CHRC

COMPREHENSIVE HEALTH
RESEARCH CENTRE

# COMPREHENSIVE HEALTH RESEARCH CENTRE

2025 - 2029

fct Fundação para a Ciência e a Tecnologia

NOVA MEDICAL SCHOOL

NOVA ESCOLA NACIONAL DE SAÚDE PÚBLICA

UNIVERSIDADE DE ÉVORA

LISBON INSTITUTE of Global Mental Health

Fraunhofer PORTUGAL

# Contents

CHRC

# Charting a New Era in Health Innovation: A Legacy of Impact Begins with CHRC

# Message from the Director of CHRC

As we embrace the future, the Comprehensive Health Research Centre (CHRC) is poised to lead a transformative wave in health research and innovation. Our commitment to innovation across medicine, public health, elderly care, nutrition, mental health, and technology is unwavering. What sets CHRC apart is our interdisciplinary team of talented and dedicated researchers, working at the forefront of their fields of research to shape the future of healthcare.

The results of the past years precede us. Our strength lies not only in the outstanding outputs we have produced (e.g., peer-reviewed articles, PhD thesis, patents, competitive funding secured, new partnerships...), but in the passion and commitment with which our researchers contribute to and for society. With a solid foundation of strong governance, state-of-the-art infrastructures, and the guidance of a remarkable external advisory board, the CHRC is currently positioned to drive impact healthcare research and innovation. Our focus on clinical and translational research is critical—not only for advancing scientific understanding but for delivering tangible health solutions that will benefit society at both national and international levels.

Together, as a community, we push the boundaries of science, determined to create a lasting impact. As we move forward, we are driven by a simple truth: together, we are capable of greatness. Our mission is ambitious, our strategy is clear, and our resolve is strong. Together, we will not just meet challenges—we will surpass them, creating a legacy of excellence and impact in society that will inspire the generations to come. The future of healthcare is within our grasp, and CHRC is ready and committed to lead the way.

**Helena Canhão, MD, PhD**

# CHRC AT A GLANCE

CHRC is a cutting-edge centre at the forefront of health research and innovation. For 2024's application, CHRC merged with ToxOmics. CHRC was officially established in Jan.2020, coordinated by NOVA Medical School/NMS in collaboration with 4 other management partners: National School of Public Health, Évora University, Hospital de Santo Espírito, Azores and Lisbon Institute of Global Mental Health. It started with 125 integrated PhDs, 60 PhD students and 48 non PhD members. ToxOmics, a NMS and INSA collaboration, started its activities in 2009. In 2018, it integrated 16 PhD members and 4 PhD students. Over 2018-2023, CHRC and ToxOmics created a strong research community, increasing by 33% the integrated PhD researchers. In Dec.2023, they gathered 239 PhD Researchers, 138 PhD students and 60 integrated non-PhD members.CHRC included researchers from medicine, nutrition, rehabilitation, public health, nursing, psychology, epidemiology, statistics, economy, engineering & data science, each bringing unique and complementary scientific background and expertise. Integrating knowledge from various disciplines, research efforts were focused on understanding the causes and mechanisms of health issues and developing innovative strategies for prevention, diagnosis and treatment. CHRC was embedded within an ecosystem composed of 29 different institutions: academy, hospitals, health centres and companies, patients and caregivers' advocates, non-profit associations and Governmental Agencies. CHRC coordinated the Academic Clinical Centre of Lisbon (CCAL), the Associated Laboratory REAL and integrated 2CoLABs - CoLABTrials and ValueforHealth. CHRC established a governance framework cantered on an executive committee and management office, ensuring the organization's effectiveness and sustainability. Furthermore, CHRC introduced several support structures for its researchers, including (i) a funding office that assisted 230 grant applications between July 2021 and December 2023,(ii) a communication office for efficient internal/external information dissemination and (iii) a centre for training and education that offers tailored programs and courses, including 15 funded CHRC PhD scholarships.

# CHRC AT A GLANCE

CHRC also addressed infrastructural needs, developing facilities like the Biobank and enhancing Nova CRU, its clinical research unit, to support complex study designs and trials; between 2020-23, Nova CRU supported the development and implementation of 1076 studies (64% international).To foster interdisciplinary research, CHRC launched its Research Grants (320k€ between 2020-23), funding projects with significant social impact. During the pandemic, CHRC adapted to address global health challenges, contributing significantly through initiatives like the development of a low-cost ventilator and the COVID-19 Barometer. It also played a key role in vaccination efforts, particularly among high-risk groups. Between 2020-2023, output included 1120 Q1-Q2 publications (a 16% increase) and the development of 16 patents and 16 prototypes. 79% of published papers were open-source access. This period saw a 3-fold increase in international funding, revealing the growing impact in global research. In Dec 2023, researchers were involved in 108 national and international projects, which corresponded to a global funding of 80M€. With dedicated facilities, ToxOmics was developed as a unique research centre focused on oncobiology and human genetics, creating a broad network of national and international collaborations. Significant outcomes included the expanding of scientific projects and promotion of preclinical research and translational science, with high profiling publications particularly in predicting, preventing, and treating diseases through genomics and post-genomics applications. For ToxOmics researchers to increase their ability to bring their research out of the lab, closer to citizens with higher impact, ToxOmics will integrate CHRC for 2025-2030.

CHRC

# CHRC structure and governance for 2025-2029

# CHRC STRUCTURE AND GOVERNANCE FOR 2025-2029

## CHRC MANAGEMENT INSTITUTIONS

- NOVA Medical School (NMS)
- National School Of Public Health (ENSP)
- University of Évora (UÉ)
- Lisbon Institute of Global Mental Health (LIGMH)
- Fraunhofer Portugal AICOS

## CHRC MEMBERS

CHRC's Starting Team for 2025-2029:

- 217 integrated PhD researchers
- 168 PhD Students
- 16 non-PhD technicians
- 80 collaborative researchers

## CHRC GOVERNANCE

- Board of Directors (Strategic Level)
- CHRC Executive Director and Executive Committee (Executive Level)
- Scientific Advisory Board
- Assembly of Representatives (AR)

## CHRC THEMATIC LINES

- Personalised Medicine in High Burden Diseases
- Health Promotion and Health Care through Life Course
- Health Innovation and Digital Health
- Climate change, Sustainability and Global Health

# CHRC STRUCTURE AND GOVERNANCE FOR 2025-2029

## CHRC RESEARCH WORKING GROUPS

- Nutrition and Metabolism
- Human Kinetics
- Behavioural Science and Social Innovation
- Global Mental Health and Human Rights
- CardioVascular and Respiratory Research and Innovation
- Musculoskeletal Health: Prevention, Diagnosis and Treatment
- Translational oncology
- Immune dysregulation, infection, and antibiotics resistance
- Advanced Human Genetics
- Self-care and Patient-centered care (Patient Care)
- Health systems and health policies

