ISGlobal Our Strategy Up to 2027

ISGlobal Barcelona Institute for Global Health

This document is the result of several meetings and workshops held during 2023 aimed at defining the new strategic cycle in which all members of the institution participated. The document also incorporates the contributions of ISGlobal's relevant stakeholders gathered at the International Global Health Partnership Forum held in Barcelona on the 28th November 2023. The IPGHF discussed key elements of ISGlobal's strategy for the coming years, including the model of preparedness in the era of systemic health crises, opportunities and needs in the future global health science landscape, insights from the Global South, and an integrated approach to the global health crisis. ISGlobal wishes to acknowledge and thank all its members and all the stakeholders for their generosity in defining and refining Our Strategy to 2027.

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01 Mission, Vision and Values

The Mission, Vision and Values defined in October 2013 remain valid and have been maintained for Our Strategy up to 2027.

VISION

A world class research and translation centre in Global Health working towards a world in which all people can enjoy health.

MISSION

To improve Global Health and promote Health Equity, through excellence in research, translation and application of knowledge.

VALUES *[The short explanations provide an overview of the chosen terms]*

1. Excellence
We consider excellence in research and translation as a sine qua non condition to fulfil our mission. This must be achieved through innovative and competitive research, through national, international and multidisciplinary collaborations.

2. Commitment to Global Public Health
We view our research as a scientific area within Global Public Health and express our willingness and commitment towards contributing to Public Health actions to promote the health of populations, nationally but also globally.

3. Independence
We preserve our scientific independence by setting our own goals and through pursuing them accordingly.

4. Respect for Diversity
We develop projects and solutions aimed at meeting the challenges of Global Health, while respecting the diverse social and cultural context where they are implemented.

5. Highest Ethical Standards
We conduct our research following the highest ethical standards and applying existing codes of good scientific practice.

6. Creativity in a friendly work environment
We are committed to promoting respectful and productive workplaces. We honour personal and professional differences and strive to create an environment that allows balance between our professional and personal lives, and that creates a workplace that we can be proud of.

7. Fairness, Accountability and Transparency
We accept our responsibility to ensure that all our activities are open and transparent and that decisions are justified. Our staff members are responsible and accountable for the actions and decisions they make regarding management and research and for the resulting outcomes. We provide assurance that management and research undertaken are appropriate and that policy and legislative obligations are being met.

8. We enjoy our work because work can be fun, fulfilling and exciting.
We enjoy our work and appreciate the fun of being part of an organization that is working for the common global good. Having fun through work means knowing that what we each day can make a positive impact, while being inspired by what we do. We believe a workplace that supports respect for one another, teamwork and diversity of backgrounds and views is a fun workplace.

02 Where Are We Today?

ISGlobal's role as a prominent global health institution has gained importance in the wake of the COVID-19 pandemic and in a world **fully experiencing and suffering the effects of climate change**. It has become increasingly evident that there is a need to integrate knowledge and **incorporate social, economic, environmental, and climate challenges and enablers** into the global health agenda.

ISGlobal's vision and mission align with this global paradigm. We are dedicated to focussing on major health issues worldwide and generating **evidence to support effective solutions**, with an emphasis on reducing disparities and promoting **health equity**. ISGlobal's activity embraces all five continents, with a scope extending from lower-income to middle- and high-income countries, emphasising access to prevention, promotion of healthy habits, and enhancement of health care services, and the impact of social, environmental, and climate factors, especially on the most vulnerable populations.

Our 2019-2023 strategic cycle consolidated ISGlobal as a centre of excellence and an international reference in global health research and knowledge translation. ISGlobal's **accreditation as a Severo Ochoa Centre of Excellence in 2019** allowed us to embrace interdisciplinarity and enhance our capabilities, focusing on frontier methods and technologies.

ISGlobal researchers have made **significant scientific contributions** during the 2019-2023 period in several areas, such as in malaria elimination and control, providing a roadmap for malaria elimination through the Magude project, or demonstrating that the RTS,S/AS01E malaria vaccine may provide broader protection than previously thought; relevant advances in the study of causes of death in low and middle-income countries (LMICs) and their importance for reducing child and maternal mortality; a systematic analysis of suspected environmental obesogens, strengthening the evidence for the association between smoking, pollution exposure and the characteristics of the environment, and the risk of childhood obesity; on the links between health and climate change in Europe, particularly regarding extreme temperatures, supporting a robust, evidence-based response to protect human health in Europe and beyond; and the importance of reducing concentrations of air pollution and road traffic noise and increasing green spaces to reduce premature deaths in European cities. We have also provided valuable insights into various aspects of COVID-19, from the type, magnitude and duration of the antibody response to the identification

of immunogenic regions of the virus and the improvement of diagnostic methods to detect past infections in children and vaccinated individuals.

