

D³4Health Foundation

STRATEGIC PLAN

2026–2028

*Phase 1 – First release of the Strategic Plan
(English translation)*

Sede Legale: Piazzale Aldo Moro 5, 00185 Roma
 Sede Operativa Centrale: Viale Regina Elena 295, 00185 Roma
 Sede Operativa Val D'Aosta: Via Lavoratori – Vittime del Col du Mont, 24, Aosta
 PEC: fondazione.d34health@pec.it

Table of Contents

Introduction	3
Purpose of the Document	3
Section 1: Who We Are	5
The Foundation	5
The Values	6
The Mission	7
The Organization	7
Section 2: Where We Are	12
The First Three Years of Activity (2023–2025)	12
Lessons Learned: Between Past and Future	16
Section 3: The Reference Framework	20
P-E-S-T-L-E Scenario	20
The Reference Market	20
The European Benchmark	21
S.W.O.T. Analysis	21
Section 4: Strategic Objectives	24
Positioning of the Foundation	24
Strategic Lines	24
The 2026–2028 Strategy	25
PL1 – Research and Innovation	26
PL2 – Training	28
PL3 – Research Infrastructure	30
PL4 – Technology Transfer	33
PL5 – Centre of Competence	35
Cross-Cutting Operational Strategies	38
Expected Results and Benefits	39
Economic-Financial Model	45
Section 5: Phase 2 – Implementation and Monitoring	46

Introduction

This document constitutes a preliminary formulation of the Foundation's Multi-Year Strategic Plan, prepared as part of the first phase of the engagement, as set out in the contractual agreements. It represents an orientative working basis, intended to outline an initial strategic framing useful for setting the planning path and for fostering a shared reflection on the main areas of intervention.

As agreed, the Plan will subsequently be supplemented, deepened and structured in the second phase of the engagement, through the active contribution of the Foundation's partners. These contributions will be gathered through moments of direct dialogue, such as working meetings, workshops, interviews and other participatory methods deemed most appropriate.

The process of listening and dialogue will make it possible to progressively finalize the strategy, objectives and operational actions, ensuring their full consistency with the Foundation's vision and mission, as well as with the growth and development objectives defined by the Members.

In this sense, the Strategic Plan is configured as a dynamic instrument, built in a participatory way, capable of reflecting in a structured manner the shared priorities and the evolutionary perspectives of the Foundation over the medium-to-long term.

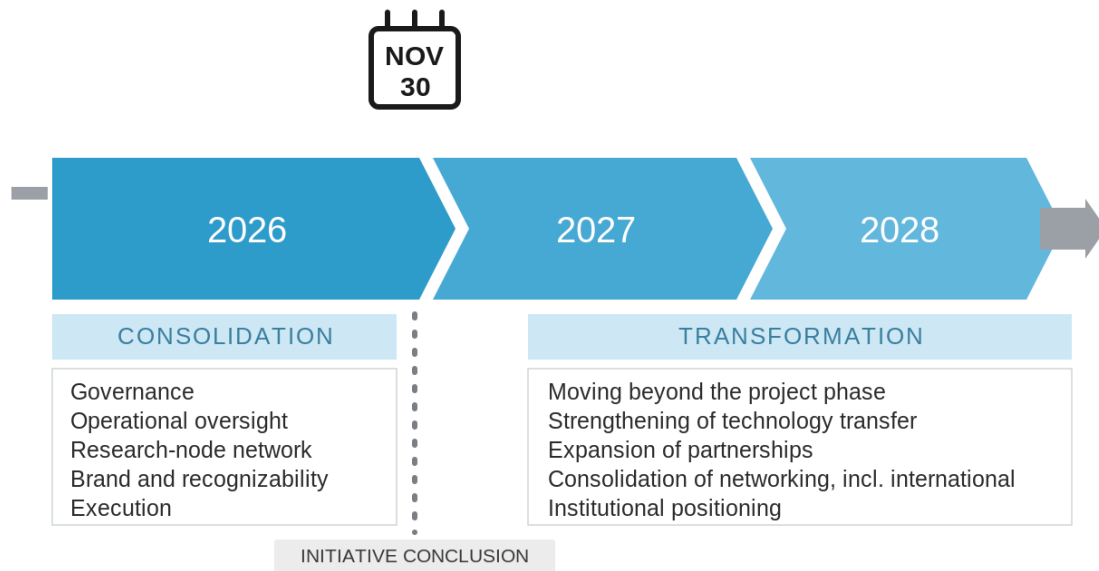
Purpose of the Document

The 2026–2028 Strategic Plan defines the evolutionary trajectory of the D³4Health Foundation at a crucial transition stage, following the launch and first implementation of the PNC D³4Health Initiative, in which the Foundation consolidates its role as a body for coordination, strategic direction and the building of the initiative's future sustainability, while at the same time strengthening its institutional positioning.

The document aims to guide the Foundation towards a new phase of life, moving beyond a purely project-based dimension and aiming at the consolidation and scalability of the activities launched in the first three-year period, thanks to the definition of a sustainable strategic-operational model capable of generating value in the medium and long term in terms of collective well-being. An ambitious design that rests simultaneously on strengthening the Foundation's institutional role and on enhancing the investments, infrastructures and collaboration networks that have been activated.

In terms of the evolutionary scenario, the 2026–2028 period is a three-year span of strategic transition and progressive transformation that can be articulated into two macro-phases:

1. A first phase, that of consolidation, focusing on: strengthening governance processes, operationally overseeing ongoing activities, bringing the structuring of the research-node network to maturity, brand positioning, the recognizability of the initiative, national accreditation and the completion of the programmed objectives;
2. A second phase dedicated to transformation, understood as the evolution of the Foundation's organizational and operational model, aimed at: moving beyond the project phase, continuing to strengthen technology transfer, expanding partnerships, reinforcing institutional positioning, and ensuring the continuity and impact of activities beyond the extraordinary-funding phase.



The 2026–2028 Strategic Plan is therefore configured as an instrument of direction and governance, intended to integrate vision, objectives and operational actions, ensuring consistency between institutional mission, organizational structure and the long-term sustainability of the action of the D³4Health Foundation, in a logic of evolution and progressive transformation.

What follows is the first version of the document envisaged for Phase 1 – Elaboration of the first release of the Strategic Plan, prepared in order to support the governing bodies in defining and drafting the three-year strategic plan 2026–2028 on the basis of the indications and documentation provided by the Foundation. This version will be revised and finalized in Phase 2 – Monitoring and consolidation of the three-year strategic plan, in accordance with the contractual specifications.

Section 1: Who We Are

The Foundation

The D³4Health Foundation, a private not-for-profit legal entity, was established in 2022 with the mission of **promoting, coordinating and enhancing research, innovation and technology-transfer** activities in the field of **digital health and advanced technologies applied to health**, placing innovation, research and technology at the service of the health system and building the foundations of innovation and research in the field of the “health of tomorrow”.

The Foundation was created as the implementing body and national HUB of the D³4Health Initiative – Digital Driven Diagnostics, Prognostics and Therapeutics for Sustainable Health Care, within the framework of the Complementary Plan to the National Recovery and Resilience Plan (PNC), assuming formal responsibilities towards the Ministry of University and Research (MUR) and the associated bodies for the coordination, management and reporting of the activities envisaged by the programme.

As a **body for coordination and integration** among universities, research institutions, public and private healthcare facilities, companies and other actors of the innovation ecosystem, the D³4Health Foundation does not take on the role of a market operator, but rather that of a **system enabler**, capable of pooling scientific expertise, research infrastructures and project-design capabilities. It becomes a privileged context in which the convergence between advanced research, public policy and the needs of the healthcare system is constantly and progressively fostered, with the aim of supporting the evolution of healthcare innovation from a set of project initiatives into a structured, integrated and durably sustainable model. According to this vision, the **Foundation therefore acts as a bridge between research and application**, steering healthcare innovation towards systemic impact in support of the evolution of care, prevention and health-system management models.

The activities of the D³4Health Foundation develop along **three main lines**:

COORDINATION OF RESEARCH ACTIVITIES

through support for public-private partnerships in managing complex scientific programmes and enhancing the multidisciplinary skills of the actors involved

TECHNOLOGY TRANSFER AND ENHANCEMENT OF RESULTS

fostering the move from research to concrete application, including in collaboration with the industrial and entrepreneurial fabric

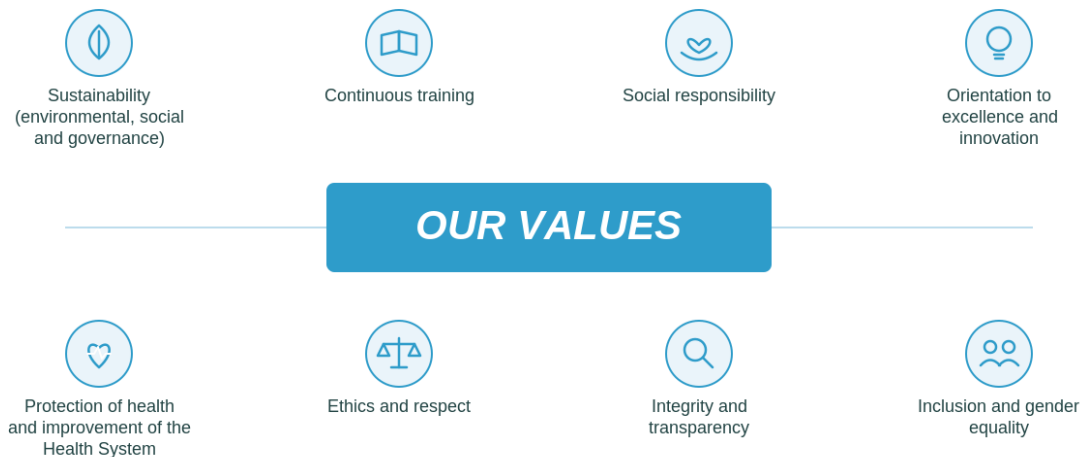
COORDINATION OF THE RESEARCH INFRASTRUCTURES SHARED BY MEMBERS

in the development and management of research infrastructures, understood as enabling assets for innovation, experimentation and the diffusion of advanced digital solutions in healthcare

These are complemented by cross-cutting activities of training, dissemination and stakeholder engagement, aimed at strengthening the culture of innovation, skills, and dialogue between the scientific world, companies, institutions and society.

The Values

The Foundation's action is grounded in a set of values that coherently guide its strategic choices, its governance structure and its operating methods, reflecting the institutional responsibility it has assumed in promoting innovation in the health field.



The Foundation's values are inspired by a holistic vision based on the **One Health** paradigm, in which **the human being is placed at the centre of the processes of care, research, innovation and health-policy definition**. From this perspective, the Foundation promotes and coordinates the development of scientific research and technological innovation, fostering the integration of clinical, scientific, engineering and digital skills, in an approach that recognizes the **deep and indissoluble interconnection between human health, animal health and ecosystem health**, and that guides the transformation of research results into concrete and sustainable solutions for the healthcare system.

The protection of health is recognized as a primary public good and represents the ultimate reference point of the Foundation's activities, which adopt a data-driven approach grounded in evidence analysis. Scientific research, excellence and innovation are interpreted as data-based levers to improve the quality of care, strengthen the sustainability of healthcare systems and reduce inequalities in access to innovative solutions, in compliance with the principles of social responsibility.

This commitment is accompanied by an approach grounded in integrity and transparency, with particular attention to the ethical, social and regulatory implications connected to the adoption of advanced technologies for the collection, integration and modelling of health data – from artificial intelligence to digital twins, from biomarkers to sensor systems, through to innovative biological models such as organoids and organs-on-chip. Technologies that make it possible to build increasingly accurate representations of the human being, guiding the responsible use of predictive models, the protection of personal data, respect for individuals and, where possible, the reduction and overcoming of animal testing.

Finally, the Foundation adopts a long-term vision, attentive to the scientific, economic, organizational and social sustainability of its activities, recognizing in human capital, gender equality, inclusion, continuous training and skills development a fundamental enabling factor for innovation and for the continuity of the D³4Health project.

The Mission

The **mission of the Foundation** is to **promote and coordinate the development of scientific research and technological innovation in the health field**, fostering the integration of clinical, scientific, engineering and digital skills and **transforming research results into concrete solutions for the healthcare system**.

“GOING BEYOND HEALTH, TOWARDS GLOBAL WELL-BEING: WE ARE HERE TO CHANGE THE GAME — UNITING THE POWER OF RESEARCH AND INDUSTRIAL INNOVATION.”

A clear and challenging mission, which guided the birth and first three years of life in the journey to transform the health paradigm. A mission that is not limited to improving health, but extends to creating a positive impact on society as a whole. By uniting advanced research, innovation and a commitment to sustainability, it sets out to transform today's challenges into opportunities for the future.

D³4Health was born and grows thanks to a broad, multidisciplinary and interconnected scientific network, made up of the founding members, which brings clinical, scientific, technological and digital expertise into dialogue. This network is the project's true enabler: a collaborative ecosystem capable of crossing disciplinary and institutional boundaries, generating shared knowledge and turning it into concrete innovation. Through the synergistic work of its actors, D³4Health makes operational an integrated vision of health, in which research, care, prevention and sustainability converge in a One Health approach oriented to real impact on the healthcare system and on society.