## CHRC SUPPORT, INFRASTRUCTURES, AND STRATEGIC INITIATIVES

- Management Office
- Research Funding Office
- Communication Office
- Career Development Office
- Innovation Centre – Lab Tech
- Data Centre
- CHAIN Biobank
- Clinical Trials Unit
- Cochrane Centre
- Physical Fitness Assessment Laboratory
- Kitchen Lab
- Pre-Clinical Research Support
- Education and Training Centre
- Knowledge & Technology Transfer Office
- Community Engagement and Well-being Office
- Public Policies Office

# CHRC STRUCTURE AND GOVERNANCE FOR 2025-2029

## CHRC KEY OBJECTIVES

- Research Excellence
- Funding Diversification
- Collaborative Research Culture
- Product Development
- Education Expansion
- Career Development
- Global Influence
- Health Equity and Community Engagement

## CHRC STRATEGIES FOR SUCCESS:

- Funding and Infrastructure
- Comprehensive Training Programmes
- Partnerships with the Technology Industry
- Focus on Intellectual Property and Commercialisation
- Community Engagement

# CHRC STRUCTURE AND GOVERNANCE FOR 2025-2029

### 1. Research Excellence

- 75% publications in Q1 journals
- 90% open-access publications
- 25% publications with lay language summaries

### 2. Funding Diversification

- 80% funding from international sources

### 3. Collaborative Research Culture

- 60% projects from collaborative networks and collaborations

### 4. Promoting Global Scientific Events

- 3 high-profiling global scientific events per year

### 5. Developing Research-Based Products

- 5 research-based products reaching TRL 8-9

### 6. Entrepreneurshio and Innovation

- Support the development of 3 strat-ups or spin-offs
- 2 existing patents commercialized
- 1 new patent commercialized

### 7. Education and Training Expansion

- Introduce 8 new programmes or courses
- attract 600 annual applicants
- support the completion of 300 master's and 50 PhD students per year
- enroll 30 early PhD researchers annually in the CHRC early PhD

### 8. Career Development

- 15 associate/full professor positions
- 15 permanent researcher positions
- 1 Chair position established

### 9. Global Impact

- 3 shared best practices adopted
- 6 new international collaboration protocols

### 10. Health Equity and Community Engagement

- Develop and implement culturally competent health solutions in collaboration with local communities and stakeholders

CHRC

# What has changed?

# WHAT HAS CHANGED?

As CHRC embarks on a new round of funding by Fundação para a Ciência e a Tecnologia (FCT) for the period of 2025-2029, it heralds a new era of collaboration, excellent research and foster sustainable health solutions with a global impact. Five distinguished institutions—NOVA Medical School, the National School of Public Health, the University of Évora, the Lisbon Institute of Global Mental Health, and the Fraunhofer Portugal AICOS —will lead the charge in shaping the future of research excellence and societal impact. These institutions will unite to drive CHRC's efforts, leveraging structural and organisational transformations to elevate research standards and societal contributions. The next years are going to mark by ambitious upgrades for the three academic institutions of CHRC. NOVA Medical School, the coordinating institution, is developing a cutting-edge campus in Carcavelos. This new campus will foster innovative education and research initiatives addressing emerging health and societal needs. The National School of Public Health is expanding to accommodate more postgraduate students and researchers, while the University of Évora is launching a medical school course, introducing a new dimension to its academic and research pursuits. The Lisbon Institute of Global Mental Health will deepen its pivotal role in mental health epidemiology and policy research. Finally, the strategic integration of Fraunhofer Portugal AICOS, a leading institution in advanced health technology research, at the CHRC, will significantly enhance CHRC's innovative capabilities by forging technology Innovation with higher TRL.

CHRC will reinforce its scientific research areas by the integration of researchers. First, CHRC will integrate the researcher of the ToxOmics Unit which will reinforce the areas of genetic and personalized medicine research; namely on oncobiology and human genetics. Second, CHRC will integrate a specialised set of researchers from NMS in the Nutrition and Metabolism research areas, which will bolster CHRC influence in well-being, public health promotion and occupational health with evidence-based research. Further, the stablished strategic partnerships, with the Clinical Academic Centre (CCAL), the Associated Laboratory REAL, and two collaborative laboratories (CoLab Trials and ValueforHealth), alongside international and national collaborations, will enhance the rich multidisciplinary environment at the CHRC. These initiatives will drive research forward in translational, clinical, and public health spheres, generating knowledge and solutions that will enrich lives and society at large.

# WHAT HAS CHANGED?

CHRC starts this new period with a consolidated multidisciplinary team of 217 integrated PhD researchers, 168 PhD students, 16 non-PhD technicians, and 80 collaborative researchers. This dedicated team will operate under a robust governance model, where the Board of Directors sets the strategic priorities, while the Executive Director and the Executive Committee will oversee the day-to-day operations, and the Scientific Advisory Board provides expert guidance and oversight to the Board of Directors.

For the period 2025-2029, CHRC will be organised into four thematic lines and 14 research groups, led by experts conducting innovative health research. These groups will spearhead multidisciplinary research, supported by state-of-the-art infrastructures and foster collaborative approaches. CHRC will actively promote cross-disciplinary collaboration, providing mechanisms that encourage researcher engagement, knowledge sharing, and the maximisation of research impact.

Support, Infrastructure, and Strategic Initiatives will be the backbone of CHRC's mission, offering the essential technical and organisational foundations of the centre. These initiatives will underpin all research activities, ensuring a resilient and adaptable infrastructure that equips researchers with the resources and tools necessary to realise their goals in alignment with the strategic objectives of the CHRC. Core areas such as research excellence, operational professionalisation, and career development will be prioritised, nurturing a dynamic and inclusive environment that inspires innovation and excellence, enabling CHRC to achieve its ambitious long-term vision.