Complementarily, our innovation, translation and education portfolio of activities continues to provide an indispensable asset to **bring our science close to impact**, both globally and locally.

Today, ISGlobal is experiencing a notable **increase in scientific collaborations and internal synergies**, which has led to **significant growth**. Since 2016, the number of articles published has increased by over 50%, mostly in top-quartile journals, and our media visibility has doubled. In addition, our capacity to attract competitive funding has increased by 150%, and our budget has, for the first time, approached 50 million euros.

Our Strengths Include:

The excellence and diversity within the institution. The pursuit of excellence has consolidated ISGlobal as a reference institution for research, innovation, and knowledge translation in global health. Our growth has mirrored the commitment to diversity in research programmes, namely 1) Global Viral and Bacterial Infections, 2) Environment and Health over the Life-course, 3) Climate, Air Pollution, Nature and Urban Health, 4) Malaria and Neglected Parasitic Diseases, and 5) Maternal, Child and Reproductive Health, and the composition of our staff, which includes experts in various disciplines and with different nationalities.

The integration of science and knowledge translation. Our vision and objectives are firmly based on integrating science and knowledge translation to ensure that the knowledge we generate has a real impact on society. This value-chain approach allows us to generate new scientific evidence and translate it into innovative products, interventions, policies, and practices.

A broad research portfolio from infectious to chronic non-communicable diseases and environmental exposures. This breadth allows us to address global health challenges in a much more holistic way and to increase our level of influence. Our achievements over the last strategic cycle consolidated the key advisory role of ISGlobal (within our areas of expertise in health and vulnerabilities) for trustees and policymakers at the local, regional, and global levels.

The international leadership in our research, especially in the areas of utmost global health relevance: malaria elimination; Chagas disease; antimicrobial resistance; urban planning; environment and health; and maternal, child, and reproductive health.

Our commitment to the principle of equity encompassing the vulnerability of populations in low-income countries, and subpopulations in middle- and high-income countries whose economic, social, cultural, or environmental conditions often marginalise them.

A broad geographical presence and strong partnerships. We have nurtured long-standing preferential alliances in three regions of the Global South, and research and knowledge translation partnerships in many other countries and regions worldwide, covering low-, middle and high-income settings, and thus offering a unique opportunity for impact. Our organisation looks within and beyond Europe.

The public-private nature of ISGlobal. ISGlobal has the support and recognition of key governmental and academic institutions and also counts on the support of philanthropy, which guarantees its agility and financial flexibility.

03 The Global Context in 2023

ISGlobal is fully committed to supporting the 17 Sustainable Development Goals (SDG) of the **2030 Agenda**. Defined in 2015, the 2030 Agenda, the WHO health targets, and the European Union's sustainability goals served as the basis for a **global roadmap** that has evolved significantly.

Two fundamental societal pillars are of particular relevance to our work:

Acknowledging the **importance of science as an essential element for informed health policy decision-making**. The experience of the COVID-19 pandemic has opened up the possibility of unprecedented advances in the control of many diseases and the management of large-scale health interventions. These could have a significant impact worldwide, both in low- middle and high-income environments.

Ensuring healthy lives and promoting well-being through robust and equitable policies and health systems is a matter of strategic interest for all countries and regions. At the planetary level, we have observed an essential principle of global health: the fairest option is often the most effective. The right to health is a solid foundation for better-prepared and more risk-resilient societies.

The global roadmap must be implemented in a complex post-COVID-19 landscape. The upsurge in mortality and morbidity observed over the past three years cannot be solely attributed to the direct impact of COVID-19. The disease burden resulting from the need to prioritise the pandemic response has temporarily side-lined and **impeded efforts to address other global health issues**, both in infectious and chronic non-communicable diseases (NCDs). The challenges of countries and communities battered by the economic crisis, the debt burden, and the repercussions of geopolitical conflicts pose a substantial threat to the advancement of public health, especially among the most vulnerable.