The Organization

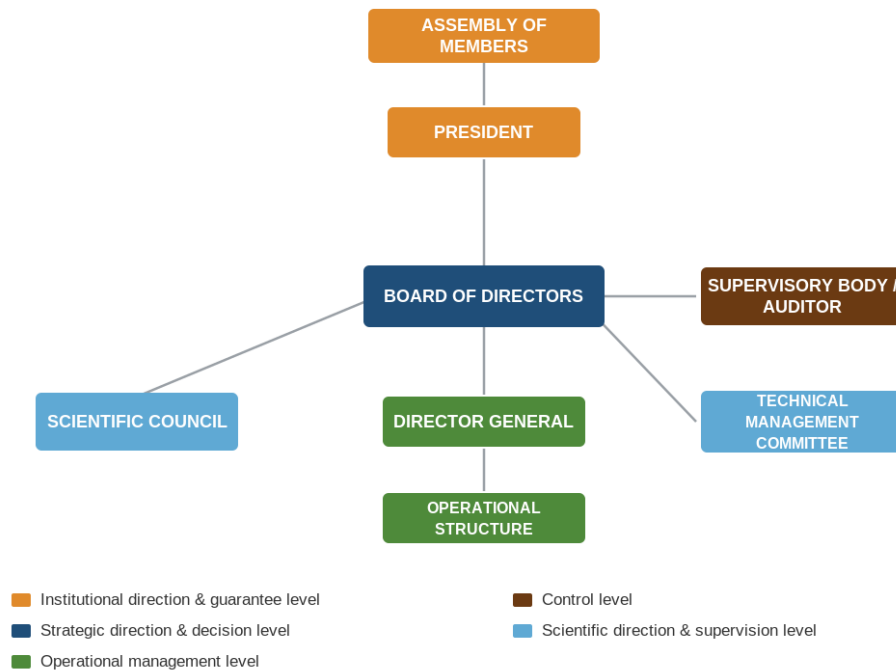
The organization of the D³4Health Foundation is structured to ensure effective, continuous and responsible oversight of the activities of coordination, management and enhancement of the D³4Health initiative. In parallel, in compliance with its statutory structure and institutional purposes, the Foundation will continue its path of autonomous growth, drawing on the experience gained in developing new services consistent with its *Vision* and *Mission*.

As the implementing body and national *Hub*, the Foundation adopts an organizational model that clearly distinguishes the functions of **direction**, **governance** and **control** from those of **operational management**, fostering a balance between scientific autonomy, administrative rigour and the capacity to integrate activities and the relevant ecosystem.

I. Direction, Governance and Control

The governance bodies ensure the alignment of activities with institutional objectives and regulatory requirements. A central role is played by the **Technical Management Committee**. The Foundation's organization is structured into the following governing bodies:

- The President
- The Assembly of the Foundation's Members
- The Board of Directors
- The Supervisory Body and Auditor of Accounts
- The Scientific Council
- The Technical Management Committee



- **The President:** as provided by Article 11 of the Statute, the President holds the legal representation of the Foundation and oversees the conduct of its activities. The President is a member of the Board of Directors and chairs it, ensuring coordination between the governing body and the management structure. Together with the Director General, the President oversees the execution of the resolutions of the Board of Directors and exercises the powers attributed by the Statute and those possibly delegated by the Board itself.
- **The Assembly of the Foundation's Members:** pursuant to Article 16 of the Statute, it is composed of the legal representative of each Promoting Founder and each Participating Founder, or of their delegate. The Assembly plays a central role in the Foundation's institutional structure, in particular through the appointment and removal of the members of the Board of Directors and of the Technical Management Committee, as well as through the approval of the annual activity plan. It also issues recommendations to the Board of Directors regarding the general lines of activity, the objectives and the programmes of the Foundation.
- **The Board of Directors (BoD):** is the body entrusted with the ordinary and extraordinary administration of the Foundation. It exercises functions of strategic direction, economic-financial planning and control, dealing with administrative, financial and asset management and overseeing the financial sustainability of the Foundation's activities, as provided by Articles 12, 13 and 14 of the Statute.
- **The Supervisory Body and the Auditor of Accounts:** exercises oversight of the administrative and accounting regularity of the Foundation, as well as verification of the correct economic-financial management, in compliance with current legislation and statutory provisions.
- **The Scientific Council:** exercises functions of high-level supervision and advice on the Foundation's activities, contributing to the pursuit of the institutional purposes set out in Article 2 of the Statute. The Scientific Council was designated by election by the Board of Directors and supports the entity in the orientation and scientific evaluation of the initiatives promoted.
- **The Technical Management Committee:** is an advisory body of the Foundation, tasked with monitoring activity flows and with the scientific management of the initiatives carried out. The

members of the Committee, in accordance with the provisions of the Statute, were elected by resolution of the Board of Directors and operate in support of governance and of the management structure.

II. Legal Representation and Executive Functions of the Foundation

The legal representation and direction of the Foundation are entrusted to the **President**, the **Scientific Coordinator** and the **Director General**, who operate in an integrated and coordinated manner in order to ensure effective and consistent management of the entity from the institutional, scientific and administrative standpoints. The three roles jointly contribute to leading the Foundation, covering all areas of responsibility, from legal representation to technical-scientific and training activities, through to administrative, accounting and financial management.

- **The President:** holds the **legal representation of the Foundation** and oversees the overall conduct of its activities. The President exercises the powers attributed by the statutory rules and those possibly delegated by the Board of Directors, ensuring compliance with the institutional and strategic direction of the entity. In close coordination with the Director General, the President oversees the execution of the resolutions adopted by the Board of Directors, ensuring consistency between governance decisions and their concrete operational implementation.
- **The Scientific Coordinator:** is responsible for coordinating the technical-scientific and training activities of the Foundation, with particular reference to what is envisaged by the activity plan of the D³4Health project and by the three-year strategic plan. The Scientific Coordinator plays a central role in organizing and managing scientific content, coordinating the Technical Management Committee and ensuring the quality and consistency of project initiatives. In addition, the Scientific Coordinator identifies and manages aspects relating to the Foundation's intellectual property. The Scientific Coordinator's activity develops in constant coordination with the President and the Director General, fostering effective integration between scientific direction and the overall management of the entity.
- **The Director General:** plays a key role in the administrative, economic, financial and organizational management of the Foundation. The Director General operates in line with institutional objectives and internal regulations, supporting the President in implementing the resolutions of the Board of Directors and acting as minuting Secretary of the BoD. The Director General is responsible for preparing the budget and final accounts, which are submitted to the Board of Directors for approval, taking into account the Foundation's operational needs and development prospects. On the BoD's mandate, the Director General assumes additional tasks aimed at supporting the achievement of the statutory purposes and of the objectives of the D³4Health project. The Director General also ensures compliance with regulatory obligations, in particular regarding personal-data protection (GDPR), the code of ethics, transparency and anti-corruption, and is likewise responsible for institutional communication activities and for managing the website, operating in constant coordination with the President and the Scientific Coordinator.

III. Operational Management

The operational structure oversees implementation, the coordination of the actors involved, and reporting to the competent institutions. The Foundation's operational management is organized according to a structured and integrated model, aimed at ensuring the effective implementation of research, innovation, project-management and strategic-development activities, in line with the direction of the Board of Directors (BoD), with the Statute and with the objectives of the D³4Health project.

- **Project and Research Management Area**

The Research Manager plays a central role in the technical and economic management of the projects in which the Foundation operates as *Hub* or mandatory, in particular for the D³4Health project. In accordance with the BoD's directives, the Research Manager coordinates and supervises research activities, ensuring implementation of the work plan, adherence to the schedule, the correct conduct of reporting activities and the achievement of project KPIs. The Research Manager also ensures coordination among the *Hub*, the *Spokes* and the Affiliates, supports the Scientific Coordinator and the Technical Management Committee, and oversees the preparation and transmission of periodic reports to the MUR. Finally, the Research Manager contributes to the definition and implementation of the dissemination plan and, where necessary, proposes reallocations of activities and budgets, subject to approval by the competent bodies.

- **Management of the Research Infrastructure**

The Research Infrastructure (RI) Manager is responsible for the management and development of the Foundation's research infrastructure, operating in close coordination with the Foundation's bodies and in compliance with the RI regulations. The RI Manager promotes the accession of new laboratories and nodes, attracts users and stakeholders, and enhances research, technology-transfer and training services. Main responsibilities include managing the RI web portal, formalizing agreements with nodes, laboratories and users, preparing the annual activity plan and related budget, monitoring the RI economically and operationally, and promoting its activities at national and European level. The RI Manager also supports the Research Manager and the Scientific Coordinator in achieving the infrastructure-access KPIs, and fosters the creation of thematic *Joint Labs* and accession to European research infrastructures.

- **Operational team and support functions**

In view of the significant growth of activities, the Foundation has launched a restructuring and specialization of the operational team, moving beyond a generalist logic of stakeholder engagement and establishing, from 2026, a team dedicated to supporting the activities of management, governance, administration, fundraising, internationalization, innovation and technology transfer. The team is composed mainly of consultants and highly qualified staff, possibly supported by specialized service companies.

- **Support for internationalization**

Internationalization activities aim to strengthen the positioning of the Foundation and of the D³4Health project at European and extra-European level, expanding scientific and industrial collaborations and the accession of new partners to the Research Infrastructure. The scouting of new international nodes and users is carried out in close synergy with the RI Manager and in compliance with the strategic objectives validated by the Foundation's bodies. The role is entrusted to a consultant with consolidated international experience in the world of innovation and enterprise.

- **Support for project management, dissemination and communication**

A dedicated working group supports the Scientific Coordinator and the Research Manager in the activities of project management, technical-scientific reporting, training, innovation, dissemination and communication. The team also manages information flows, content production, institutional and scientific communication, and the drafting of the Foundation's Communication Plan, fostering the enhancement of project results and stakeholder involvement.

- **Support for management, fundraising and competitive calls**

A further operational group works alongside the Research Manager and the Director General in the economic-financial management of projects, the control of reporting, administrative and regulatory

compliance, and procurement activities. The team also coordinates fundraising and participation in national, European and international competitive calls, contributing to the future sustainability of the Foundation.

- **Territorial presence – Aosta Valley Region Project**

Operational management is completed by the figure of the Project Manager operating at the Foundation's offices in the Aosta Valley, responsible for the project "Aggregazione R&D Salute VdA". The Project Manager coordinates project activities, monitors progress, manages relations with regional bodies and stakeholders, organizes training activities and carries out scouting for new funding opportunities, contributing to the consolidation of the Foundation's presence and role in the regional territory.

Consistent with the overall approach of the Plan and with the logic of transition from the project phase to the post-PNC consolidation phase, it should be noted that the Aosta Valley Region project was conceived as an initiative functionally integrated into the scope and timing of the PNC programme. It follows that the related activities and outputs will find their natural completion at the end of the initiative, ensuring continuity and consistency among objectives, governance and reporting. At the same time, the progressive strengthening of the Foundation's role in the post-PNC phase will make it appropriate to start a process of redefinition and revision of the Statute, so as to align the institutional, organizational and governance structure with the new mandate and the evolutionary prospects of the Foundation.

Section 2: Where We Are

The First Three Years of Activity – Objectives Achieved and Results 2023–2025

As provided by the Statute, the D³4Health Foundation began its activities to coordinate the D³4Health PNC initiative, which started on 1 December 2022 with the conclusion of the Initiative scheduled for 30 November 2026.

Consistent with project planning, the 2022–2025 three-year period was dedicated to building the scientific, technological and infrastructural foundations needed to develop *Digital Twins* and *Biological Twins* in the five reference pathologies: central nervous system (CNS) tumours; metastatic colorectal carcinoma; hepatobiliary tumours; type 1 diabetes; and multiple sclerosis.

During this period, the Initiative pursued the objective of building an integrated scientific and technological ecosystem, capable of collecting and enhancing data originating from humans — through sensors, wearable devices and biomarkers — and combining them with advanced digital models (*Digital Twins*) and innovative biological models (organoids, organs-on-chip and bioengineered systems), in order to develop, validate and evolve increasingly accurate representations of health status, disease progression and treatment response, while at the same time fostering a more efficient, responsible and, where possible, replacement-oriented use of animal testing.

The Foundation played an enabling role through cross-cutting activities of project management, support for the development of partners' project initiatives, and coordination of training and dissemination initiatives, contributing structurally to the enhancement of results, the strengthening of skills and the overall growth of the D³4Health ecosystem.

To complete the picture, the main results achieved in the intermediate phase of activity (2022–2025) also concern integrated technological and scientific outputs, generated through close inter-Spoke collaboration. These results can be traced back to the following technological macro-areas, each characterized by a specific maturity level (TRL) and by already-defined evolutionary trajectories. With reference to the results of the research projects carried out by the Foundation's partners, it should be noted that the mapping of the KPIs relating to ongoing project work is currently underway. As of today, any available data would necessarily be partial and therefore not fully representative of the actual results achieved, since the project activities are not yet concluded. For this reason, it was considered appropriate not to provide, at the current stage, detailed indications on outcome indicators. The KPI mapping will be completed at the end of the projects and will allow the indicators of results achieved to be defined in a precise, complete and definitive manner.

The Five Technological Macro-Areas

1. Digital platforms and infrastructures for clinical Digital Twins

DEVELOPMENT: an interoperable, cloud-based and federated digital platform, aimed at the management, integration and analysis of clinical, imaging, omics and patient-reported-outcomes data for the 5 target pathologies. The platform enables: ingestion and harmonization of retrospective and

TRL ACHIEVED: validation in a relevant environment, with use on real clinical cohorts and first support tools.