# WHAT HAS CHANGED?


**Academy (9)**

NOVA MEDICAL SCHOOL · NOVA NATIONAL SCHOOL OF PUBLIC HEALTH · UNIVERSIDADE DE ÉVORA · POLITÉCNICO DE LISBOA · IPS · Faculdade de Medicina Lisboa · UAlg · Universidade Lusófona · Universidade Fernando Pessoa

**Hospitals (11)**

Unidade Local de Saúde Santa Maria · Unidade Local de Saúde Arrábida · Unidade Local de Saúde São José · Unidade Local de Saúde Lisboa Ocidental · Unidade Local de Saúde Cova da Beira · Unidade Local de Saúde Estuário do Tejo · Hospital de Santo Espírito da Ilha Terceira, E.P.E.R. · IPO Lisboa · Lusíadas · cuf · HFF

**Health companies (4)**

NOVARTIS · MEDINAVA · INCA · CENC

**Patients & caregivers (2)**

Liga Portuguesa contra as Doenças Reumáticas · Patient Innovation

**Health administrative centres (3)**

ars lvt · Instituto Nacional de Saúde Doutor Ricardo Jorge · Ministério da Saúde · FIOCRUZ Fundação Oswaldo Cruz

**Non-profit organisations (5)**

Fraunhofer PORTUGAL · LISBON INSTITUTE of Global Mental Health · VOH colab · CENTRALAB · SPR Sociedade Portuguesa de Reumatologia

**Start-ups (2)**

mo MEDICAL SOLUTIONS · nowace

**36 institutions**

**5**

management institutions

**36**

institutions

CHRC

# Governance

# GOVERNANCE

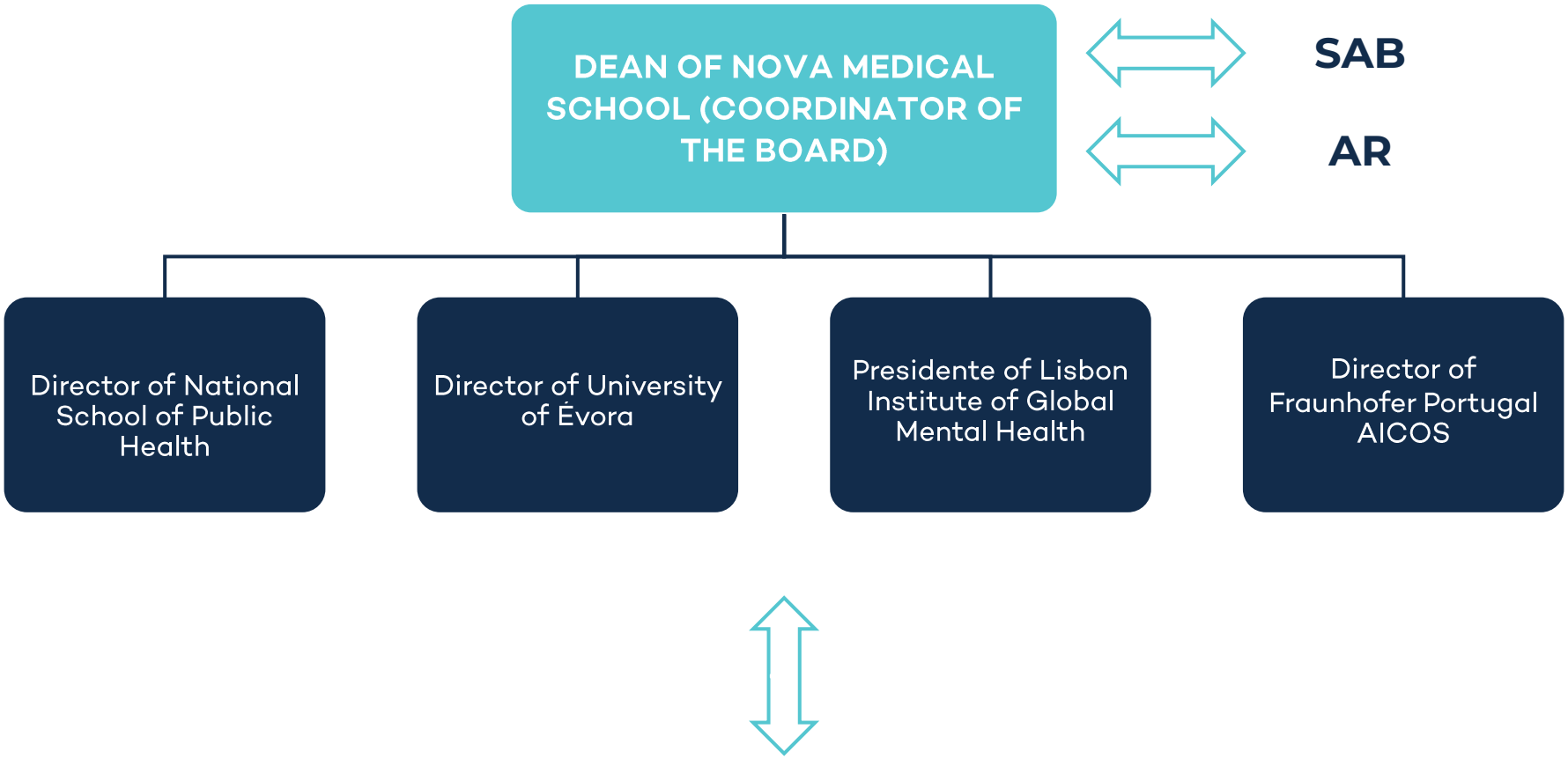
To align with our ambitious 2025-2029 strategic work plan and manage a larger centre with increased research intensity, for the 2025-2029 period CHRC will implement a two-tiered governance model. CHRC will present a strategic and an executive level to ensure cohesive and unified leadership, the representative of the management institutions and with a strategic focus on driving growth and innovation in health. The Board of Directors, coordinated by the Dean of NMS, sets the strategic direction for CHRC and is composed by the directors of all CHRC management entities, while the Executive Director and Executive Committee are responsible for implementing the strategy and overseeing day-to-day operations, ensuring alignment with long-term goals. Meanwhile, the external Scientific Advisory Board will provide expert guidance and oversight to the Board of Directors and review CHRC's work plan annually. Finally, the implementation of the plan of activities will be overseen on a day-to-day basis by the Management Office (which will report directly to the Executive Director and will count on a Project manager). Research activities will be supported by the Research Support Offices and the Infrastructures.

This governance framework is designed to enhance CHRC's research impact and organisational effectiveness while maintaining a decentralised structure with centralized activities.