03 The Global Context in 2023

The first-time presence of symposia dedicated to Climate and Health at the COP28 in 2023 has emphasized the all-encompassing global health threats of **climate change linked to fossil fuels, biodiversity loss, air and chemical pollution, and uncontrolled urbanisation**, among other factors. These factors favour the **emergence and spread of diseases** and other health risks linked to forced migration and population displacement. Vulnerable populations around the world will experience more acute and extended impacts from extreme natural events. Therefore, addressing the interactions between climate change and human health and wellbeing stressed by COP28 Declaration on Climate & Health must be at the core of our global health efforts.

04 What Do We Propose?

ISGlobal's mission is to improve global health and promote health equity, through excellence in research, translation and application of knowledge.

To achieve our mission in the current global context, **we must further understand the interplay between infectious diseases, chronic non-communicable diseases and environmental factors**, and their combined and individual impact on human health. Moreover, we must leverage this knowledge to reduce infectious diseases among vulnerable populations, enhance the prevention and management of NCDs, improve the health and wellbeing of women and children living in LMICs, and accelerate the adoption of sustainable climate policies and environmental justice. We can also use this knowledge to expand our capabilities in all-hazards preparedness, response, recovery, and resilience. The ultimate goal of our strategies is to improve human health, from an interdisciplinary but synergistic approach.

As described above, ISGlobal is ideally positioned to address these challenges and will do so in a holistic way, involving society at large and with a strong focus on equity and gender, by:

01 **Promoting impactful research through excellence and interdisciplinarity** across our "bench-to-community" portfolio by leveraging innovative approaches, rigorous methodology, and contextualisation of findings.

02 **Pursuing an open innovation approach** that includes all key players involved in research and innovation to ensure development and access to new diagnostic and therapeutic tools.

03 **Striving for a maximum societal impact of the knowledge generated by research** through strengthening our alliances with knowledge translation organisations, including think tanks, governmental organisations, and multilateral initiatives in Europe, Africa, and the Americas.

04 **Contributing to training the next generation of global health researchers and professionals**, focusing on inter- and trans-disciplinary approaches. This includes expanding the breadth and reach of our international online training programme.

05 **Stimulating and nurturing our long-standing alliances** in Mozambique, Morocco, and Bolivia; promoting their interconnections, and fostering other solid partnerships in other African, Latin American, and European countries.

06 **Integrating communication, open science, and citizen science approaches** to inform and engage the public, raise awareness of significant health issues, and promote societal behavioural change where warranted.

05 Science

In the next four years, we will use our expertise to promote high-quality research to address key global health challenges related to infectious diseases, chronic non-communicable diseases, and environmental factors, including climate. We will strive to progress beyond state-of-the-art by strengthening research within and across our five research programmes and promoting innovation and collaboration on methodological issues through cross faculty knowledge hubs.

To strengthen our research, we will catalyse the use of data and analytic tool, leverage artificial intelligence and further promote multidisciplinarity and collaborations to elucidate disease determinants and develop strategies for delivering impactful interventions. We will develop approaches to connect research and innovation to society and generate impact by promoting a research environment based on trust, transparency, and open science principles, in line with our institutional values.

Our strategic objectives are to:

Reduce the infectious disease burden affecting the most vulnerable populations. We will investigate key biological processes of host-pathogen interactions and their relationships with host responses and pathogen resistance to develop effective and affordable tools for screening, diagnosis, management, and prevention. We will investigate the optimal implementation scenarios of existing or new tools or strategies to control IDs.

Prevent and control NCDs. We will expand the knowledge of their multidimensional causes and mechanisms by encompassing an exposome approach focused on environmental, radiation, occupational, lifestyle, social, infectious, and genetic risk factors throughout the life course.

Accelerate the adoption and implementation of sustainable climate policies that address environmental degradation and the climate crisis. We will continue generating evidence to strengthen our understanding of the effects of air pollution and climate change (including temperature and climate extremes) on health, and assess the co-benefits of climate change adaptation and mitigation.

Improve the health of women and children in LMICs by developing and validating clinical and community interventions for the most common health problems of these populations and their well-being.

Expand preparedness, response, recovery, and resilience activities by using an all-hazards approach. This approach will include developing novel early warning systems, predictive models, and field-deployable tools for real-world situations, to respond to existing and emerging health threats, making health systems better prepared and more resilient.

We address critical global health challenges and adapt to ever-changing world demands with a commitment to scientific excellence. We achieve depth in our research themes through a comprehensive "bench-to-community" approach and while fostering breadth in research through multidisciplinary science. We are committed to generating relevant knowledge for innovation and evidence-based policy-making at all levels.