NEXT STEPS: 1) completion of cross-site multicentre validations; 2) consolidation of clinical web applications; 3) preparation for the move to TRL

prospective multi-centre datasets; training and validation of AI predictive models in federated-learning mode; and the implementation of Responsible, Explainable and Secure AI frameworks compliant with national and European regulatory requirements.

7 with prospective studies and user validation in the healthcare setting.

2. AI predictive models for diagnosis, prognosis and treatment response

DEVELOPMENT: advanced artificial-intelligence models dedicated to patient stratification, prediction of disease progression and assessment of treatment response, with direct reference to the five clinical use cases of the Initiative. Activities included: definition and standardization of clinical protocols and CRFs; development of MLOps pipelines for managing the model lifecycle; creation of predictive algorithms and radiogenomic models; and integration of models into application environments usable by clinicians.

TRL ACHIEVED: 4–6. Models validated on real retrospective data and at an advanced stage of prospective validation.

NEXT STEPS: 1) extension of the models to prospective datasets; 2) refinement of clinical-performance metrics; 3) structured integration into decision-making pathways and clinical trials.

3. Wearable technologies, sensors and digital biomarkers

DEVELOPMENT: a broad portfolio of wearable devices and advanced sensors, including graphene sensors, physico-chemical biosensors, neurophysiological monitoring systems, breath-analysis solutions and devices for continuous patient monitoring. These technologies were developed and tested in relation to the five clinical use cases and integrated into the overall data-collection strategy for the *Digital Twins*.

TRL ACHIEVED: functioning prototypes validated in the laboratory and in controlled experimental settings.

NEXT STEPS: 1) systematic integration with the digital platform; 2) pilot clinical tests and real-environment validations; 3) definition of industrialization and certification pathways.

4. Prospective Digital Twin infrastructures and models

DEVELOPMENT: launch and consolidation of the prospective collection of clinical and multi-omics data, functional to building the first prototypes of personalized *Digital Twins*. Activities included: prospective patient enrolment; definition of standardized data-acquisition flows; development of mathematical and simulation models; and implementation of interpretability and decision-support tools.

TRL ACHIEVED: proof of concept and prototypes under development.

NEXT STEPS: 1) completion of prospective-data integration; 2) clinical validation of the *Digital Twins*; 3) evolution towards personalized and adaptive predictive models.

5. Biological Twins and advanced in-vitro models

DEVELOPMENT: a new distributed infrastructure for the development of *Biological Twins*, based on organoids, organs-on-chip, microfluidic barrier models and 3D bioprinting, with a progressive shift from models on standard cell lines to patient-derived models. The activities made it possible to: develop

TRL ACHIEVED: experimental proof of concept and functional validation of the models.

NEXT STEPS: 1) increase in the biological complexity of the models; 2) systematic integration with the *Digital Twins*; 3) use in drug-screening

biological models relevant to the target pathologies; integrate sensors and data-acquisition systems; and generate experimental data usable for training the <i>Digital Twins</i> .	processes and personalized medicine.
---	--------------------------------------

Taken together, these five technological macro-areas describe the perimeter of the scientific and infrastructural assets built over the three-year period and constitute the basis for an integrated reading of the initiative's results, both in technological terms and in terms of clinical application.

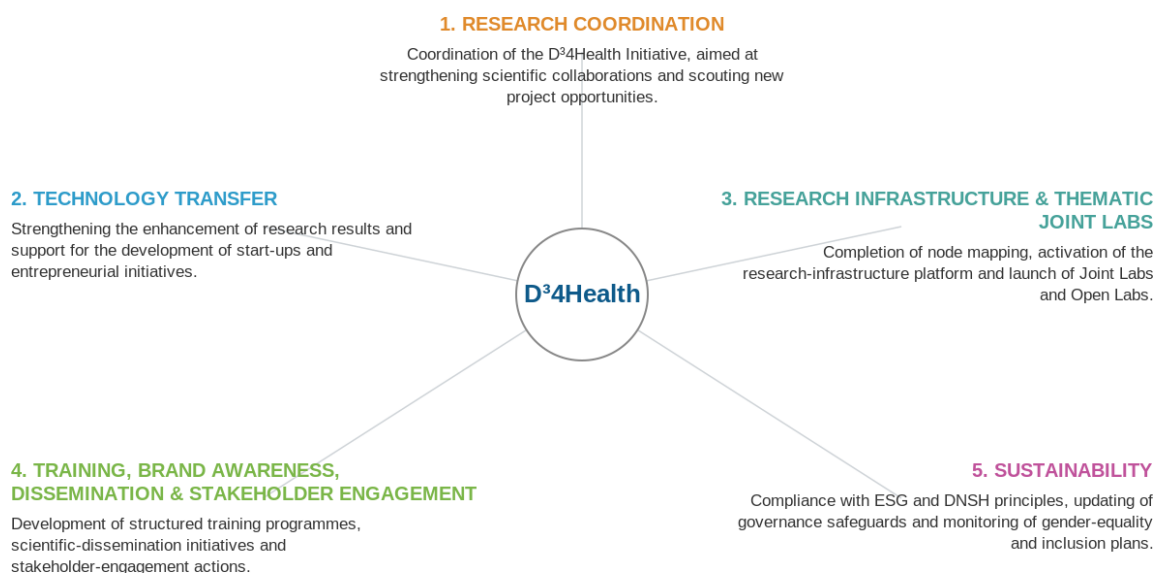
In order to provide a concise and structured reading of the results achieved in the 2022–2025 period, the activities and outputs of the Initiative are represented below. (To date, the total number of publications produced is 93, some of which are cross-cutting across several technologies — Source: “List of publications up to Q11.pdf” provided by the D³4Health Foundation.)

Technology developed	Results and evidence	Scientific publications	Next steps
Digital platforms and infrastructures for clinical Digital Twins	Federated and secure digital infrastructure for multi-institutional collaboration; consolidation of data governance, privacy and interoperability; Orthanc–3D Slicer integration; architecture ready to host clinical Digital Twin components.	Publications already produced and further contributions expected in the second batch (Q11–Q12), supporting the federated architectures and the data-integration models.	Complete multi-site validations; strengthen clinical web applications; full activation of Model-as-a-Service; enable federated explainability and clinician-facing interfaces.
AI predictive models for diagnosis, prognosis and treatment response	Deep-learning, radiomics and radiogenomic algorithms validated on multimodal datasets; reproducible pipelines with explainable AI; improvement of imaging quality, segmentations and clinical features across several pathologies (oncology, MS, T1DM).	Publications produced within algorithm-validation activities; further articles in preparation as part of the second batch envisaged by Milestone ML3.	Extension to prospective datasets; validation on independent cohorts; refinement of clinical metrics; integration into trials and clinical decision-making processes.
Wearables, sensors and biomarkers	Experimental validation of wearables and sensing platforms (graphene sweat sensor, smart insole, radar/respiratory test bench); multi-omics biomarkers and VOC breath profiling with reproducibility <10%; longitudinal signals integrable into the Digital Twins.	Publications produced on sensing devices, biomarkers and experimental validations; additional contributions expected in the second batch.	Improve robustness and usability; regulatory alignment; launch pilot clinical tests; link longitudinal signals to the Digital Twin pipelines.
Prospective Digital Twin infrastructures and models	Launch of prospective multimodal collection; first clinical Digital Twin prototypes (e.g. BTC, MS); decision-support tools and data-model integration in an explainable logic; first clinically oriented use cases.	Publications under development and expected in the second batch, linked to the validation of Digital Twin prototypes and prospective models.	Prospective clinical validation; full-stack data/model integration; evolution towards adaptive and personalized Digital Twins; closing of the

Technology developed	Results and evidence	Scientific publications	Next steps
			“data-model-validation loop”.
Biological Twins (PDO, organoid, organ-on-chip, 3D bioprinting)	Expansion of PDO biobanks; advancement of organoid-on-chip platforms, barrier models and 3D bioprinting; sensor integration for real-time read-out; drug-screening campaigns and mechanistic studies.	Publications already produced on biological and bioengineered models; further articles expected in the second batch of milestone ML3.	Increase throughput and multi-site reproducibility; integrate vascular/barrier components and sensors; extend studies under perfused conditions and link the results to digital predictions.

Lessons Learned: Between Past and Future

With reference to the first three years of activity (2022–2025), the D³4Health Foundation structured its action around five main strategic pillars: 1. Coordination of research activities; 2. Technology transfer; 3. Research infrastructure and thematic *Joint Labs*; 4. Training, Brand Awareness, Dissemination and Stakeholder engagement; 5. Sustainability.



The implementation of these pillars within the PNC Initiative represented a phase of consolidation of the team and of operational management, allowing the Foundation to affirm its role as a coordinating body and, at the same time, to mature important learnings in terms of governance models, multi-actor coordination and process structuring — useful in guiding strategic evolution in the post-PNC transformation phase.

P1 – Coordination of Research Activities

The coordination of research activities was the central pillar of the action of the D³4Health Foundation, consistent with its role as Hub of the PNC Initiative. In this phase, the Foundation performed a function of scientific and organizational direction, coordinating a broad and articulated network of Universities, IRCCS, Research Bodies and private partners engaged in developing advanced medical solutions. The experience gained made it possible to understand the value of strongly integrated coordination, capable of enhancing the plurality of the actors involved and of fostering convergence on common objectives. At the same time, the need emerged to evolve the governance model of coordination, strengthening its structure, organizational clarity and decision-making processes, in order to ensure greater effectiveness, integration and sustainability in the medium-to-long term.

LESSON LEARNED

- **Greater integration among disciplines and institutions** as a key lever to enhance skills and strengthen the systemic approach.
- **Strengthening of ethical-regulatory governance**, to manage health data, AI and

FUTURE PERSPECTIVES

Evolve research coordination from a project function into a structural and scalable asset of the Foundation.

multicentre processes in a more coordinated way.

- **Consolidation of identity and post-PNC continuity**, capitalizing on results for a sustainable medium-to-long-term positioning.

P2 – Technology Transfer

The technology-transfer pillar was oriented towards fostering the enhancement of research results and dialogue between the academic, clinical and industrial worlds. Within the PNC Initiative, the Foundation is operating mainly as an institutional bridge between research and the market, supporting enhancement initiatives developed by the Spokes and partners. This experience clearly highlighted the Foundation's potential in facilitating the transfer of scientific results, in particular in creating connections, enabling processes and promoting a shared vision among the various actors of the ecosystem. In parallel, the awareness consolidated that the move from research to innovation requires structured models and dedicated tools, as well as strategic oversight of the regulatory, industrial and entrepreneurial dimensions — key elements for the evolution of the Foundation's role in the next strategic cycle.

LESSON LEARNED

- **Structure market access**, valorizing regulatory compliance as a quality lever.
- **Strengthen the bridge between research and industry** to increase the economic impact of innovation.
- **Define a stable model of transfer and entrepreneurship** to support industrial scalability.

FUTURE PERSPECTIVES

Structure technology transfer as a continuous function accompanying research through to application.

P3 – Research Infrastructures and Social Innovation

The Research Infrastructure was conceived as a distributed network of laboratories, platforms and assets made available by the D³4Health partners. In this context, the Foundation played a role of coordinating and networking resources, fostering collaboration among actors with different skills, specializations and maturity levels. The first *Joint Lab* and *Open Lab* experiences on specific use cases will make it possible to test models of advanced collaboration among research, technology and the clinical sphere, highlighting the potential of the research infrastructure as an enabling element. The experience also provided useful indications on the need to strengthen the homogeneity of organizational and coordination models, in order to make the infrastructure more efficient, scalable and more impact-oriented in the medium term.

LESSON LEARNED

- **Build a unified value proposition for the infrastructure**, overcoming the heterogeneity of the nodes.
- **Make governance and access methods homogeneous**, strengthening openness and external attractiveness.
- **Enable more structured experimentation models**, compatible with ethical-regulatory

FUTURE PERSPECTIVES

Transform the infrastructure from a network of assets into an operational and recognizable platform of experimentation and impact.

requirements.

- **Make the social impact generated by the infrastructure explicit and measurable.**

P4 – Training, Brand Awareness, Dissemination and Stakeholder Engagement

Training, brand awareness, dissemination and stakeholder engagement were developed as strongly interconnected areas, in support of the growth and visibility of the D³4Health ecosystem. The Foundation built an articulated offering of training and dissemination initiatives, accompanied by participation in scientific and institutional events and by the oversight of communication channels, helping to strengthen the Foundation's recognizability and to consolidate the existing partnership — composed mainly of universities, IRCCS, research bodies and first private actors. This path made it possible to build a solid base of content, relationships and communication tools, strengthening the Foundation's identity at national level. The evolution of the context and of strategic ambitions brought out the need to broaden and diversify the stakeholder network, adopting a more targeted and strategic approach to communication and engagement, consistent with the positioning the Foundation intends to assume in the post-PNC phase.

LESSON LEARNED

- **Integrate currently interconnected areas into a single strategic function**, overcoming operational fragmentation.
- **Evolve from a PNC focus to a stable positioning of the Foundation** as a system reference point.
- **Broaden and structure stakeholder engagement**, strengthening attractiveness towards private and industrial actors.

FUTURE PERSPECTIVES

Evolve training, communication, dissemination and stakeholder-engagement activities into an integrated function of positioning, community-building and attraction for the D³4Health ecosystem.