# BOARD OF DIRECTORS – STRATEGIC LEVEL

**Responsibilities:**

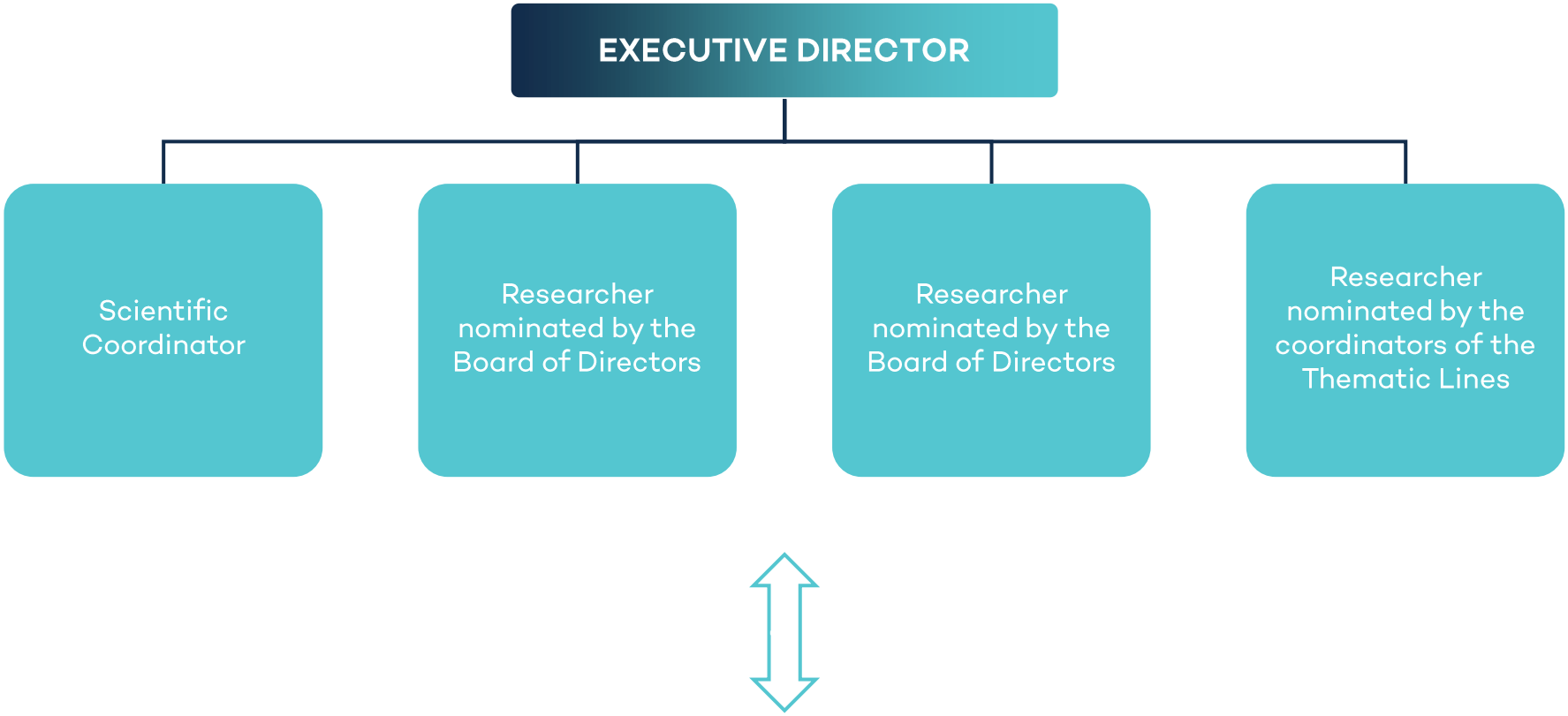
- Oversee strategic planning
- Approve budgets
- Make key financial decisions
- Hold ordinary meetings biannually



# CHRC EXECUTIVE DIRECTOR AND EXECUTIVE COMMITTEE (EXECUTIVE LEVEL)

**Responsibilities:**

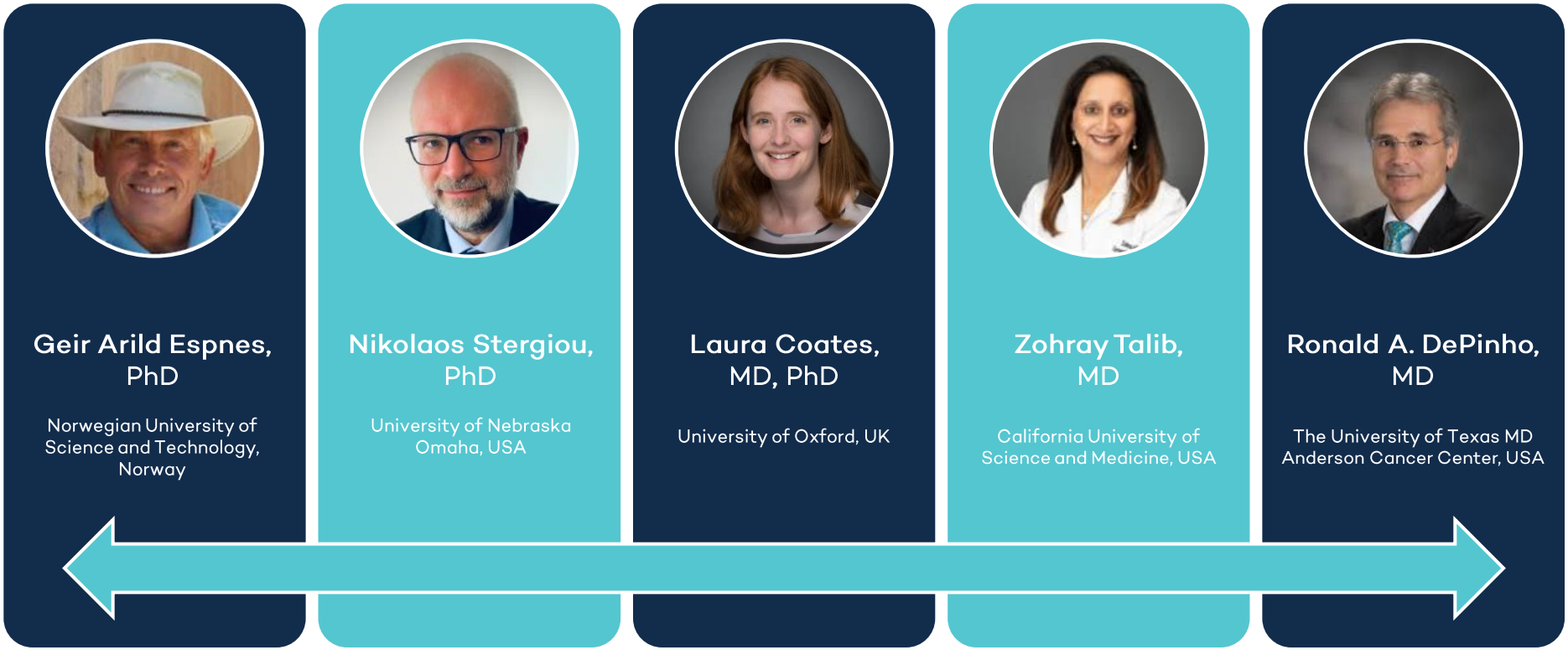
- Implement CHRC's strategic plan
- Set performance indicators
- Allocate resources
- Develop project timelines
- Conduct monthly meetings to monitor progress and financial performance
- Manage the scientific organisation and outputs of the TL and research groups



# RESEARCH, INFRAESTRUCTURES AND SUPPORT OFFICES

# CHRC SCIENTIFIC ADVISORY BOARD (SAB)

An external Scientific Advisory Board (SAB), composed of 5 distinguished scientists and international leaders with expertise in healthcare research management, will provide expert guidance and oversight to the Board of Directors and review CHRC´s work plan annually. This board offers valuable external perspectives, recommends improvements, and evaluates project outcomes. Additionally, it plays a pivotal role in ongoing quality enhancement and conducts periodic assessments of the Unit's activities.