06 Research Programmes

Global Viral and Bacterial Infections

The main objective of the programme is to reduce the relevant viral and bacterial disease burden by generating knowledge that translates into novel tools and strategies for their prevention, diagnosis, and treatment. We achieve this through a multidisciplinary and translational research portfolio ranging from basic science to clinical, epidemiological, and public health-oriented research.

We work at various steps of the prevention-treatment cascade for pathogens such as *M. tuberculosis*, non-tuberculous Mycobacteria, antimicrobial resistant bacteria, other bacteria of public health relevance (pneumococcus, group B streptococcus, etc.), CMV, HIV, arboviruses, and viral hepatitis. These are responsible for an enormous disease burden globally, especially among vulnerable populations. In addition to a pathogen-specific approach, we tackle these diseases through syndromic approaches: febrile, diarrheal, neurologic, and respiratory infections. The programme covers pathogens that affect globally low, middle-, and high-income countries and those with strong epidemic potential, such as SARS-CoV-2, and influenza.

Work in the programme ranges from local to national and global efforts, with international leadership in areas such as antimicrobial resistance, immunology, epidemiology, and viral infections.

Scientific aims for the next period

1. Understand how the different disease-causing microorganisms infect living organisms (humans and animals) and cause disease, to elucidate potential new targets for the development of new drugs, diagnostic tools or vaccines.

2. Understand how the immune response and the gut microbiota interact to modulate the pathogenesis and virulence of viruses and bacteria. This understanding will help us to determine the role of natural protection from, or susceptibility to infections and diseases, as well as to advise on vaccine and treatment design.

3 Design and develop new antimicrobials against drug-resistant microorganisms in planktonic and biofilm forms, and evaluate their combination with old antimicrobials and phages.

4 Understand the epidemiology, aetiology, and impact of viral and bacterial diseases and syndromes across different populations and the association of exposures and treatments with important health outcomes. This understanding will serve as a basis for advising on strategies to reduce infections in vulnerable populations and developing clinical practice guidelines.

5 Design, develop, and validate screening, diagnostic, and risk-stratification (i.e., "prognostic") tools for different syndromes or major causes of bacterial and viral diseases to ensure prompt and appropriate patient treatment, and provide robust surveillance of infectious diseases.

6 Develop or participate in the clinical development and validation of new preventive, diagnostic, and therapeutic tools across different settings and populations.

7 Encourage the continuous evaluation of new interventions to decrease disease burden and of their uptake and implementation in the appropriate populations. This will be done through monitoring such new interventions, assessing their impact on health, and performing actions in implementation science and public health.

Environment and Health Over the Life-course

The programme aims to conduct high-quality integrative research to expand knowledge on the causes and mechanisms of NCDs. The programme focuses on environmental, radiation, occupational, lifestyle, social, infectious, and genetic risk factors throughout life, from prenatal to late adulthood. Key topics include respiratory, immune, and cardiovascular health, neurodevelopment, and cancer. Our ultimate goal is to prevent and control NCDs, in line with the United Nations´ SDG.

We build on large population-based, clinical, and occupational cohort and case-control studies as powerful platforms for etiological research. We incorporate innovative approaches, such as the study of exposome and omics biomarkers, imaging, and data science. Our work in this programme ranges from local to national and global efforts in low-, middle-, and high-income countries. We have international leadership in exposome, radiation, child health, cancer, and respiratory health research. We have a demonstrated record of research and training in epidemiology, and of research findings translation into policy.

Scientific aims for the next period

1. Assess the prevalence and extent of risk factors and exposures associated with NCDs while advancing methods for exposure assessment.

2. Understand NCDs' causes, development, course, and mechanisms, focusing on respiratory, immune, neurodevelopment, mental, cardiovascular, and metabolic health; birth and pregnancy outcomes; and cancer.

3. Quantify environmental exposures and NCDs burden globally and in LMICs and vulnerable populations (e.g., pregnant women, children, elderly, and socioeconomically disadvantaged people).

4. Advise on interventions and policies for the primary and secondary prevention of NCDs.

5 Strengthen our international leadership in exposome, cohort and network coordination, child and respiratory health; cancer; physical activity; circadian disruption, water, chemical, and air pollution; preparedness to all-hazards; and radiation protection.

6 Progress in areas identified as relevant gaps, particularly life-course and causal inference approaches, healthy ageing, women's health, and LMICs.

