**GENERAL OBJECTIVE**: Develop and implement an IT-based European immunotherapy platform and use big data analysis, artificial intelligence, and simulation modelling approaches to collect and aggregate efficiently and effectively real-world QoL data, monitor patients' health status, conduct causal inference analyses, create harm-reduction recommendations for patients and other stakeholders, and disseminate the findings

**SPECIFIC SCIENTIFIC and TECHNICAL (S&T) OBJECTIVES**:

1. **Create the first big-data real-life cohort of cancer patients treated with immunotherapy within** a context of multidimensional management (with data on clinical information, health-related QoL (HR-QoL), IR-AEs, drug consumption, lifestyle, and administrative data). The European dimension of the project allows gathering a large number of patients treated with immunotherapy and obtain more robust and generalizable results. This will contribute to the competitiveness of Europe at the international scale.
2. **Bring personalized medicine to the forefront, shifting the emphasis toward a collaborative approach by developing an open Smart Digital Platform** --an agile data and analytics platform-- that goes beyond the current boundaries. In a networked medical setting, clinicians can collaborate with patients to develop the best methods of care and personalized treatments regardless of their location in keeping with the GDPR and patient confidentiality in the different countries of the EU. Developing an innovative Smart Integrative solution supported by the Smart Digital Platform allows a centralized access to the data from four different countries (France, Spain, Portugal, The Netherlands).
3. **Accelerate knowledge directed to different stakeholders** (patients, relatives, clinicians, pharmacists, health authorities, and general public) for a better understanding of the determinants of QoL and its optimization after immunotherapy through the development of innovative analytic tools (artificial intelligence and causal models).
4. **Produce policies and recommendations to improve patients QoL** and participate in the implementation of the SDGs (Sustainable Development Goals) for 4P medicine (Predictive, Preventive, Personalized, Participative) in immunotherapy for cancer patients.
5. **Develop an immunotherapy Smart Digital Platform** as a hub to facilitate interactions between patients, clinicians, and the general population with information, advices, and educational programs and execute the large-scale multi-agency pilot project: “Improved patient engagement & medical collaboration at the European level”.

The capabilities identified above help establishing an ambitious program expected to considerably impact the management of cancer patients after immunotherapy in the near future at the European level.

Overview of research methods