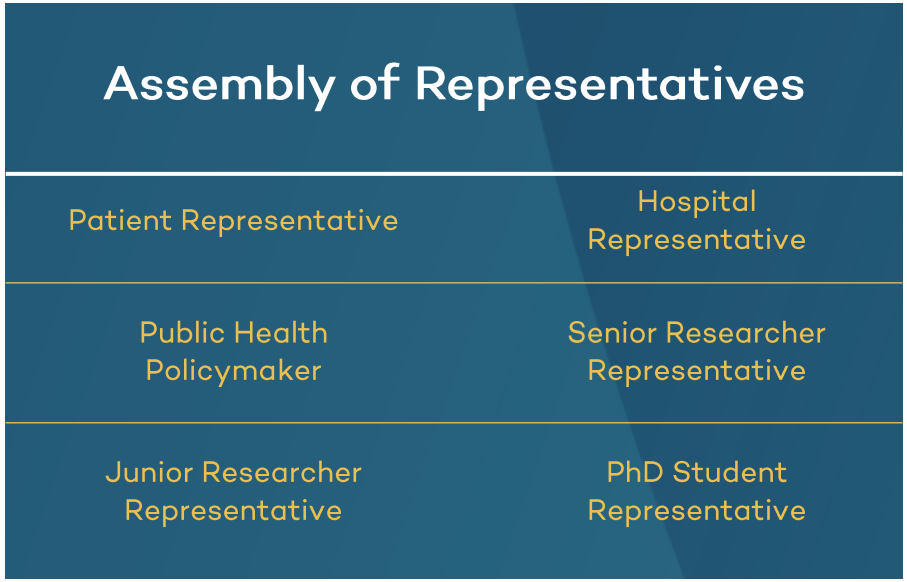


# ASSEMBLY OF REPRESENTATIVES (AR)

The Assembly of Representatives of CHRC is composed of representatives from various key stakeholder groups, ensuring a broad and inclusive governance model. It includes a **Patient Representative**, a **Hospital Representative**, a **Public Health Policymaker**, a **Senior Researcher Representative**, a **Junior Researcher Representative**, and a **PhD Student Representative**. This diverse committee plays a crucial role in guiding CHRC's activities, providing insights from different perspectives to align research and policy with societal needs. It operates alongside the Board of Directors, contributing to strategic discussions and decision-making.

**Responsibilities:**

- Guide CHRC's activities
- Provide insights from different perspectives to align research and policy with societal needs Allocate resources
- Contribute to strategic discussions and decision-making with the Board of Directors.



CHRC

# Research Organisation

# RESEARCH ORGANISATION

The CHRC will be structured around four distinct Thematic Lines (TL) and 14 Research Groups (RG), each coordinated by experts spanning various fields of health and medicine, weaving together a tapestry of interdisciplinary knowledge. Supported by a strong infrastructure for cross-institutional collaboration, researchers are encouraged to engage in multidisciplinary collaborative projects, enhancing contributions across different fields through grants, publications, and workshops.

# THEMATIC LINES (TL)

During the 2025-2029 period, the CHRC will structure its research around four Thematic Lines, each led by a dedicated coordinator, with clear objectives and KPIs guiding the direction and focus of each thematic line:

## TL 1 - PERSONALISED MEDICINE IN HIGH BURDEN DISEASES

### JOÃO CONDE - COORDINATOR

TL1 focuses on tailoring diagnosis and medical treatment to the individual characteristics of each patient. By fostering interdisciplinary collaboration across multiple research groups, TL1 aims to advance personalised medicine, improve patient outcomes, and enhance the efficiency of healthcare delivery, particularly for high-burden diseases, aligning with the R&D Unit's mission to innovate and optimize healthcare solutions.

## TL 2 - HEALTH PROMOTION AND HEALTH CARE THROUGH LIFE COURSE

### HELENA CANHÃO - COORDINATOR

TL2 focusses in exploring and implementing strategies that promote health and well-being across all stages of life. Through interdisciplinary collaboration, TL2 aims to improve population health and reduce disparities by addressing the social, environmental, and biological factors that influence health outcomes.

# THEMATIC LINES (TL)

## TL 3 - HEALTH INNOVATION AND DIGITAL HEALTH

### FRANCISCO NUNES - COORDINATOR

TL3 two main objectives are to contribute to the development of innovation in healthcare by ensuring the societal impact of the research developed at the research unit, while also supporting the digitalization of the healthcare field in all its dimensions, with the goal of improving patient care and outcomes.

## TL 4 - CLIMATE CHANGE, SUSTAINABILITY AND GLOBAL HEALTH

### ANA CATARINA ALMEIDA SOUSA - COORDINATOR

TL4 addresses the global health challenges posed by climate change, focusing on environmental sustainability, pollution, infectious and non-communicable diseases, inequities, and the promotion of health strategies. It aims to improve human health and wellbeing while reducing global disparities, with an emphasis on creating sustainable healthcare systems to mitigate the healthcare sector's contribution to carbon emissions.

# RESEARCH GROUPS (RG)

Throughout the 2025-2029 period, the CHRC will bring together 14 Research Groups (RG), each characterised by specific scientific research interest that can be summarized in keywords. Each RG is led by a Principal Investigator (PI).

### RG 1 - Nutrition and Metabolism

**Conceição Calhau - PI**

**Keywords**: Diet; Microbiota; Endocrine disruptors; Metabolic disease

### RG 2 - Human Kinetics

**Armando Raimundo - PI**

**Keywords**: Exercise and Health; Sports Sciences; Psychomotricity; Exercise Physiology

### RG 3 -Behavioural Science and Social Innovation

**Sónia Dias - PI**

**Keywords**: Health Determinants; Behavioural Insights; Societal transformation; Citizen science

### RG 4 - Global Mental Health and Human Rights

**José Caldas de Almeida - PI**

Keywords: Global mental health; Mental health policy and services; Coercion in psychiatric services; Mental health and Human rights

### RG 5 - CardioVascular and Respiratory Research and Innovation

**Pedro Gonçalves - PI**

**Keywords**: Biomarkers; Digital Health; Coronary Artery Disease; Chronic Cough

### RG 6 - Musculoskeletal Health: Prevention, Diagnosis and Treatment

**Ana Maria Rodrigues - PI**

**Keywords**: Musculoskeletal diseases; New models of care delivery; Epidemiology; Digital health

### RG 7 - Translational oncology

### Isabel Fernandes - PI

**Keywords**: Cancer-related research; Translational and basic research; Cancer policy; Therapy and diagnosis

### RG 8 - Immune dysregulation, infection, and antibiotics resistance | Pedro Póvoa - PI

**Keywords**: Infection; Sepsis; Innate immune response; Microbial resistance

### RG 9 - Advanced Human Genetics

### António Sebastião Rodrigues - PI

**Keywords**: Human genetics; Toxicogenomics; Nanotoxicology; Biomonitoring

### RG 10 - Self-care and Patient-centered care (Patient Care)

### Manuel José Lopes - PI

**Keywords**: Multimorbidity, functional dependence & self-care; Patient experience; Patient empowerment and advocacy; Patient-centered health services