P5 – Sustainability

Sustainability is defined as a cross-cutting pillar of the action of the D³4Health Foundation, declined in its environmental, social, ethical and governance dimensions. In this phase, the Foundation progressively adopted fundamental safeguards and tools, such as application of the DNSH principle, integration of ESG criteria, updating of the Code of Ethics, maintenance of the “Model 231”, and monitoring of the Gender Equality and Inclusion Plans. The path undertaken made it possible to consolidate a solid governance and compliance framework, creating the basis for a structured approach to sustainability. At the same time, the experience gained reinforced the awareness of the opportunity to evolve sustainability from a predominantly regulatory dimension into a strategic positioning lever, capable of guiding the Foundation's choices and generating value in the new operating context of the coming three-year period.

LESSON LEARNED

- **Evolve sustainability from a compliance area into an integrated strategic lever** of the Foundation's action.
- **Valorize sustainability as an element of positioning and trust**, towards institutional stakeholders and private partners.

FUTURE PERSPECTIVES

Evolve sustainability from a compliance requirement into a strategic lever of positioning, reputation and system trust.

- **Make impact generation systematic and measurable**, in social, ethical and responsible-innovation terms.

Taken together, the five strategic pillars allowed the D³4Health Foundation to structure and consolidate its role within the PNC Initiative, developing a solid and recognizable operating model. The lessons learned in this phase today constitute a fundamental strategic asset that guides the evolution of the Foundation towards a medium-to-long-term perspective, founded on greater integration, effectiveness and sustainability in the post-PNC phase.

Section 3: The Reference Framework

P-E-S-T-L-E Scenario

The analysis of the reference framework was developed using the PESTLE approach and aims to outline, in a structured way, the main POLITICAL, ECONOMIC, SOCIAL, TECHNOLOGICAL, LEGAL and ENVIRONMENTAL factors that influence the adoption and diffusion of Data-Driven Health solutions, as well as the development of the Foundation's short- and medium-term strategies.

The figure below provides a summary of the main areas of analysis, which are explored in detail for each pillar. The individual pillars are examined in depth in Annex 1.

	OPPORTUNITY / STRENGTH	CONSTRAINT / RISK
	● Strong European strategic direction on the digitalization of healthcare, with common initiatives (EHDS, AI Act) that recognize digital health as a system lever.	● Persistent fragmentation among Member States that limits the alignment of policies, procurement processes and the scalability of solutions.
	● Widespread recognition of the economic value of digital health, in terms of operational efficiency, productivity and sustainability of healthcare systems.	● Misalignment between long-term benefits and short-term financial constraints, with reimbursement and financing models that are still poorly adaptive.
	● Positive impact on the quality of healthcare work and on patient involvement, with perceived improvements in engagement and satisfaction.	● Limited organizational readiness and risk of a digital divide, linked to digital skills, workload and inclusiveness.
	● Availability of mature and high-potential technologies, in particular AI, advanced EHRs and virtual-care solutions.	● Interoperability and system integration as the main bottleneck, due to legacy infrastructures and heterogeneous standards.
	● Solid and protection-oriented European regulatory framework, which strengthens trust and security in digital health.	● High regulatory complexity and non-uniform national applications, which slow innovation and scalability, especially for SMEs and innovators.
	● Strategic contribution of digital health to sustainability objectives, thanks to telemedicine, dematerialization, reduced travel and reduced animal testing.	● Still-emerging environmental dimension, not yet fully integrated into the strategies of vendors and healthcare systems.

The Reference Market

The European Digital Health market is at the beginning of a phase of structural transformation that goes beyond the logic of incremental innovation and is shaping up as a process of systemic infrastructuring of healthcare systems. A market in which Artificial Intelligence emerges as a cross-

cutting enabler of digital transformation — as demonstrated by the figure that 94% of healthcare providers are adopting or planning to adopt AI solutions, with main use cases including clinical decision support, early diagnosis, patient engagement and remote monitoring. The market's influence on the Foundation's activities is undoubtedly central; details on this are provided in Annex 1.

The European Benchmark

At European level, poles of excellence have consolidated which adopt organizational models oriented towards integration among research, enterprise and healthcare systems, with a key role in technology transfer, support for the growth of innovative companies and the international positioning of local ecosystems. The comparative analysis examined reference models consistent with the Foundation's purposes, such as Medical Valley EMN e.V., Parisanté Campus, the Barcelona and Madrid Health Hub, and Lyonbiopôle Auvergne-Rhône-Alpes; the related details are provided in Annex 1.

Strengths, Weaknesses, Opportunities, Threats (S.W.O.T.)

The SWOT analysis is a tool for synthesizing and strategically reading the current positioning of the D³4Health Foundation, useful for highlighting the main internal and external factors that influence its evolution in the 2026–2028 period. The analysis integrates contextual elements, consolidated assets and areas for improvement that emerged in the first three years of activity, relating internal strengths and critical points to the opportunities and risks of the reference scenario. The SWOT therefore constitutes the interpretative basis on which the Plan's subsequent strategic lines are grafted, guiding the development, consolidation and transformation choices of the Foundation in the post-PNC phase.

S – STRENGTHS • Information assets and data availability • Plurality of “souls” and skills as an enabling factor for innovation • Highly qualified expertise on specific topics • Institutional governance model and high-profile partner network • Open Lab and Use Case: pillars of applied innovation • Innovative, distinctive and qualified training offering • Identity, Brand, Governance and Visibility • Structured commitment to sustainability and organizational responsibility • Lean and flexible structure	W – WEAKNESSES • “Silo”-based approach • Difficulty of integration, operational fragmentation and poor interoperability • Gaps in stakeholder engagement due to a lack of dedicated resources • Difficulty in operationally overseeing the strategic lines • Absence of formal activity-attestation and certification systems • International presence: critical points and impacts on positioning • Complexity in Research Coordination within multi-actor ecosystems • Uncertainty over economic-financial sustainability in the post-PNC period
O – OPPORTUNITIES • Positioning the Foundation as an enabler of university technology transfer • Underdeveloped entrepreneurship for university technology transfer • Growing attention to well-being, sustainability and socio-economic impact • Joint Labs and Open Labs as aggregators of research activities • Certification of training activities • Low-cost support for start-ups • International partnerships • Revision of the strategic model	T – THREATS • Legal-regulatory uncertainty and inconsistency with legal structures • Typically Italian criticality in transferring research to the market • Difficulty integrating with Ethics Committees and Scientific Societies • Regulatory pressure on research in AI and digital health • Structural lengthening of time-to-market for innovative solutions • Reduced competitiveness vs. more mature foreign ecosystems • Sustainability of complex, high-tech-intensity research infrastructures • Limited interoperability and transnational operation of Joint Labs • Growing reputational competition and risk of positioning dispersion

Strengths

The D³4Health Foundation rests on a set of distinctive assets that strengthen its role as an enabler of innovation in the health sector. The availability of a broad and qualified body of information, combined with highly specialized scientific and technological expertise, makes it possible to develop and validate advanced solutions in highly complex domains. The plurality of skills present in the network — clinical, academic, technological and managerial — fosters interdisciplinary approaches and accelerates the transfer of research results into concrete applications. This positioning is further reinforced by a solid institutional governance model, a high-profile partner network and the valorization of tools such as *Open Lab* and *Joint Lab*, which allow applied experimentation, risk reduction and greater proximity to the real-world context. The distinctive training offering, the care for identity and brand, and the structured commitment to sustainability and organizational responsibility complete an overall profile characterized by credibility, authoritativeness and the capacity for systemic integration.

Weaknesses

The internal analysis highlights some areas of complexity that reflect the articulated, multi-actor nature of the ecosystem in which the Foundation operates. In particular, the coexistence of heterogeneous systems, processes and skills makes it necessary to further strengthen integration and interoperability

mechanisms, in order to overcome residual organizational and technological silo-based approaches. The operational oversight of the strategic lines and stakeholder engagement require greater structuring, both in terms of dedicated resources and of coordination and monitoring tools. Further areas of evolution concern the formalization of attestation and certification systems for research and training activities, useful for strengthening their external recognition. The international presence, although started, requires more systematic and continuous positioning. Finally, the transition to the post-PNC phase makes it strategic to define a stable and diversified economic-financial model, consistent with the evolution of the Foundation's role and institutional ambitions.

Opportunities

The reference context offers significant opportunities for the consolidation and evolution of the Foundation over the coming three-year period. The structural need for support to university technology transfer and the enhancement of research, still poorly overseen in a systemic way, represents an area in which the Foundation can strengthen its role as an institutional enabler. The growing attention to themes such as sustainability, well-being and socio-economic impact helps to reinforce the legitimacy of models oriented to public value and social responsibility. In this framework, *Open Lab* and *Joint Lab* take shape as key tools to aggregate skills, foster applied experimentation and attract industrial and institutional partnerships. Support for start-ups and entrepreneurial initiatives, including at contained cost, further expands the potential for impact. The strengthening of international partnerships, the certification of training activities and an evolutionary revision of the overall strategic model constitute fundamental levers to broaden recognizability, attractiveness and the capacity to generate value in the medium-to-long term.

Threats

The Foundation's action takes place in an external scenario characterized by high complexity and by factors of uncertainty that require constant strategic oversight. The evolution of the European and national legal-regulatory framework, in particular in the field of AI and Digital Health, can significantly affect the timing of validation, certification and market access for innovative solutions. The structurally long timeframes for transferring research into operational applications represent a competitive risk factor, especially compared with more mature and better-capitalized international ecosystems. The long-term sustainability of complex, high-tech-intensity research infrastructures requires solid and continuous financial and organizational models. To this are added the risks linked to growing reputational competition, the need to maintain a clear and distinctive positioning, and the continuity of stakeholder engagement. These factors make it strategic to strengthen governance, communication and sustainability models in the post-PNC phase.

Section 4: Strategic Objectives

Positioning of the Foundation

The D³4Health Foundation develops its positioning as a data-driven research and innovation platform, focused on technological infrastructures, advanced sensor technology and digital-twin models applied to healthcare.

This specialization will allow the Foundation to generate value along the entire research chain, transforming complex data into strategic assets for clinical experimentation, predictive modelling and decision-support processes.

In the short term, the Foundation operates in a phase of study and validation of its positioning, aimed at identifying high-potential areas of intervention and at defining a role of integration and enablement vis-à-vis other research bodies and foundations.

In the medium-to-long term, the strengthening of the pillars will make it possible to develop new project-based areas of action, attract public-private partnerships and support sustainable technology-transfer models.

This positioning allows D³4Health to evolve as a reference hub for data-based healthcare innovation, with a measurable impact in terms of scalability, interoperability and return on scientific and social investment.

Strategic Lines

The 2022–2025 period represented for the Foundation a phase of launch and construction, characterized by the operational deployment of the D³4Health Initiative, the activation of research infrastructures and the structuring of governance processes. As the conclusion of the PNC programme approaches, the Foundation now enters a phase of maturation and consolidation, in which the definition of a sustainable medium-to-long-term development model becomes central.

From this perspective, the 2026–2028 Strategic Plan sets out to strengthen the Foundation's institutional positioning, enhance the investments already made and maximize the scientific, economic and social impact of the activities carried out in collaboration with the members, ensuring the continuity and evolution of the project even beyond the extraordinary-funding phase.

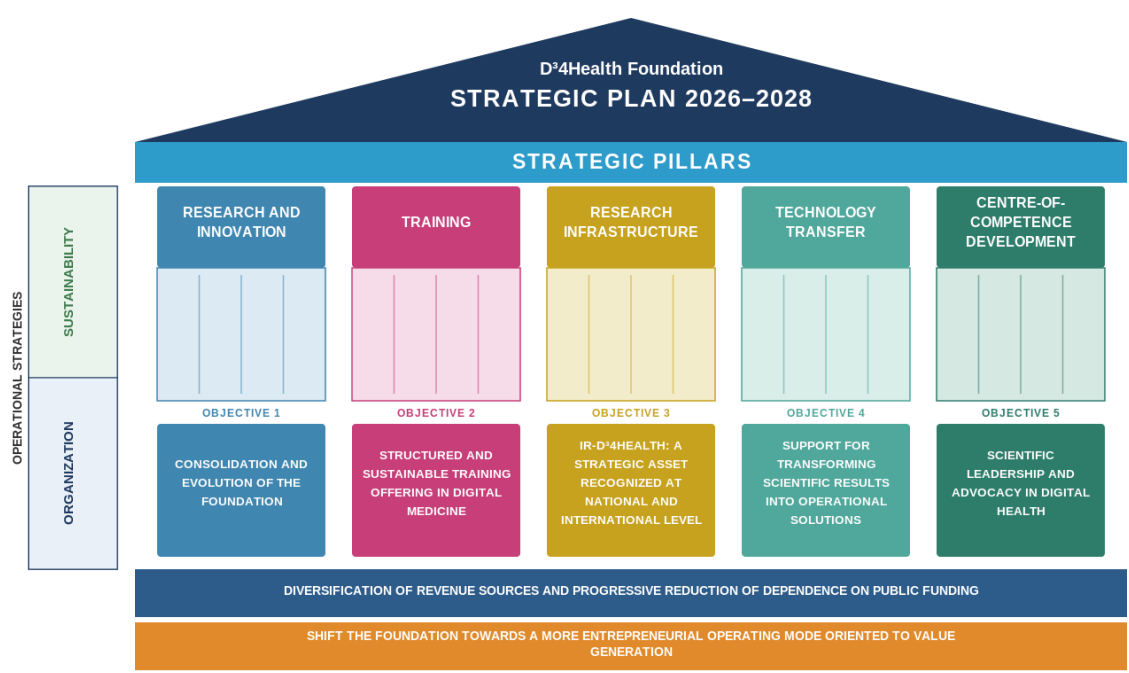
This structure of the Strategic Plan was developed according to the logic of the Balanced Scorecard, with the aim of ensuring an integrated and consistent reading of the Foundation's strategic priorities and of their operational translation over the medium-to-long term.

