drugs, elimination of some disabling side-effects, increased life expectancy), as well as an opportunity to develop a new industrial sector as a source of health innovation, growth and jobs.

→ To find out more

> Read and download the complete Plan

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