### RG 11 - Health systems and health policies

### Christopher Millett - PI

**Keywords**: Policy evaluation; Social and environmental determinants of health; Health inequalities; Quasi-experimental methods

### RG 12 - Healthcare services research: efficiency, equity, sustainability,and access | Julian Perelman - PI

**Keywords**: Access and equity; Sustainability and efficiency; Innovative clinical and management models; Healthcare integration and collaborative models

### RG 13 - Environmental and occupational health

### Susana Viegas - PI

**Keywords**: Environmental & occupational determinants of heath; Exposure and risk assessment; Indoor and outdoor pollution; Chemicals risk assessment and management

### RG 14 - Data and Health Technology

### Inês Sousa - PI

**Keywords**: Data analytics; Cyber security; Digital Heath; Biomedical Imaging and Analysis

CHRC


# Support, Infrastructure, and Strategic Initiatives

# SUPPORT, INFRASTRUCTURE, AND STRATEGIC INITIATIVES

The mission of CHRC will be propelled by the crucial contributions of Support, Infrastructure, and Strategic Initiatives, laying the indispensable technical and organisational foundations required to achieve its vision.

The Administrative Support, comprised of: 1) Management Office; 2) Research Funding Office; 3) Communications Office; 4) Career Development Office, will ensure seamless financial, communication, and legal management, empowering researchers to dedicate themselves fully to their work.

Technical support offices, such as: 1) CHAIN Biobank; 2) Pre-Clinical Research Support Centre; 3) Innovation Centre; 4) Clinical Trials Unit (NOVA CRU); 5) Data Centre; 6) Kitchen Lab; 7) Physical Fitness Assessment; 8) Cochrane Centre - will empower researchers to accelerate the translation of discoveries into impactful solutions for communities by providing specialised equipment and expertise.

CHRC presents a Centre for Education and Training to develop healthcare professionals and researchers, a Knowledge & Technology Transfer Office to facilitate partnerships and manage regulatory affairs, a Community Engagement and Well-being Promotion Office to strengthen ties with external stakeholders and support community mental health, and a Public Policies Office to translate research into actionable policy recommendations.

# NEW INFRASTRUCTURE ☆

## RESEARCH INFRASTRUCTURE

| Inception & Scientific Research | Clinical Validation / Population Studies | Transfer of Knowledge |
|---|---|---|
| • Innovation Centre ☆<br>• Pre-clinical Research Support Centre ☆<br>• Kitchen Lab<br>• Physical Fitness Assessment Laboratory | • CHAIN Biobank<br>• Clinical Trials Unit (NOVA CRU)<br>• Data Centre ☆<br>• Cochrane Centre | • Knowledge & Technology Transfer Office<br>• Public Policies Office |

| | | | | | |
|---|---|---|---|---|---|
| Management Office | Education & Training Centre | Communication Office | Research Funding Office | Career Development Office ☆ | Community Engagement & Wellbeing Promotion Office ☆ |

# RESEARCH FACILITATOR & SUPPORT OFFICE

- The Administrative Support, comprised of:
  - **1) Management Office** – ensures the organization's effectiveness and sustainability by overseeing day-to-day operations and coordinating the technical and administrative teams.
  - 2) **Research Funding Office** – provides support in the search of competitive funding opportunities tailored to CHRC community and proposal development.
  - 3) **Communications Office** - responsible for managing internal and external communications of the CHRC.
  - 4) A new **Career Development Office** will be established to leverage in a personalized manner researcher training, career growth promotion, and focus on diversity of gender dimension, and inclusion, ensuring that CHRC fosters a diverse community where all identities, and backgrounds are valued.

- Technical support offices, such as:
  - **1) CHAIN Biobank** - The CHAIN Biobank is a large-scale biomedical database and research resource containing de-identified genetic, omics, histologic, lifestyle, and health information from over 11,000 participants, including those from the general population and individuals with specific chronic non-communicable diseases. It supports researchers through the collection, processing, and quality control of a wide range of human biospecimens (solid and fluid) and associated health data. The biobank is composed of three labs: a BLS2 biosafety lab, freezer rooms, and a sample processing and quality control lab, offering services such as DNA and RNA extraction, cell culture, flow cytometry, and microscopy. In collaboration with the Pre-Clinical Research Support Centre, it currently stores more than 30,000 samples, including blood, serum, plasma, urine, and bones, from its 11,000 participants.

- **2) Pre-Clinical Research Support Centre** - supports cutting-edge research on molecular, biochemical, cell culture, and *in vivo* approaches with state-of-the-art facilities. It is composed of NMS research infrastructures that are managed by skilled staff members specialised in live cell imaging, histology, flow cytometry, -omics analysis, comparative pathologyrodent-specific animal work unit, and fly facilities. The Centre also includes the UE Laboratory of Pharmaceutical Technology, which targets pharmaceutical formulations and manufacturing process design, the Laboratory of Biomedical Sciences, which hosts in vitro and cell culture models, clinical biochemistry development, and clinical genomics, and the "One Environmental Health" Laboratory, which collects, processes, and analyses samples in the context of cohort, case-control, and cross-sectional studies.
- **3) Innovation Centre** - a state-of-the-art research infrastructure designed to accelerate the development and validation of digital health tools for managing chronic non-communicable diseases. It comprises multiple specialised labs, including a Prototyping Lab, Intelligent Systems Lab, and Digital Health Lab, which foster cutting-edge research and the application of AI and advanced technology in healthcare. Additionally, the centre features a Simulation Lab that utilises biomedical simulation with high-fidelity models, patient actors, and virtual reality, creating immersive clinical scenarios for enhanced training and development.
- **4) Clinical Trials Unit (NOVA CRU)** - The CHRC Clinical Trials Unit (NOVACRU) plays a pivotal role in the design, conduct, and management of clinical trials, focusing on testing the safety, efficacy, and effectiveness of new treatments, drugs, medical devices, and diagnostic tools. As the clinical research management unit of NOVA University, NOVACRU is a joint venture between NMS and NOVA Information & Management School (NOVA IMS), providing expertise in developing clinical research protocols, regulatory requirements, and trial management. Collaborating with healthcare institutions, CHRC researchers, and PtCRIN, the national partner of ECRIN-ERIC, NOVACRU supports investigator-initiated clinical trials and facilitates the internationalisation of clinical research, ensuring that all trials meet the highest scientific and ethical standards for impactful results.