The adopted model articulates the strategy along key strategic areas (Research and Innovation, Training, Research Infrastructure, Technology Transfer and Centre-of-Competence Development), which represent the fundamental lines through which the Foundation pursues its mandate. These areas, defined as "Pillars", rest on well-defined objectives that translate the Foundation's mission into a structured path of growth, integration and impact for the reference ecosystem.

Further attention is dedicated to the dimension of the operational strategies deployed to achieve the aforementioned objectives — understood as the set of actions, tools and cross-cutting initiatives through which the Pillars and strategic objectives are translated into measurable, sustainable and

progressively implementable interventions, ensuring consistency among vision, strategic choices, organizational capacity and value generation over the medium-to-long term. This approach allows the Foundation to equip itself with a clear, measurable and action-oriented strategic-governance tool.

Consistent with the 2026–2028 Strategic Plan, the Foundation's strategic objective is the construction of an integrated and sustainable model that strengthens its role as a national reference point for research, innovation and technology transfer in the health field. This objective is grounded in the valorization of the investments made, the integration among research, infrastructures and skills, and the strengthening of collaboration among institutions, companies and the research world, with the ultimate aim of maximizing the scientific, social and economic impact of the Foundation's activities over the medium-to-long term.

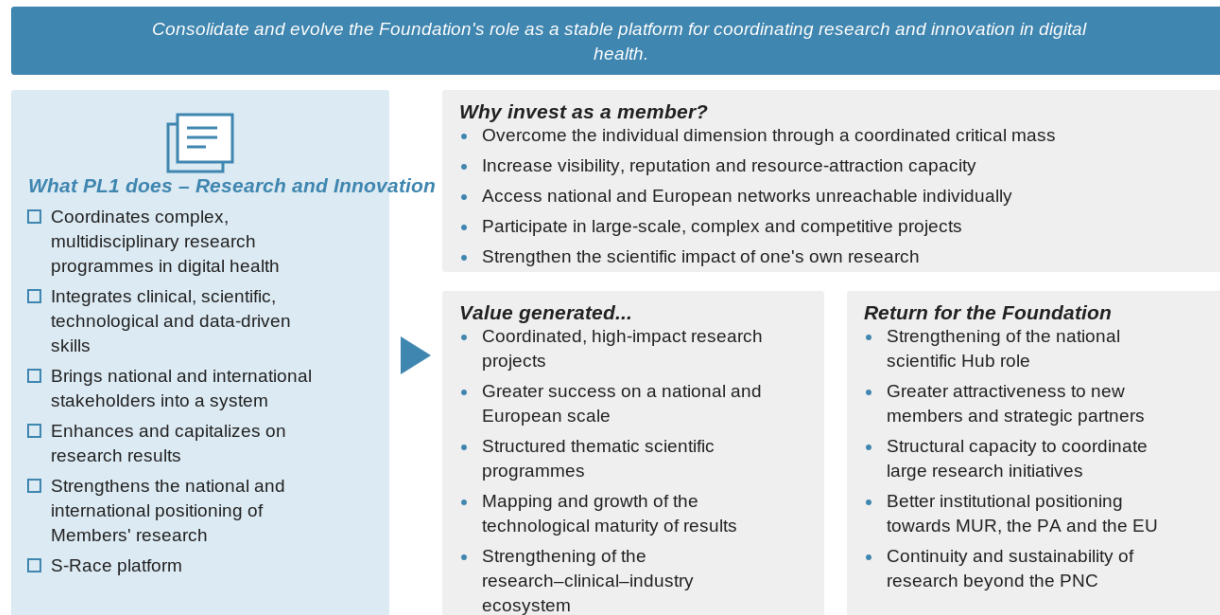


The 2026–2028 Strategy: Strategic Areas, Strategic and Operational Objectives, and Actions

The 2026–2028 Strategic Plan articulates the action of the D³4Health Foundation along five Strategic Pillars, which act as drivers through which the Foundation pursues its institutional mandate and builds an integrated and sustainable ecosystem for the health sector. Each Pillar is declined into strategic objectives, operational objectives and concrete actions.

The strategic Pillars are accompanied by two cross-cutting Operational Strategies: Sustainability and Organization; these strategies ensure the enabling conditions for achieving the medium-to-long-term objectives. In Phase 2, a monitoring plan will be defined for each strategic pillar, accompanied by an assessment of the necessary economic and personnel resources.

PL1 – Research and Innovation



The Research and Innovation Pillar represents the identity foundation of the D³4Health Foundation and the main engine of scientific, institutional and systemic value creation over the medium-to-long term.

For members, being part of the Foundation represents a strategic opportunity to overcome the limits of an individual dimension and operate within a structured, authoritative and recognizable network, capable of expressing a critical mass adequate to the challenges of contemporary research and innovation. The Foundation acts as an aggregating and coordinating body, systematizing the skills, networks and specializations of individual partners and creating a shared heritage of knowledge, infrastructures and human resources. This approach makes it possible to fully valorize the multidisciplinary of researchers, fostering the construction of complex, high-impact project initiatives that would be difficult for a single research institute to carry out independently.

Aggregation produces a multiplier effect on networking capacity: through the Foundation, partners gain access to national and international networks and events to a far greater extent than they could individually. This results in an exponential growth of occasions for exchange, collaboration and visibility, with a direct impact on the dissemination of research results, which can rely on broader and more qualified channels, audiences and diffusion contexts.

This multiplier effect also allows partners to seize more effectively the opportunities offered by European and national research programmes, thanks to the possibility of coming into contact with a larger number of research partnerships under formation and of participating, consequently, in a greater number of calls, increasing the probability of accessing research funding and incentives. The Foundation is also an enabler of synergies among research centres, universities, companies and institutional actors, helping to strengthen and sustain research activities through shared project initiatives, complementarity of skills and optimization of resources. This model fosters a more solid and continuous presence in international contexts, increasing the overall visibility of the system and its capacity to attract foreign partners, both scientific and industrial, creating the conditions to become a specialist scientific Hub of reference at national and international level.

For the development of the activities envisaged under the Research and Innovation Pillar, the Foundation will make the best use of the experience and skills gained over the three years of managing the activities of the Hub and the Spokes, taking on the direct coordination of the envisaged actions and drawing on external consultants for specialist support activities.

Being part of the D³4Health Foundation means multiplying the value of one's scientific, institutional and strategic excellence, operating in an ecosystem capable of transforming individual skills into systemic impact.

PL 1.1 – Enhancement of the results and of the PNC initiative

This operational objective aims to ensure the scientific completion and the maximization of the value generated by the PNC initiative by its natural conclusion in November 2026, and to capitalize on the results for the following three-year period. The main planned actions are:

PL 1.1.1 Scientific coordination of the activities of the PNC D³4Health initiative.

PL 1.1.2 Study of the impact and efficiency of research models; assessment and finalization of PNC results.

PL 1.1.3 Activation of new partnerships with external bodies: companies, international universities, IRCCS.

PL 1.1.4 Structured research programmes for target thematic areas: *Digital Twin*, AI, wearables, synthetic biology.

PL 1.1.5 Development of collaboration agreements with international universities and research centres.

PL 1.1.6 Establishment of partnerships with the industrial sector and third-sector bodies for clinical applications.

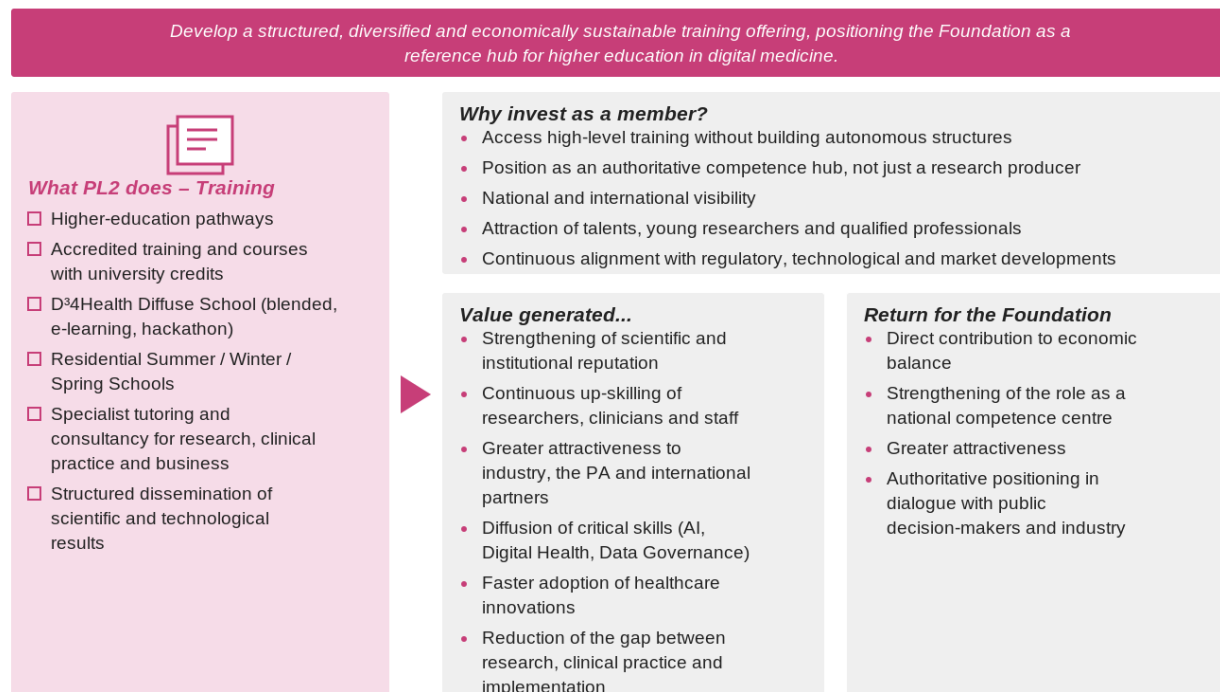
PL 1.2 – Networking and coordination for the submission of new research activities

This operational objective is aimed at broadening research-funding sources and at positioning the Foundation as a proposing body or qualified partner in competitive national and European projects. The planned actions include:

PL 1.2.1 Scouting at national and European level to identify new calls and funds.

PL 1.2.2 Participation in competitive European calls as a partner or lead applicant.

PL2 – Training



Training activities represent a strategic pillar of the Foundation's action, as they contribute directly to the development of human capital, the enhancement of scientific and professional skills, and the diffusion of research and innovation results within the reference ecosystem.

The training activities promoted by the Foundation allow members to valorize and disseminate their scientific, technological and professional know-how in a structured way, to strengthen and update specialist and advanced skills, to increase scientific and institutional visibility at national and international level, and to contribute actively to the qualification of professionals, researchers and young talents. At the same time, these initiatives foster an effective transfer of knowledge from research to applied practice and to the production system, stimulate the creation of new synergies and project collaborations, broaden qualified networking opportunities, and strengthen members' ability to attract skills, resources and strategic opportunities for development and innovation.

For the Foundation, in turn, training activities represent a fundamental strategic asset for consolidating its role as a reference point in advanced training, skills qualification and the transfer of knowledge and technology. Through a structured and qualified training offering, the Foundation strengthens its scientific and institutional authoritativeness, positioning itself as a credible and recognized interlocutor for research bodies, universities, companies and public decision-makers.

These initiatives contribute significantly to increasing the Foundation's reputation and visibility at national and international level, fostering its capacity to attract qualified stakeholders, scientific and industrial partners, and high-profile teachers and experts. At the same time, training activities constitute an effective tool for disseminating and enhancing research results, strengthening the link between scientific production, practical application and impact on the socio-economic system.

Taken as a whole, training activities allow the Foundation to generate a lasting scientific, professional and social impact, promoting the growth of human capital, innovation and the competitiveness of the system, and consolidating its role as a reference hub for training, research and knowledge transfer.

For the development of the activities envisaged under the Training Pillar, the Foundation will directly oversee the coordination of the envisaged actions, drawing on the teachers and researchers of the partner RIs and/or on external and/or international teachers depending on the skills that may be required. The Foundation may make use of external consultants for technical and organizational support activities.

Through Training, the Foundation valorizes the human capital of its Members, strengthening their positioning, reputation and capacity to generate a lasting scientific, professional and social impact.

PL 2.1 – Higher-education pathways

The objective is to structure a broad and accessible training offering, aimed at healthcare professionals, researchers, students and companies. Concrete actions include:

PL 2.1.1 D³4Health Diffuse School: a blended e-learning programme and in-person laboratories with Hackathons.

PL 2.1.2 Tutoring and consultancy on specific topics: Digital Health, Privacy, AI, intellectual property.

PL 2.1.3 Activation of a catalogue of ECM-certified training services and services with university credits for external parties.

PL 2.1.4 Orientation courses for high-school and university students; open webinars for start-ups.

PL 2.2 – Courses for Research Doctorates (PhDs)

The Foundation proposes itself as a coordinating body for doctoral pathways, including industrial doctorates in collaboration with the companies of the network, managing the related training obligations through its own e-learning platform.