Climate, Air Pollution, Nature, and Urban Health

The programme aims to strengthen evidence related to the health effects of climate change and exposures in urban and natural environments and to assess the health co-benefits of climate action. We focus on factors such as temperature, noise, air pollution, and green spaces, and their effect on a spectrum of health outcomes, including premature mortality, cardiovascular and respiratory health, and cognitive function. Our main methods consist in the assessment of exposure and health impact, epidemiological modelling, and intervention evaluation. This research is complemented by computational modelling of global climate variations, tipping points, and their impact on health.

The ultimate objective of the programme is to promote healthy living within planetary boundaries and reduce the health impacts of climate change.

Our research encompasses leverage of geographical information systems, satellite data, and wearable technology for exposure assessment, participatory citizen science, computational modelling, and forecasting. Our international leadership extends to health co-benefits of climate action, green spaces and health, air pollution epidemiology, health impact of urban and transport planning, citizen science, and modelling climate variations in infectious disease transmission. Across our research activities, we use a planetary health framework.

Scientific aims for the next period

1. Assess the impacts of climate variability and change on the epidemiology and course of infectious diseases and chronic non-communicable diseases.
2. Identify the climate change adaptation and mitigation strategies that can be employed to promote health.
3. Study how do air pollution, noise, temperature, exposure to nature and built environment impact health outcomes.
4. Analyse which interventions and policies promote healthy, equitable, and sustainable urban environments.
5. Assess what are the attributable burdens of climate hazards, urban exposome, and nature deficit on health and well-being.

Malaria and Neglected Parasitic Diseases

This programme aims to generate valuable knowledge and expand, through a multidisciplinary approach, our current scientific understanding of malaria, Chagas, and other neglected parasitic diseases (NPD) affecting humans, and their interactions with human and animal hosts and/or vectors. Additionally, it aspires to support evidence-based policy-making at all levels, reducing these diseases as public health problems in endemic areas and among vulnerable populations, with the ultimate goal of advancing towards elimination wherever feasible.

We apply methods that include epidemiology, intervention trials with drugs, vaccines and diagnostic tools, basic molecular biology and immunology, and econometrics. Our efforts range from local to national and global, with

a focus on the areas of the world with the highest disease burden. Capacity building and strengthening are included at all levels, and we promote the translation of research results into impact, also promoting interactions with the Malaria Elimination and the Chagas Initiatives.

Scientific aims for the next period

The programme includes the following three areas of interest:

Basic science that generates knowledge and supports innovation in controlling malaria, Chagas, and other parasitic diseases.

1. Understand the pathophysiology and interactions of malaria, Chagas and other NCP with their human and animal hosts and/or vectors, and how such interactions determine the clinical spectrum and the adaptability to changes in transmission.

2. Characterise the individual immunological heterogeneity and baseline determinants of the susceptibility to malaria and other NPD, as well as identify correlates of vaccine-induced immunogenicity and protection.

3. Further explore the molecular basis, role, and biological significance of extracellular vesicles, new biological/metabolic pathways, cryptic infections, epigenetic mechanisms, and determinants of adaptation and survival in malaria and other NPD.

4. Discover and develop antimalarial and anti-trypanosomatid drug targets with novel modes of action and the potential to inhibit parasite growth across several stages.

5. Identify, validate, and develop multi-infection screening tests, new highly sensitive biomarkers, and diagnostic and prognostic tools for parasitic diseases.

Development and evaluation of new tools/strategies for preventing, diagnosing, and treating parasitic diseases and vectors related to human diseases from a multidisciplinary point of view.

6 Clinically develop and evaluate, with a particular focus on vulnerable populations, new drugs, therapeutic and preventive schemes, adjuvant therapies, immunisation strategies, and better diagnostic, prognostic, and surveillance approaches for malaria, Chagas, and other parasitic diseases.

7 Implement *in vitro* models (organs-on-a-chip), *in vivo* models (*P. knowlesi* and humanised mice), and OMICs to advance studies on *P. vivax*.

8 Understand vector bionomics in pre-elimination areas; support local efforts for the elimination of malaria; and evaluate new vector control tools, including endectocide drugs, novel insecticide residual spraying, and long-lasting insecticide-treated nets products.

9 Identify and measure the impact and cost-effectiveness of tools and strategies for controlling and eliminating malaria, Chagas, and other NPD, with a focus on disentangling cross-sectorial mechanisms that lead to the final outcomes, to better support policymakers.

Surveillance and implementation science in the context of a changing climate.

10 Design and assess the operational performance, barriers and facilitators, and impact of innovative programmatic implementation strategies of health care tools in endemic countries to overcome barriers to high coverage and quality of interventions in collaboration with the national implementers, policymakers, and stakeholders, and to support translating the evidence generated into national and global health policies for control and elimination of malaria, Chagas and other NPD.