- **5) Data Centre** – the Data Centre will have one delegation in each management unit and it is an advanced infrastructure dedicated to enhancing data collection and storage for large-scale epidemiological and clinical studies, supporting research and development (R&D) across CHRC projects. It provides high-performance data analytics and artificial intelligence capabilities, leveraging supercomputing resources such as the OBLIVION Supercomputer and the VISION and ORION Clusters. The Data Centre ensures compliance with the European Commission's FAIR (Findable, Accessible, Interoperable, Reusable) data principles, facilitating efficient data management and analytics for comprehensive research efforts.
- **6) Kitchen Lab** - located at NMS, is a dedicated hands-on teaching space where food and health converge, translating science to the table and reinforcing skills across all phases of the food circuit—from farm to plate. It also hosts nutrition research studies, education, training, and promotes community activities, fostering a deeper understanding of the relationship between nutrition and health.
- **7) Physical Fitness Assessment Laboratory** – The Physical Fitness Assessment Laboratory, located at the University of Évora, is equipped with a DXA machine to assess body composition, an isokinetic dynamometer to measure muscle strength, and force platforms to analyse the biomechanics of gait and balance. Thus, with its high-speed cameras and physiological marker systems, the lab enables the analysis of movement and motor function, offering a comprehensive assessment of physical capabilities.
- **8) Cochrane Centre** - affiliated with both ENSP and NMS, it focuses on promoting evidence-based health decisions through systematic reviews and educational initiatives.

- Additionally, CHRC is presenting:
  - A **Centre for Education and Training** that provides invaluable learning opportunities for healthcare professionals and researchers, particularly in the fields of data science, health informatics, and digital health technologies. It enhances educational programs and training opportunities in multidisciplinary health research by offering 9 PhD programmes, 22 master's degrees, and 50 advanced courses from the three CHRC academic institutions (NMS, ENSP, and UÉ). Additionally, it fosters intercollaborative work between these three institutions through the 9 CHRC Collaborative Pre- and Postgraduate Training Programmes:
    - Bachelor in Public Health - NMS and ENSP
    - Digital Health Executive Course - ENSP and NMS
    - Master in Clinical Research Management (MEGIC) – NMS and ENSP
    - Master in One Health: Human and Animal Public Health - UÉ and NMS
    - Master in Physiotherapy – Musculoskeletal Conditions - ENSP and NMS
    - Master in Epidemiology, Biostatistics, and Health Research (EPIBIS) – ENSP and NMS
    - PhD in Global Public Health - ENSP and NMS
    - PhD in Health and Wellness Sciences and Technologies - NMS, ENSP and UÉ
    - PhD in Erasmus Mundus PHOENIX EM JDP Dynamics of Health and Welfare – ENSP and UÉ
  - A **Knowledge & Technology Transfer Office** – assists with institutional and international partnerships, as well as legal and regulatory affairs.
  - A **Community Engagement and Well-being Promotion Office** - CHRC promotes partnerships with patient associations, healthcare companies, and government agencies to enhance research impact. CHRC also prioritises community mental well-being, offering support and promoting work-life balance.
  - A **Public Policies Office** – focused on translating scientific findings into actionable policy recommendations, advocating for evidence-based health strategies, and engaging with stakeholders to shape effective public health policies.

CHRC

# 2025-2029 Key objectives and Strategy

# Key Objectives for 2025-2029:

To achieve its ambitious goals for the 2025-2029 period, CHRC is committed to advancing excellence across multiple domains, from research and funding to global collaborations and community engagement. With a clear focus on innovation, international partnerships, and impactful outcomes, CHRC will implement a series of strategic initiatives aligned to the key objectives identified below, to ensure sustainable growth and success.

## KEY OBJECTIVES

- Research Excellence
- Education Expansion
- Funding Diversification
- Career Development
- Collaborative Research Culture
- Global Influence
- Product Development
- Health Equity and Community Engagement

# STRATEGIES FOR PROMOTING SUCCESS

To achieve the key objectives of CHRC for the 2025-2029 period, 5 centralized strategies to promote success have been outlined to strengthen interinstitutional capabilities and expand the global impact of health research:

1

### Funding and Infrastructure

- Reinforce internal funding mechanisms to support extensive international collaborations, improve the CHRC funding office's efficiency, and invest in state-of-the-art research facilities.

2

### Comprehensive Training Programmes

- Expand scholarships, exchange programmes, and specialized training initiatives.

3

### Partnerships with the Technology Industry

- Strengthen collaborations with technology companies to drive innovation.

4

### Focus on Intellectual Property and Commercialisation

- Prioritize the protection and commercialisation of intellectual property.

5

### Community Engagement

- Deepen ties with global and local communities to foster collaboration and impact.

# STRATEGIC ACTIONS FOR 2025-2029

### 1. Research Excellence:

Enhance CHRC's scientific reputation by promoting the publication of scientific discoveries in impactful peer-reviewed publications that are aligned with the current policy of open access.

**KPI:** Aiming formore than 75% publications in top-tier Q1 journals. Ensure 90% of publications are in open-access journals, with atleast 25% including lay language summaries, making research societally accessible.

### 2. Funding Diversification:

Reduce the dependence on national competitive funding which is scares and unpredictable. Increase and diversify of competitive research funding, with a particular focus on securing funding from international sources. This will support a broad range of projects in areas such as oncology, cardiology, musculoskeletal diseases, infectious diseases, health promotion, nutrition, physical activity, health systems, and emerging technologies.

**KPI:** Ensure that at least 80% of CHRC's funding comes from international sources.

### 3. Collaborative Research Culture:

Develop a dynamic research environment that emphasizes interdisciplinary teamwork, where all career stages inputs are valuable and interinstitutional/ national and international partnerships. This will foster a space where knowledge exchange thrives, and mentorship is available to researchers at all career stages.

**KPI:** Ensure that 60% of CHRC's projects originate from collaborative networks and collaborations.

# STRATEGIC ACTIONS FOR 2025-2029

### 4. Promoting Global Scientific Events:

Organise in a regular basis high-impact scientific conferences, colloquia, seminars, workshops, and debates to promote global dialogue among research communities and to propel to the international scientific community the science that is carried out at CHRC. These events will foster international collaboration and establish CHRC as a hub for health research and innovation.

**KPI**: Promote at least three high-profile global scientific events per year.

### 5. Developing Impactful Research-Based Products:

Streamline and accelerate the transformation of research discoveries into viable clinical, diagnostic, therapeutic, and public health applications. Leverage industry partnerships and acceleration research programmes to enhance these translation efforts into sustainable health solutions.