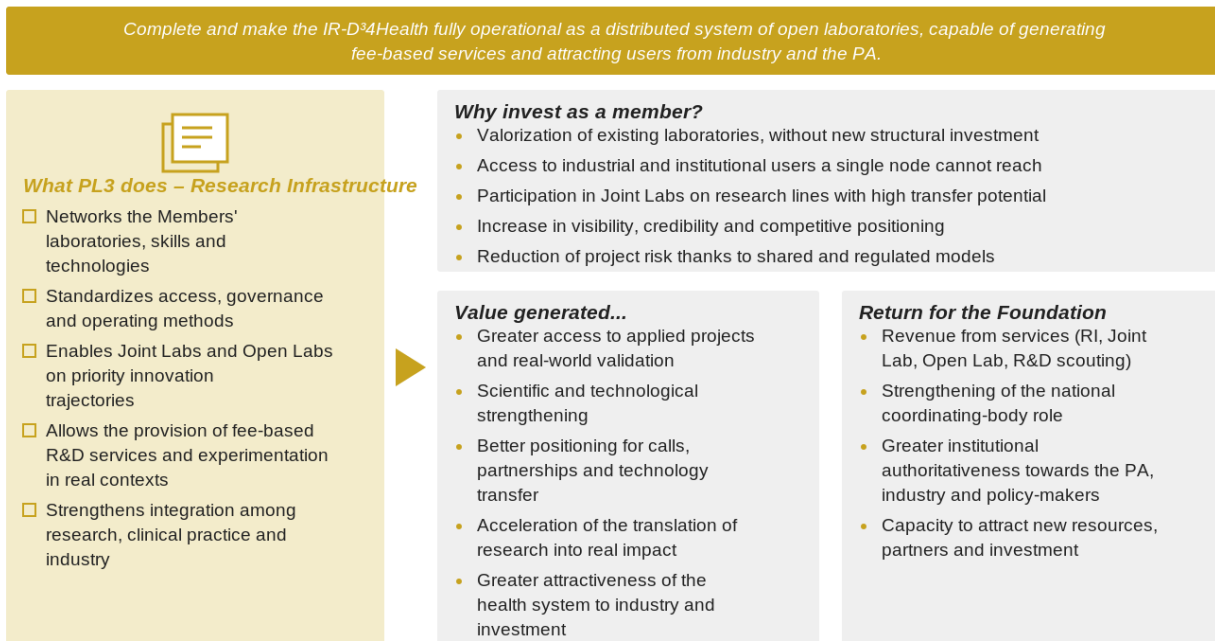
PL 2.2.1 Doctoral pathways in collaboration with the companies of the network (industrial doctorates).

PL 2.3 – Summer / Winter / Spring School

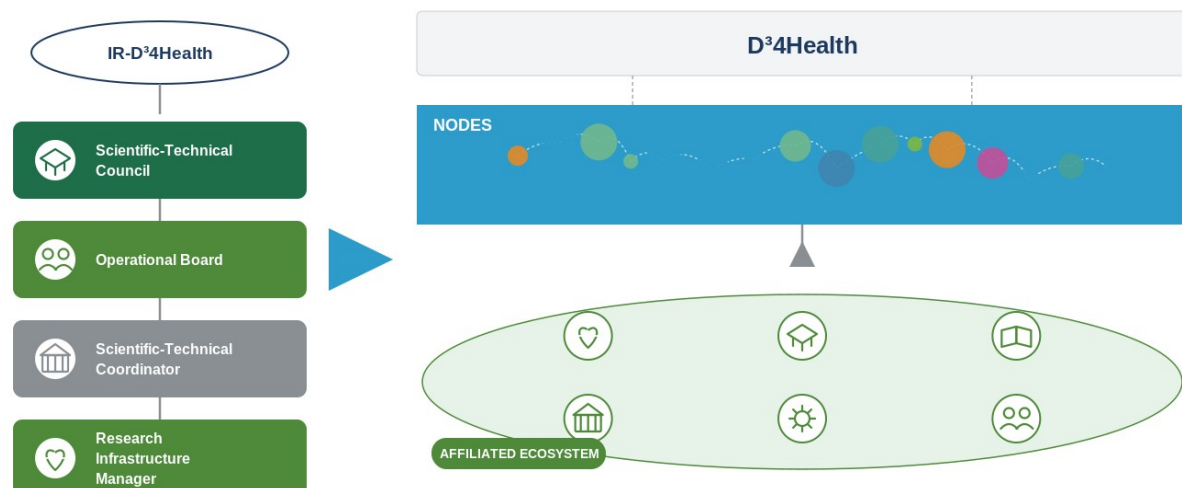
Consolidation and expansion of the multi-day format with ECM accreditation already launched with the Summer and Spring Schools, with the aim of adding from 2027 a Winter School with a broader thematic scope.

PL 2.3.1 Summer, Winter, Spring School: a multi-day residential format with ECM accreditation.

PL3 – Research Infrastructure



The third Pillar is oriented towards completing and making fully operational the IR-D³4Health research infrastructure as a distributed system of open laboratories, capable of generating fee-based services and attracting users from industry and the public administration. At the start of the 2026–2028 Strategic Plan, the IR-D³4Health presents itself as an infrastructure that is already largely established and at an advanced stage of commissioning, with a significant share of fully operational nodes. The three-year period represents a key phase of consolidation and rationalization: the aim is to complete the formal-accession processes of the nodes, strengthen the homogeneity of the operating models and increase the level of operational integration among the various actors.



From a tangible standpoint, participation in the IR-D³4Health allows the Foundation's partners to systematize and valorize infrastructures, skills and technologies already available, offering advanced fee-based services to companies and the Public Administration. The greater critical mass and the growing recognizability of the infrastructure will also foster the attraction of new industrial and

institutional users, difficult to intercept on an individual basis, while at the same time broadening opportunities for applied collaboration and technology transfer. This translates into concrete effects in terms of economic resources, project development and greater sustainability of research activities.

Alongside these aspects, the infrastructure also generates significant benefits on the intangible level. The IR-D³4Health helps to significantly strengthen the positioning of partners, increasing their scientific and technological visibility within an already structured and recognized national and international context. At the same time, it fosters a higher level of operational and methodological integration among the nodes, with positive effects on the quality of services, the standardization of processes and the overall reliability of the system.

As a whole, the Third Pillar therefore represents for the members a multiplier of opportunities, capable of transforming the existing heritage of skills and infrastructures into a shared and fully operational asset, able to generate economic, scientific and strategic value over the medium-to-long term.

For the Foundation, the Third Pillar represents a central and structuring element of the consolidation and development strategy, significantly strengthening its role as coordinating body and enabler of the IR-D³4Health ecosystem. From a tangible standpoint, the completion of the infrastructure will allow the Foundation to evolve towards a sustainable model of service provision, capable of generating revenues in support of institutional and research activities. At the same time, the strengthening of the IR-D³4Health will increase the capacity to attract external resources, industrial and public users, and new investment opportunities, improving the overall efficiency of the system through shared operating models, homogeneous processes and a more structured governance.

On the intangible and strategic level, the IR-D³4Health will strengthen the Foundation's institutional authoritativeness and increase its capacity to engage with industry, the Public Administration and policy-makers, while valorizing its role of coordination and strategic direction. In this context, the Foundation is able to ensure consistency, operational integration and a long-term vision for the entire system of nodes, fostering harmonious and shared growth. As a whole, the Third Pillar will allow the Foundation to complete the transition of the IR-D³4Health from an infrastructure under construction to a fully operational, recognized and attractive system, capable of generating a lasting scientific, economic and social impact and of sustaining the institutional mission and the development of the entire network over time.

For the development of activities related to the management of the research infrastructure, the Foundation will coordinate, with its own staff, the activities relating to the completion of the mapping and networking of the infrastructure and its subsequent management, drawing on the specialists belonging to the Foundation's partner RIs for the provision of specialist services and on any external consultancy for legal/administrative activities (e.g. intellectual-property protection) or for services linked to the operational management of the digital infrastructure.

IR-D³4Health multiplies the value of the Members' infrastructures, transforming them from isolated resources into an operational, attractive and sustainable system.

PL 3.1 – Strengthening the use of laboratories: IR-D³4Health Nodes

This operational objective aims to make the IR Nodes accessible and recognizable to companies, start-ups and researchers. Planned actions include:

PL 3.1.1 Completion of node and laboratory mapping; activation of the IR web platform with a search engine.

PL 3.1.2 Integrated scouting service and R&D offering for internal and external users.

PL 3.1.3 Promotion and activation of access to the RI for companies and third parties.

PL 3.2 – Networked operation of the Nodes

To ensure consistency and interoperability among the Nodes, the drafting of standard inter-node cooperation protocols and the adoption of a shared digital platform for managing bookings, datasets and scientific communication are envisaged.

PL 3.2.1 Creation of common inter-node collaboration protocols.

PL 3.2.2 Purchase / development of a digital platform for cooperation among the Nodes.

PL 3.3 – Thematic Joint Labs, Open Labs and intellectual-property management

This operational objective envisages strengthening the two thematic *Joint Labs* launched in 2026 on *Digital Twin* for oncology and AI for diagnostic imaging, establishing three new thematic *Joint Labs* and activating five *Open Labs* interconnected with patient associations and research foundations — one for each clinical use case of the Initiative. A system to support patenting activities and the management of the intellectual property generated by the network is also envisaged.

The strengthening and full operation of the IR-D³4Health are set to generate a tangible and measurable impact on applied research, offering concrete solutions for reducing the fragmentation of the system and translating innovation into value for public health. The infrastructure takes shape as a key tool for realizing the D³4Health Vision, ensuring continuity, effectiveness and sustainability for the Foundation's action even beyond the extraordinary-funding phase. Through openness to new partners and the capacity to attract national and European collaborations, the Foundation will be able to consolidate its role as national Hub and accelerator of innovation in the digital-health sector.

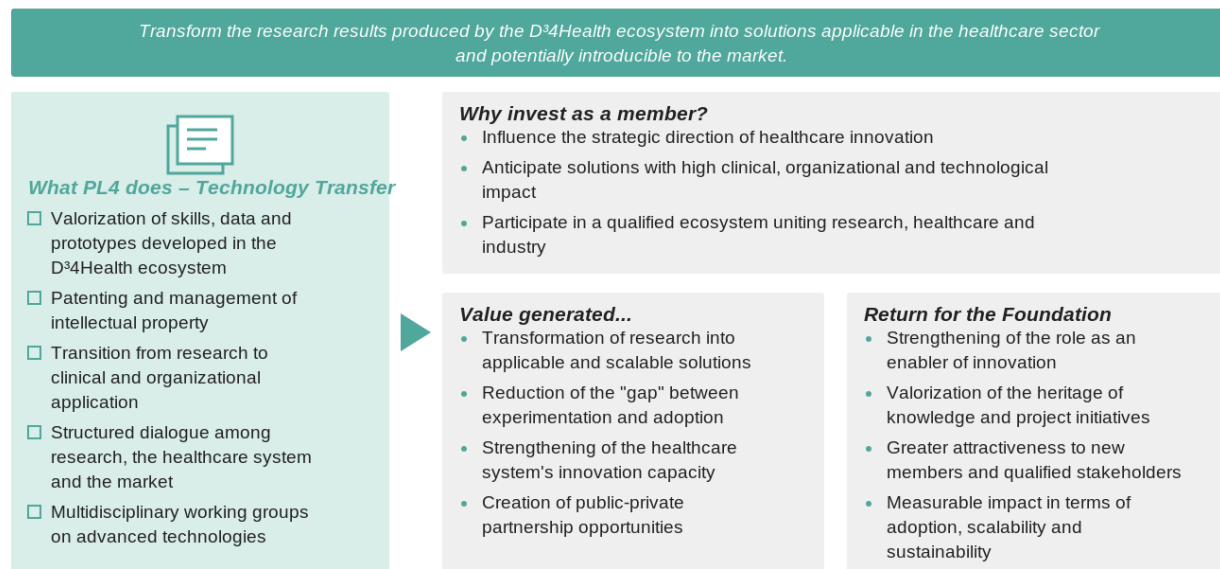
PL 3.3.1 Definition of intellectual-property regulations and collaboration agreements within the *Joint Labs*.

PL 3.3.2 Strengthening of the existing *Joint Labs* and establishment of 3 new thematic *Joint Labs* on specific innovation lines.

PL 3.3.3 Support for the management of the intellectual property generated by partners; support for patenting activities.

PL 3.3.4 Activation of 5 thematic *Open Labs* interconnected with patient associations and research foundations.

PL4 – Technology Transfer



The fourth Pillar has the objective of transforming the research results produced by the D³4Health ecosystem into solutions that are applicable in the healthcare sector and potentially introducible to the market.

For members, technology-transfer activity is a fundamental strategic tool for accompanying research results towards concrete applications and solutions that are genuinely usable in the healthcare sector, with potential for market introduction. Thanks to structured and continuous support for reaching high levels of technological maturity (TRL) and for the complex processes of regulatory validation, members have the possibility to systematically valorize their scientific heritage, reducing the distance between experimental research, applied experimentation and clinical use.

From a tangible standpoint, this approach translates into a significant broadening of the opportunities for the economic valorization of research, through the development of mature technologies and solutions ready for industrial or clinical adoption. Members can also benefit from facilitated access to patenting tools and structured intellectual-property management, in particular in the development pathways for wearable devices for remote patient monitoring. The transfer of research results to the market will be further facilitated by support for the creation and development of special-purpose companies (start-ups), which will be able to benefit from dedicated funding and services made available by the Foundation — including access to the laboratories of the research infrastructure, scientific tutoring and connection with qualified investor networks. This approach will make it possible to significantly reduce the time, costs and risks of the market-entry process.