11 Evaluate the complex role of climate change in the incidence and geographic spread of malaria and other NPD worldwide, and contribute to improving affected societies through enhancing preparation and multi-scale alert systems.

Maternal, Child, and Reproductive Health

The programme aims to bridge the know-do gap and support the global efforts to ensure that all women and children, regardless of where they live or are born, have access to quality healthcare services. Despite remarkable global progress, women's and children's health still face disproportionate inequalities in access to healthcare and healthcare quality. Neglected diseases heavily impair maternal and newborn mortality in LMICs. HIV/AIDS, malaria, anaemia, and tuberculosis are among the leading causes of maternal mortality. Moreover, the most essential maternal and reproductive health interventions often do not reach the most vulnerable women, girls, and children in low-income countries. Our research focuses on developing and assessing the efficacy and effectiveness of maternal and reproductive health interventions through relevant clinical trials and implementation science. The programme´s research is tightly intertwined with the Maternal, Child, and Reproductive Health Initiative, allowing us to integrate the work of the different areas of ISGlobal´s research, training, policy, and global development.

1 Assess the interventions for the control of malaria, HIV, and anaemia, in pregnancy and childhood in endemic countries.

2 Establish surveillance mechanisms to better determine the causes of death in pregnant women and children in LMICs and translate these data into actionable prevention recommendations.

3 Examine the emergent infectious disease burden in pregnancy.

4 Generate epidemiologic, safety, efficacy, and effectiveness data to support the introduction of maternal immunisation for high-burden diseases among infants in LMICs.

5 Identify and develop strategies to overcome maternal and reproductive health inequalities.

6 Identify the disease burden and develop actionable prevention strategies to improve adolescent health in LMICs.

07 Innovation

ISGlobal promotes the translation of the results of its research into value-based and equity-driven health products and solutions through a strategy of innovation with a clear focus on implementation. This innovation strategy builds on the awareness and training efforts to create an **entrepreneurial and innovative mindset** across the organisation that embraces open and participated innovation, impactful outcomes, health equity, and SDGs.

To achieve this ambitious strategy, we base our technology and knowledge exchange activities on scientific excellence and the needs and preferences of the communities, working closely with our large network of partners and alliances, with a particular emphasis in low and -middle income settings, whereby innovation can be more impactful.

We aspire to **consolidate an open innovation network** that makes a tangible difference in the global health areas where we focus. In particular, our efforts are concentrated on rapid and efficient disease prevention, diagnosis, and management strategies.We also support science-based initiatives for prevention and implementation policies to alleviate or mitigate the environmental and health risk factors associated with a high global disease burden.

The above points will be pursued by executing **our three strategy pillars**:

Train

Increase the innovation awareness, culture, and know-how within the research community.

Grow

Enhance and utilise our capabilities to increase innovation input and output.

Impact

Consolidate and expand our alliance network with key strategic partners in the public and private sectors. Reinforce our knowledge and technology transfer and start-up creation activities to maximise the impact of our research efforts.

08 Education and Training

The ISGlobal Education & Training (E&T) department aims to **increase health equity by educating and training researchers, professionals, and future leaders** in global health worldwide. Our educational programmes and products adhere to the principles of global perspective (which are inter- and trans-disciplinary); equity, diversity, and inclusiveness (EDI); and sustainability and societal impact. These educational programmes are **based on the most recent scientific insights**, building on the work of ISGlobal's scientific programmes and initiatives.

Training young researchers (master, doctoral, and postdoctoral education) is at the core of our vision and mission, building on our strengths as a global reference in global health research associated with two leading European universities, the University of Barcelona (UB) and the University Pompeu Fabra (UPF). We strive to **align our training with the evolving demands of the global health workforce**, which are also reflected in ISGlobal's expertise and scientific strengths. Our programmes cater to the student´s needs through a student-centric approach, fostering high-quality and interactive education through learning-by-doing approaches, mutual learning, and mobility among faculty and students.

01 Empower **our students in their career development** by generating new short-, medium-, and long-term training activities and resources. This training involves a combination of theme-specific knowledge and cross-cutting competencies, which enables students to become influential change-makers and leaders who tackle pivotal global health issues.

02 Ensure a **balanced mix of online, face-to-face, and hybrid learning** tailored to specific learning outcomes, student-faculty needs, and global accessibility. We will prioritise using appropriate technologies to increase access for participants and experts worldwide, especially from LMICs and hard-to-reach regions.