**KPI:** Ensure five CHRC research-based products reach Technology Readiness Levels (TRL) 8-9.

### 6. Enhancing Entrepreneurship and Innovation:

Foster healthcare innovation culture at the centre through collaborations with external entities such as the Carnegie Mellon Portugal Programme, NOVA SBE, and the Swartz Center for Entrepreneurship. The creation of the CMU Portugal Patient Innovation (PI) Accelerator will drive entrepreneurship and the commercialisation of innovations.

**KPI:** Support the development of three CHRC startups or spin-offs, and facilitate the commercialisation of two existing patented products and one from a new patent application.

# STRATEGIC ACTIONS FOR 2025-2029

### 7. Education and Training Expansion:

Enhance and diversify educational programmes and training opportunities for students, healthcare professionals, and community members in multidisciplinary health research. Develop innovative curricula that bridge basic science, clinical practice, and public health. Additionally, implement robust mentorship and career development programmes to support early PhD researchers and nurture the next generation of healthcare research leaders.

**KPI:** Introduce eight new CHRC programmes or courses (including a new master's programme in medicine), attract 600 annual applicants, support the completion of 300 master's and 50 PhD students per year, and enroll 30 early PhD researchers annually in the CHRC early PhD mentorship programme.

### 8. Creating a Career Development Office:

Establish a Career Development Office to nurture staff and researchers in a personalized manner (counselling) throughout their career trajectories and decisions. This department will facilitate the creation of sustainable career pathways and oversee the development of both associate and full professor positions, as well as senior research roles within CHRC. The MENTORING programme is missing here and also SKILLS DEVELOPMENT courses

**KPIs:** 1) Create 15 permanent associate and full professor positions within CHRC (including FCT-Tenures), 2) Create 15 permanent researcher positions within CHRC (including FCT-Tenures), 3) Establish one Chair position within CHRC.

# STRATEGIC ACTIONS FOR 2025-2029

### 9. Contributing to Global Impact and Decision-Making:

Extend CHRC's global influence by fostering new international collaborations with top-level research institutions. These collaborations aim to address pressing global health challenges and influence the adoption of shared best practices in health policy and practice.

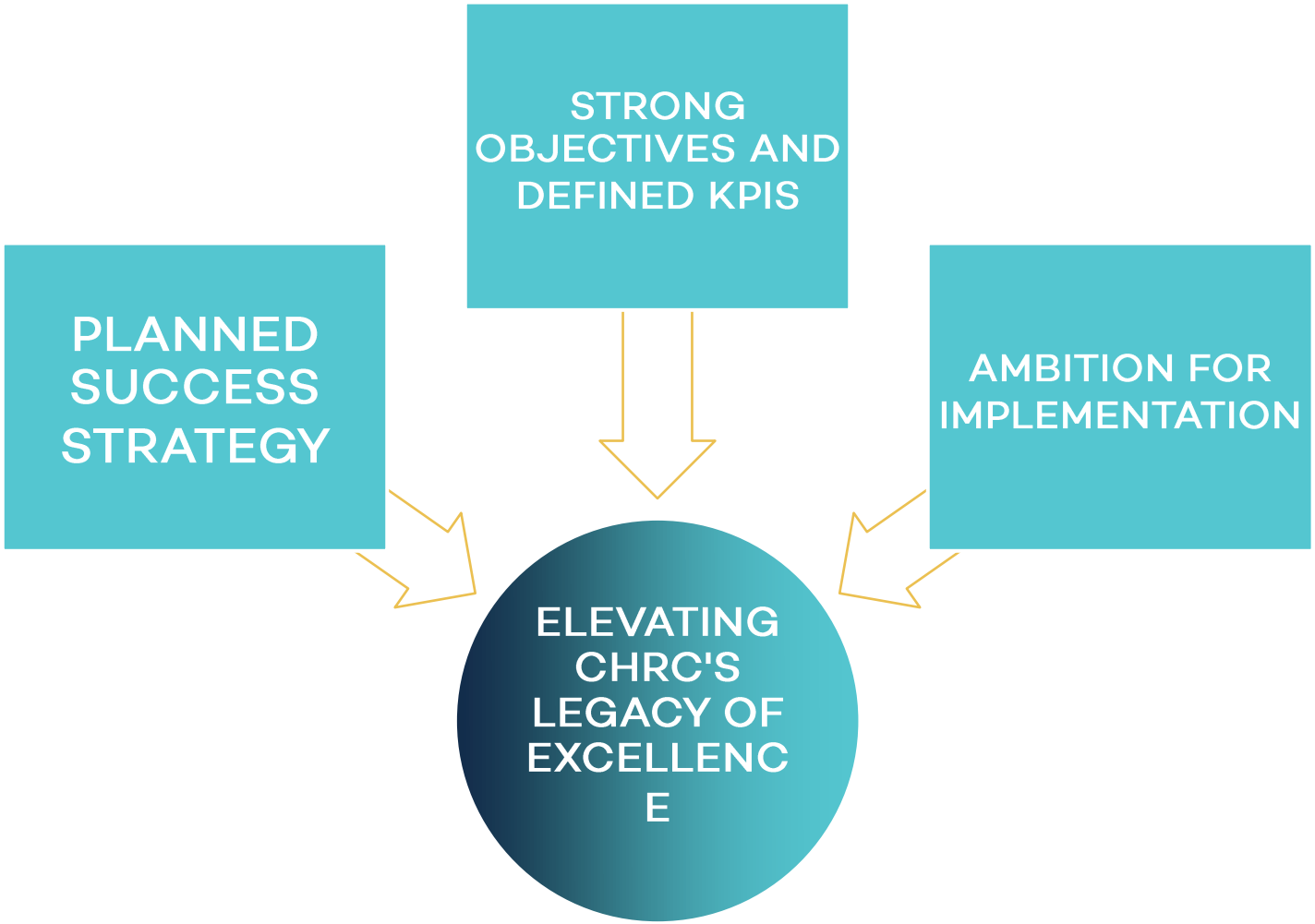
**KPIs:** Establish six new formal collaboration protocols with international top-level research institutions, including partnerships with institutions such as Fiocruz (Brazil), Digital Data Design Institute (Harvard, USA), IDOR and Albert Einstein University (Brazil), and SHEBA (Israel). Ensure the adoption of three shared best practices by peer institutions or through incorporation into government policies.

### 10. Health Equity and Community Engagement:

Engage in research and interventions that specifically target health disparities, focusing on underserved and marginalised populations. Collaborate with local communities, stakeholders, and policymakers to implement culturally competent, evidence-based health solutions.

**KPI:** Develop and implement culturally competent health solutions in collaboration with local communities and stakeholders, including initiatives like Project Maré in partnership with Fiocruz in Brazil.

# STRATEGIC ACTIONS FOR 2025-2029



CHRC

COMPREHENSIVE HEALTH
RESEARCH CENTRE