Alongside these tangible benefits, the fourth Pillar also generates significant intangible advantages for members. Participation in inter-institutional Working Groups, dedicated to the evolution of the biological and clinical *Digital Twin* and to the coordinated development of advanced technological solutions, will strengthen members' capacity to operate in multidisciplinary and highly complex contexts. This collaborative model fosters the exchange of skills, alignment with the most advanced technological trajectories and the positioning of members as authoritative actors in healthcare innovation.

For the Foundation, Technology Transfer is a central element in realizing its mission of connecting research, innovation and concrete application. This path strengthens not only the overall impact of the activities carried out, but also the credibility of the Foundation as a body capable of translating scientific knowledge into concrete innovation for the healthcare system. From a tangible standpoint, technology-transfer activities allow the Foundation to generate income for its own self-sustainment and to support the emergence of solutions with high applicative potential. This increases the capacity to attract resources and create industrial partnerships, while contributing to the strengthening of the economic sustainability of institutional activities through the valorization of patents and the provision of advanced services.

Technology-transfer activities significantly strengthen the positioning and authoritativeness of the Foundation, consolidating its role as a reference body capable of guiding healthcare innovation, credibly connecting research and application, and promoting a shared strategic vision recognized by institutions, industry and the scientific community. Taken together, Technology Transfer activities allow the Foundation to transform the D³4Health ecosystem into a stable and recognizable engine of innovation, capable of generating a lasting scientific, economic and social impact and of sustaining over time the growth of members and the full achievement of institutional objectives.

For technology-transfer activities, the Foundation will manage, with its own staff, the coordination of partners in the activities of technical-regulatory validation, in the development of the biological and clinical *Digital Twin* and in the development of wearable devices. While maintaining the coordination of activities, it will draw on external consultants for specialist activities relating to support for entrepreneurship, start-ups and technology transfer.

D³4Health's Technology Transfer turns the Members' research into concrete innovation, reducing risk and multiplying scientific, economic and strategic value.

PL 4.1 – Support for reaching high TRLs and regulatory validation

For each mature solution (TRL above 5), a technical-regulatory validation roadmap is drawn up, and real-world clinical-experimentation protocols are launched, through the network's IRCCS, for the solutions closest to application.

PL 4.1.1 Valorization and transferability of research results: analysis of regulatory barriers and technical-regulatory pathways.

PL 4.1.2 Activation of structured pathways for software, clinical and regulatory validation through real-world experimentation.

PL 4.2 – Digital Twin, wearables and patents

Establishment of inter-institutional Working Groups for the evolution of the biological and clinical *Digital Twin*, and coordination of the development of wearable devices for remote patient monitoring. The data collected feed the *Digital Twin* models. The patenting of devices and the structured management of usage rights are envisaged.

PL 4.2.1 Establishment of inter-institutional Working Groups for the evolution of the biological and clinical *Digital Twin*.

PL 4.2.2 Development of remote-monitoring solutions based on wearables and sensor technology for remote medicine.

PL 4.2.3 Patenting of wearable devices and management of usage rights.

PL 4.3 – Support for entrepreneurship, start-ups and technology transfer

The Foundation dedicates a specific budget to supporting innovative start-ups oriented to digital medicine, offering access to the IR laboratories, scientific tutoring and introduction to investors. The following are also envisaged:

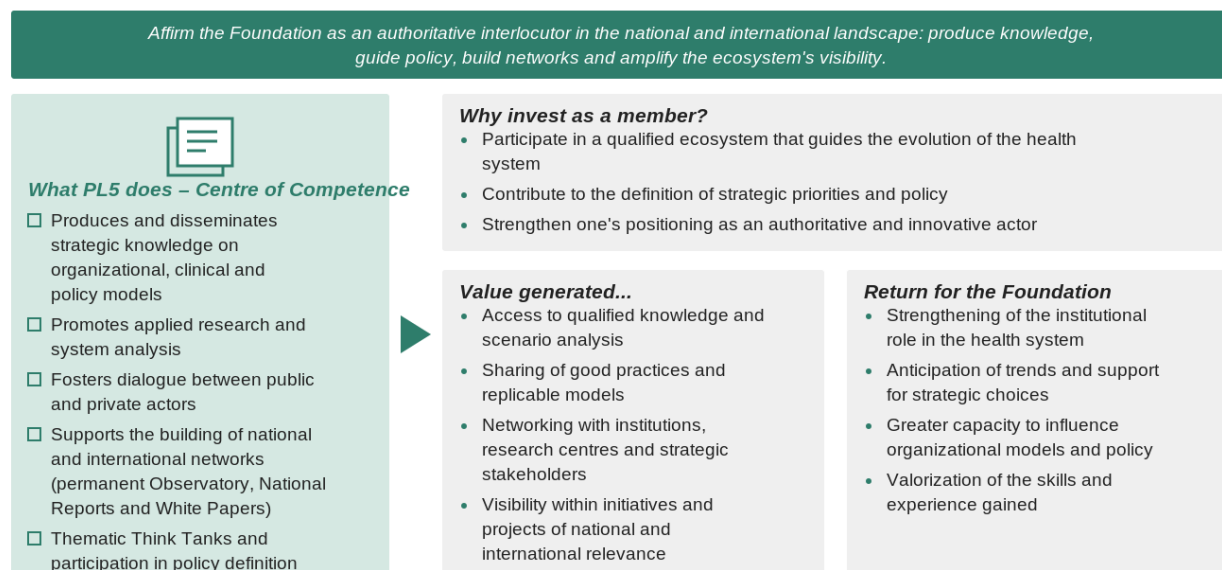
PL 4.3.1 Contributions to innovative start-ups oriented to medicine: support, co-development, possible spin-off.

PL 4.3.2 Development of a structured model for technology transfer from research to market (e.g. business plan for start-ups).

PL 4.3.3 Angel Investor initiatives and access to private financing for the ecosystem's start-ups.

PL 4.3.4 Participation in and organization of open-innovation events with the companies of the network.

PL5 – Centre of Competence



The fifth Pillar aims to affirm the Foundation as an authoritative interlocutor in the national and international landscape: producing knowledge, guiding policy, building networks and amplifying the visibility of the ecosystem.

The activities of the Centre of Competence offer members significant benefits on both the tangible and the intangible levels, strengthening their scientific and strategic positioning. Through the structured production of knowledge, the monitoring of innovation and digital medicine, and systematic scouting activities in the main European networks, members benefit from privileged access to strategic information, emerging technological trajectories and qualified collaboration opportunities. Participation in national and international networks formalized by the Foundation also amplifies the visibility of individual members, increasing occasions for networking, project initiatives and institutional recognition. On the intangible level, inclusion in an authoritative ecosystem allows members to contribute actively to the orientation of public policies.

For the Foundation, the establishment of a permanent Observatory on innovation — accompanied by the publication of an annual National Report, the production of open-access White Papers and the organization of thematic Think Tanks — allows the Foundation to affirm itself as a national reference

point for the analysis, strategic direction and governance of healthcare innovation. These initiatives strengthen the Foundation's institutional authoritativeness, broaden its capacity for dialogue with public decision-makers, industry, the scientific community and patient associations, and consolidate its role as a promoter of vision and strategic orientation.

On the intangible level, the positioning as a technical-scientific reference for legislators and public decision-makers allows the Foundation to contribute in a qualified way to the elaboration of healthcare policies, strengthening authoritativeness, advocacy capacity and systemic impact. At the same time, the construction and coordination of stable networks amplify the overall visibility of the ecosystem, strengthening the Foundation's reputation and its capacity to guide public debate and the development trajectories of innovation in the health field.

For the activities related to the development of the Centre of Competence, the Foundation will manage, with its own staff and with teachers and researchers belonging to the partner RIs, all the development activities relating to the actions of Pillar 5.

D³4Health's Centre of Competence gives Members vision, authoritativeness and influence: less chasing innovation, more guiding it.

PL 5.1 – National reference point on monitoring innovation and digital medicine

Establishment of a permanent Observatory on innovation, with the publication of an annual National Report, the production of open-access White Papers on key topics and the organization of thematic Think Tanks with institutional and industrial stakeholders and patient associations.

PL 5.1.1 Establishment of a permanent Observatory on innovation in the health field.

PL 5.1.2 Production and open-access dissemination of White Papers.

PL 5.1.3 Organization of thematic Think Tanks with institutional and industrial stakeholders and patient associations.

PL 5.2 – International partnership and entry into European networks

The Foundation has launched systematic scouting activities of the main European networks consistent with its mission and formalizes participation agreements, strengthening its institutional presence at international events and conferences, with quarterly monitoring.

PL 5.2.1 Scouting and formalization of agreements with European networks; participation in international events.

PL 5.3 – Reference point for legislators

The Foundation aspires to become a structured technical-scientific reference point for legislators and public decision-makers in health matters, leveraging the scientific evidence produced by the ecosystem to position itself as an accredited technical voice. To this end, formal dialogues are launched with Ministries and Central Administrations, with the aim of signing financial agreements consistent with the KPIs of Decree 398, with the possibility of hiring a specific dedicated figure.

PL 5.3.1 Become a structured technical-scientific reference point for legislators and public decision-makers in health matters.

PL 5.3.2 Sign financial agreements with Ministries and Central Administrations.

PL 5.4 – Development and implementation of a Communication and Image Plan

Continuation of the activities relating to the consolidation of the Foundation's brand identity through the support of a communication agency, accompanied by multichannel management of institutional

communication and a structured presence at selected events with dossiers and representation materials.

PL 5.4.1 Consolidation of the Foundation's brand identity and multichannel management of institutional communication.

PL 5.4.2 Participation in international events and conferences with a structured institutional presence.

PL 5.5 – Coordination and supervision of scientific dissemination

Creation and maintenance of an up-to-date database of all the scientific publications produced by the D³4Health ecosystem, in support of the structured dissemination of scientific results and the strengthening of the Foundation's reputation in the international academic community.

PL 5.5.1 Support for scientific publications and scientific-dissemination materials.

Cross-Cutting Operational Strategies

In parallel with the five strategic Pillars, the Plan identifies two cross-cutting Operational Strategies that constitute the enabling conditions for the sustainability and effectiveness of the Foundation's entire action.

Sustainability

The objective of this strategic line is to ensure the operational continuity and economic sustainability of the Foundation in the 2026–2028 period, through the diversification of income sources and rigorous oversight of regulatory obligations. The planned actions concern:

- Development of training revenue, with the activation of a fee-based training catalogue and the search for sponsors and co-funders;
- Development of membership fees, with a systematic plan for scouting and retaining members;
- Development of revenue from services (consultancy, RI access, technology transfer) through a structured fee schedule;
- Fundraising and participation in competitive calls, including a philanthropic-donations plan aimed at banking foundations and non-profit bodies;
- Monitoring and achievement of the KPIs of Decree 398, with a dedicated internal dashboard;
- Consolidation and expansion of ESG and governance compliance (ESG Plan, DNSH principle, Model 231, GDPR).

Organization

The strategic objective is to equip the Foundation with an organizational structure, a governance model and internal skills suited to the phase of growth and autonomy in the post-PNC period. The planned actions include:

- Legal analysis for the possible establishment of separate operating structures (spin-off / limited company) and the development of a structured business-development process;
- Matching of skills between internal supply and demand within the network, and the creation of a Foundation services catalogue;
- Strengthening and stabilization of the operational team over the three-year period, with an annual training plan on EU-project design, pitching and scientific communication;
- Revision and updating of the Statute to support the evolution of the Foundation in the post-PNC period;
- Structured stakeholder-engagement activities (workshops, round tables, networking) with members, partners, IRCCS and the Public Administration;
- Definition of financial agreements with central Administrations (ISS, AGENAS, Ministries) and accession to national networks and consortia of research foundations.

The strategic lines prepared, the operational objectives and the activities currently identified aim to design a trajectory of maturation and consolidation for the Foundation, in line with the ambition of becoming a permanent strategic infrastructure for research, innovation and technology transfer in the health field, while respecting the objectives of sustainability and organizational efficiency.

Expected Results and Benefits

This chapter illustrates the results and benefits expected from the implementation of the 2026–2028 Strategic Plan of the D³4Health Foundation, highlighting the foreseen impacts in terms of strengthening the research and innovation system in the health field. The programmed actions aim to generate concrete and measurable value for the stakeholders involved, fostering the growth of skills, technology transfer, the systematization of research infrastructures and the consolidation of the Foundation's role as a reference Hub at national and European level. From this perspective, the expected results represent not only an indicator of the Plan's effectiveness, but also a structural contribution to the sustainability, innovation and quality of the National Health Service.

A breakdown by individual strategic pillar follows.