03 Support **high-quality supervision and mentorship for doctoral students** through our doctoral programme, which ensures the provision of core and transferable competencies that contribute to the career development of future researchers and scientific leaders.

08 Education and Training

04 Encourage **diverse perspectives and approaches in education and training** (geographical, gender, cultural, methodological, etc.) and actively and constructively contribute in the movement and debate on decolonising global health education. This point aligns with our commitment to place EDI at the core of all education and training activities.

05 Improve **access to our training programmes** for national and international students from diverse disciplines, professional backgrounds, and expertise, focusing on those with less access to quality global health education in LMICs. We will strive to contribute to training the next generation of professionals in LMICs by supporting postgraduate students and promoting mentorship skills.

06 Support and increase **activities for the ISGlobal alumni network** to incentivise their active and continuous engagement as an ISGlobal community of researchers and professionals working in global health worldwide.

09 Policy, Global Development, Communication, and Outreach

The goal of ISGlobal's departments of Policy, Global Development, Communication, and Outreach **is to boost the impact of knowledge and science generated by our researchers in society**. This is achieved by i) reaching non-scientific audiences for social and behavioural change, ii) bringing analysis into public opinion and decision-makers), and iii) contributing to health equity through sustainable programmes and influencing the global health agenda.

Our actions are defined by the following:

- Recognising and assessing the impact that research and knowledge can have on society.
- Identifying and proposing the best action strategies at the policy and citizen levels.
- Establishing partnerships and alliances at local, regional, and global levels.

Priorities:

01 Develop an impact-oriented translational model to establish the pathways for our research and other activities to impact society. Plan, identify, and measure the impact of the different scientific areas beyond academia, as part of an institutional-wide impact strategy.

02 Strengthen the deployment and impact of the existing initiatives in antimicrobial resistance, Chagas disease, malaria elimination, maternal, child, and reproductive health, and urban planning, environment and health.

03 Critically review and appraise the role of the initiatives (and their number) in our impact generation and translation model.

04 Strengthen ISGlobal's influence as a reference institution in global health for key stakeholders, including politicians, decision-makers, and funders. We will target advocacy efforts to enhance the influence of ISGlobal in the European Union's policy-making forums.

05 Enhance the integration of the translational perspective in research project proposals.

06 Adapt a communication strategy for new paradigms, including artificial intelligence, adapting to the evolving social networks, and continuing to innovate on audio-visual and narratives on global health.

07 Define a new strategic approach to integrating the citizen science, patient experience, and outreach activities.

08 Coordinate the institutional analysis and debate on inclusiveness and decoloniality of global health.

09 Identify and develop new collaboration opportunities within international partners whilst adhering to principles of equitable partnerships, which include respect, reciprocity, and commitment to strengthening capacities in LMICs.

In addition to supporting the different research programmes, this department will also focus its activities on transversal and institutional-wide areas crucial to global health, such as:

Climate and health agenda

Migration and health

Preparedness and response

Immunisation and vaccines

Specific priorities for strategic alliances and partnerships in the Global South:

ISGlobal recently constituted an internal partnership working group 1) to consolidate the experience and knowledge gained in the long-term and preferential strategic alliances with Mozambique, Bolivia, and Morocco, and in other partnerships with institutions in LMICs; and 2) to establish the foundations for a common institutional strategy. We will pay specific attention to ensuring principles of equitable partnerships through an outcome-centred approach driven by mutually agreed transformative goals to ameliorate emerging disparities within global health partnerships. While our model will attempt to promote common and multi-partner activities among the three preferential partners, we also present the specific priorities by strategic alliance:

Mozambique and sub-Saharan Africa:

- Develop and execute the joint scientific strategic plan between ISGlobal and the Manhiça Health Research Centre-Fundação Manhiça (CISM-FM), which includes research for health priorities in sub-Saharan Africa and training the next generation of Mozambican researchers.
- Strengthen the recently initiated clinical trial platform PANTHER (preparing a rapid response to emerging infectious diseases in Africa) with our European and African allies, while fostering new alliances through the clinical trial centres network. Other platforms and initiatives promoting coalitions of African institutions will be also considered.
- Strengthen our collaborations with other key strategic sub-Saharan African partners, including West-African countries.