PL1 – Research and Innovation PL 1.1 Enhancement of results and of the PNC initiative	Results and benefits for the D³4Health Foundation • Scientific completion of the PNC activities. • Structured mapping of research results with TRL classification and applicative potential. • Strengthening of technology-transfer capacity and patent valorization. • Activation of new stable national and international collaborations. • Definition of medium-to-long-term thematic research programmes (post-PNC). • Consolidation of the partnership's positioning as a reference scientific Hub. Benefits for the population (patients) • Acceleration of access to new diagnostic, therapeutic and preventive solutions. • Greater likelihood of clinical translation of research results. • Improvement in the quality and appropriateness of care. • Strengthening of personalized and precision medicine. • Indirect benefits in terms of equity of access to healthcare innovation. Benefits for the National Health Service (SSN) • Availability of validated innovations ready for adoption (medium-high TRL). • Evidence-based support for healthcare policies and clinical-care pathways. • Potential cost reduction through more effective and targeted solutions. • Better integration among research, clinical practice and health governance. • Strengthening of the role of IRCCS as a bridge between research and care. Benefits for universities and research centres • Alignment among the scientific agenda, clinical needs and industrial trajectories. • Strengthening of the national health-innovation ecosystem. • Greater socio-economic impact of public investment in research, of scientific networks and of international cooperation. • Greater attractiveness for talents, doctoral students and researchers. • Growth of skills in research design, management and valorization. • Better institutional positioning in priority research areas. Benefits for the business system (companies, start-ups, investors, territory) • Structured access to innovation pipelines already assessed for technological maturity. • Reduction of industrial risk thanks to scientifically consolidated results.
--	---

	• Opportunities for co-development and technology transfer. • Access to high-level scientific skills and research infrastructures. • Creation of new public–private partnership models. • Potential generation of patents, licences and high-value-added spin-offs.
PL1 – Research and Innovation PL 1.2 Networking and coordination for the submission of new research activities	Results and benefits for the D³4Health Foundation • Structured strengthening of EU- and national-project-design capacity. • Increase in the number and quality of proposals submitted to competitive calls. • Better positioning of the Foundation as lead applicant or strategic partner. • Exploitation of the IR Node network as a consortium-coordination infrastructure. • Diversification and expansion of research-funding sources. • Continuity and sustainability of research activities beyond the PNC/PNRR programmes. Benefits for the population (patients) • Increase in investment in research oriented to clinical and public-health needs. • Greater impact of European and national research policies on local needs. • Better access, in the medium term, to high-quality healthcare innovations. • Strengthening of the European dimension of research for the benefit of citizens. Benefits for the National Health Service (SSN) • Attraction of additional resources for clinical, translational and organizational research. • Alignment of project initiatives with European strategic programmes (Horizon Europe, EU4Health). • Greater interoperability and collaboration among healthcare and research facilities. • Support for the development of innovative, evidence-based care models. • Strengthening of the SSN's capacity to participate in international research networks. Benefits for universities and research centres • Facilitated access to specialist skills in scouting and project design. • Increase in the success rate in competitive national and European calls. • Strengthening of scientific networks and of the international dimension. • Greater visibility and scientific reputation at European level. • Opportunities to coordinate complex, multidisciplinary projects. • Growth of institutional skills in project management and networking. Benefits for companies (companies, start-ups, investors, territory) • New opportunities to participate in highly innovative collaborative projects. • Access to European funding programmes in partnership with research bodies. • Reduction of innovation risk thanks to co-financed projects. • Structured interaction with networks of scientific and clinical excellence. • Greater integration between public research and industrial development. • Strengthening of open-innovation and technological co-development trajectories.

PL2 – Training	Results and benefits for the D³4Health Foundation • Structuring of an integrated, flexible training offering accessible to different targets. • Strengthening of interdisciplinary skills in key areas (Digital Health, AI, Privacy, IP). • Diffusion of innovative training models (Diffuse School, e-learning, hackathon). • Integration among academic, professional and industrial training. • Increase in the skills needed to validate and valorize innovation. • Strengthening of the link among training, research and technology transfer. Benefits for the population (patients) • Improvement in the quality of care thanks to more qualified professionals. • Greater diffusion of digital and innovative skills in healthcare. • Safer and more effective adoption of technologies based on AI and health data. • Indirect benefits in terms of greater effectiveness, safety and appropriateness of care. • Strengthening of the culture of innovation and prevention in society. Benefits for the National Health Service (SSN) • Continuous updating of the skills of healthcare staff (ECM). • Better capacity to govern digital and technological innovation. • Strengthening of managerial and organizational skills in healthcare. • Support for the digital transformation of the SSN. • Reduction of regulatory, ethical and cybersecurity risks linked to new technologies. • Greater capacity to integrate clinical practice, data and emerging technologies. Benefits for universities and research centres • Expansion and qualification of the teaching and training offering. • Strengthening of the role of universities as central actors in innovation. • Better alignment among training, research and the needs of the healthcare system. • Greater attractiveness for students, doctoral candidates and young researchers. • Development of cross-cutting skills useful for research design and valorization. • Opportunities to experiment with innovative and interdisciplinary teaching models. Benefits for companies (companies, start-ups, investors, territory) • Access to professionals with updated and specialist skills. • Strengthening of collaboration with the academic and healthcare worlds. • Support for the development and validation of innovative solutions. • Better management of regulatory, privacy and intellectual-property aspects. • Opportunities to scout talents, start-ups and high-potential projects. • Stimulus for open-innovation and co-creation pathways.
PL3 – Research Infrastructure	Results and benefits for the D³4Health Foundation • Full operation of the IR-D³4Health infrastructure as a distributed network of open laboratories.

	• Increase in the use of laboratories by companies, the Public Administration and researchers. • Standardization and interoperability of research services. • Activation of fee-based R&D services and strengthening of economic sustainability. • Creation of public-private co-development environments (<i>Joint Labs</i> and <i>Open Labs</i>). • Strengthening of intellectual-property management and technology transfer. Benefits for the population (patients) • Acceleration of the development of clinical innovations with direct repercussions on patients. • Greater involvement of patient associations in research processes (<i>Open Labs</i>). • Better quality of care thanks to technologies validated in real-world contexts. • Increase in personalized solutions (e.g. digital twin, advanced imaging). • Indirect benefits in terms of effectiveness, safety and timeliness of care pathways. Benefits for the National Health Service (SSN) • Access to advanced research infrastructures in support of clinical and translational research. • Better integration among healthcare facilities, research and technological innovation. • Possibility to test new organizational and digital models in healthcare. • Support for the assessment, validation and adoption of new health technologies. • Strengthening of the SSN's capacity to collaborate in national and international networks. Benefits for universities and research centres • Greater visibility and accessibility of research infrastructures. • Increase in the shared use of laboratories and technological platforms. • Development of interdisciplinary and inter-institutional collaborations. • Opportunities for scientific coordination and leadership in thematic <i>Joint Labs</i>. • Better valorization of research results through IP and patent support. • Strengthening of the capacity to attract funding and talents. Benefits for companies (companies, start-ups, investors, territory) • Simplified access to laboratories, skills and excellence infrastructures. • Reduction of R&D time and costs thanks to centralized services. • Co-development opportunities in <i>Joint Labs</i> on high-impact technologies (AI, <i>Digital Twin</i>). • Possibility to test and validate solutions in real clinical contexts. • Structured support for intellectual-property management. • Strengthening of open-innovation and technology-transfer strategies.
PL4 – Technology Transfer	Results and benefits for the D³4Health Foundation • Effective transfer of research towards clinical practice and the market. • Adoption of technologies for personalized and predictive medicine through the integration of <i>Digital Twins</i> and wearable devices into care pathways. • Valorization of the intellectual property of public research through patenting and structured management of research results.

	• Strengthening of entrepreneurship and the healthtech ecosystem through the birth and growth of start-ups. • Improvement of the sustainability of the healthcare system through the introduction of digital solutions able to optimize the management of healthcare facilities. Benefits for the population (patients) • Better quality of care and greater personalization of clinical pathways. • Reduction of avoidable hospitalizations thanks to continuous monitoring. • Faster access to safe, effective and real-world-evidence-based innovations. • Patient empowerment in managing their own health. Benefits for the National Health Service (SSN) • Greater sustainability of the SSN thanks to cost-effective digital solutions. • Improvement in clinical-organizational efficiency and decision-making processes. • Strengthening of the role of IRCCS as a Hub of applied innovation. • Attractiveness for industrial partnerships and European projects. Benefits for universities and research centres • Increase in the scientific, technological and socio-economic impact of research. • Greater opportunities for funding and public–private collaboration. • Better training of students and researchers on innovation and technology transfer. • Strengthening of the academic “third mission”. Benefits for the business system (companies, start-ups, investors, territory) • Reduction of development risk thanks to technologies already tested in real clinical contexts. • Acceleration of the time-to-market of innovative products and services. • Integration of advanced digital solutions into business models (e.g. pharma + digital). • Strengthening of national and international competitiveness.
PL5 – Centre of Competence	Results and benefits for the D³4Health Foundation • Production and diffusion of authoritative knowledge on digital health through National Reports, White Papers, scientific datasets and structured dissemination of results. • Role as a technical-scientific reference point for policy and public decision-makers. • Structured involvement of stakeholders, including patients and companies, through thematic Think Tanks and shared access to trends, analyses and strategic priorities. • Stable integration into national and European networks, assuming a representation role in the main international contexts. • Consolidation of the Foundation as a Hub of competence and institutional representation. Benefits for the population (patients) • Greater transparency and information on healthcare innovation. • Public policies more oriented to the real needs of patients. • Increased trust in the use of digital-health solutions. Benefits for the National Health Service (SSN)

	• Qualified support for the definition of policies and regulations on digital health. • Better alignment of SSN strategies with technological innovation. • Strengthening of the capacity to plan and evaluate healthcare policies. Benefits for universities and research centres • Increase in national and international scientific reputation. • Greater opportunities for collaboration, funding and scientific impact. • Strengthening of the role of research as a basis for policy and innovation. Benefits for the business system (companies, start-ups, investors, territory) • Better orientation of investment in R&D and digital innovation. • Structured dialogue with institutions, research and the healthcare system. • Greater regulatory predictability and alignment with public policies.
--	---

Economic-Financial Model

The 2026–2028 economic-financial model traces the development trajectory of the D³4Health Foundation in the post-PNC transition phase, highlighting the progressive shift from a predominantly public and extraordinary funding model to a mixed model, founded on a structured diversification of income sources and on controlled growth of operating costs.

The model provides that the restricted reserves on PNC funds be invested by the Foundation in accordance with the provisions of the Statute, the ATS (Temporary Association of Purpose) and MUR Notice 931/2022, in order to maximize research results, support project initiatives relating to the themes of the initiative, support the nodes of the research laboratories, create networking and increase the impact of the network on society. The main expenditure items for these activities are: personnel, specialist technical consultancy, participation in and organization of dissemination activities, networking initiatives and brand strengthening, support for research, and support for researchers and nodes. The detailed income statements will be made available in the Foundation's budget forecasts and in the annual action plans.

Over the three-year period, investments are envisaged aimed at maximizing the results of the initiative, in line with the five identified strategic pillars, intended to ensure resources for research activities consistent with the Foundation's purposes, to support the nodes of the research infrastructure, and to support technology transfer and the scale-up of technologies in accordance with the strategic objectives.

Indicator	2026	2027	2028
Operating surplus available / generated (approx., € million)	1.5 (available)	1.3	1.5

In particular, the operating surplus deriving from PNC activities available for 2026 is approximately €1.5 million. From the estimate of the costs and revenues of the economic model, both 2026 and 2027 close with an operating surplus of approximately €1.3 million, then rising to €1.5 million in 2028. This surplus is generated by the residual PNC contributions for 2026 and by the restricted reserves accumulated in the previous management years, which will be reinvested for the implementation of the Foundation's strategic lines in 2026 and 2027. A contribution of funds connected to MUR Decree 398 of 2025 is also assumed for 2027 and 2028, as well as positive effects from the launch and consolidation of the strategic activities envisaged by the Foundation over the coming three-year period.

On the basis of the assumptions developed, which will be constantly monitored, the Foundation presents a positive operating surplus in each of the three years of the Plan. The cumulative result of the three-year period confirms the economic sustainability of the model and the Foundation's capacity to operate autonomously beyond the extraordinary-funding phase, while also launching new strategic activities functional to the expansion and consolidation of the Foundation as a reference structure in the health market.

Section 5: Phase 2 – Implementation and Monitoring of the Plan

Phase 2 – Purpose

Phase 2 constitutes the operational period following the release of the Three-Year Strategic Plan, dedicated to intensive monitoring, technical-organizational support and accompaniment of the Foundation in the post-PNC-project transition. It is a dynamic and proactive phase, designed to translate the strategic lines into concrete results: verification of the progress of the envisaged actions, strengthening of internal skills, full operationalization of processes and tools, and coordinated management of relations with institutional, academic and industrial stakeholders. Given the delicacy of the context and the speed of change in the research, technology and innovation scenario, Phase 2 envisages an iterative approach based on continuous monitoring, rapid feedback and calibrated corrective interventions.

Operational Next Steps

During Phase 2, with the support of the consulting firm EY, the D³4Health Foundation will launch a structured analysis and monitoring of its strategic path, aimed at assessing the results achieved, the distinctive skills matured, the current positioning in the context of healthcare innovation and any market opportunities. On the basis of this analysis, the Foundation will identify new opportunities for development and specialization, with the aim of strengthening its role and carving out a recognizable and competitive strategic positioning at national and European level, consistent with the strategic priorities defined by the Plan.

Support for networking for the development of new project activities:

- Interviews with stakeholders internal and external to the Foundation;
- Development and monitoring of KPIs;
- Drafting of the detailed activity plan.

In this context, the implementation timelines and the strategic priorities of the interventions will also be defined, including initiatives such as:

- Identification of events and activities to strengthen the Foundation's brand and maximize the impact of the initiative's results;
- Valorization of the results achieved through various tools, such as the activation of scholarships for young researchers;
- Support for and promotion of the research-infrastructure nodes, with actions such as support for the maintenance and use costs of the laboratories belonging to the research infrastructures;
- Organization of specialist training courses (e.g. Summer School, new cycles of the higher-education pathway);
- Creation of a dedicated Help Desk for scouting and support in accessing public-finance opportunities;
- Support for networking and the creation of critical mass.