Morocco and Middle East-North Africa (MENA) region:

- Promote the establishment of the Mediterranean Health Observatory based in Morocco to enhance the health of the population in Morocco and the Maghreb region. Through research and translation, this initiative aims to reinforce our position and promote dialogue on the Mediterranean region as a hotspot for health-related challenges on climate, migration, and infectious diseases.

Latin America:

- Support the expansion of the Platform for Integral Care of Chagas in Paraguay through our agreement with the *Agencia Española de Cooperación Internacional para el Desarrollo* (AECID).
- Reinforce our institutional collaboration with SANIT foundation (Salud, Naturaleza Integral), in Bolivia, through the implementation of projects in Chagas and planetary health. We will also explore collaborations in antimicrobial resistance.
- Promote research and translation collaborations with Fiocruz, in Brazil, with a special focus on infectious and neglected diseases of global relevance.

Our partnerships, alliances and networks with institutions from the Global North, some of which also long standing, will also be reinforced and, when applicable, expanded.

10 The Initiatives

In our previous strategic cycle, the five initiatives embarked on an external and independent review process that culminated in a proposal for concrete translational indicators. These indicators will form the basis for the evaluation of the initiatives and the review of the model to determine their continuity, reformulation and/or wider integration into other areas of ISGlobal scientific excellence.

Antimicrobial Resistance

The antimicrobial resistance (AMR) initiative focuses on preventing and mitigating the health impact of antimicrobial resistance. To bridge the education gap, the initiative is developing an intensive educational activity targeting clinical and non-clinical health professionals and the education community. A concerted effort is also made to disseminate essential knowledge to citizens, patients, and healthcare professionals through engaging activities. Such activities include citizen science and participatory workshops, science festivals, and training programmes at high schools, universities, and primary healthcare institutions. Moreover, we will increase our active participation in public consultations and initiatives at the international and national levels. Indeed, the fight against antimicrobial resistance transcends borders and requires a concerted global development effort. This includes establishing an international and interdisciplinary network that addresses antimicrobial resistance as a global health threat, including collaborative actions in Latin America and North Africa.

Chagas Disease

The primary goal of the Chagas initiative is to foster and generalise comprehensive healthcare for patients with Chagas disease. Such goal includes the following specific aims: (i) create disease awareness and generate demand for healthcare, (ii) give access to timely and accurate diagnosis, (iii) provide etiologic and non-etiologic treatment, and (iv) ensure clinical follow-up of patients in endemic and non-endemic regions. A crucial element of the initiative is the involvement of affected communities in research questions and the demand for healthcare services, contributing to Chagas disease awareness at local, national, and international levels.

The most relevant impact of the Chagas initiative has been establishing the platform for integral care of patients with Chagas disease in Bolivia and Paraguay as a healthcare model to better attend patients in the public health system. For the coming period, we aim to adapt this successful model of care, widening our scope and including cardiovascular diseases.

Malaria Elimination

The malaria Elimination initiative aims to generate scientific evidence, ensure its application into policy and practice, and build capacity to increase the impact of scientific research on the health of the most vulnerable populations affected by malaria. These points will help us to improve equity and move towards the long-term goal of a malaria-free world. For that, the initiative will promote innovative approaches and scientific evidence to the fight against malaria; also, it will respond to the needs and priorities of affected countries; and finally, it will promote the creation of strategies in collaboration with national health authorities and stakeholders. For the new period, the initiative aims to strengthen alliances in implementation science and training, focusing on partners from malaria-endemic countries. We will consolidate the role of the MESA Alliance (https://mesamalaria.org/) as a key player supporting evidence management and bringing implementers and researchers together in communities of practice around major problems. Finally, we will work on key translation gaps in ivermectin as a novel vector control tool for malaria, and build on our role as WHO Collaborating Centre for Malaria control, elimination, and eradication.

Maternal, Child, and Reproductive Health

The maternal, child, and reproductive health initiative aims to improve the health and well-being of the most vulnerable groups of women, adolescents, and children in LMICs. This goal will be reached through research on the most pressing health problems of such groups, translation of the generated knowledge into policies, advocacy, and capacity building. We will conduct activities to design, evaluate, and implement strategies and tools to improve access to evidence-based interventions on maternal, newborn, child, and

reproductive health. Capacity building of health professionals in the development regions and engagement of the communities are strategic tools to raise awareness, improve knowledge and skills, and improve and extend the reach of our interventions.

Urban Planning, Environment, and Health

The main goal of the urban planning, environment, and health initiative is to potentiate the impact of research on policy and society by translating evidence and tools that promote healthy and sustainable urban development. This goal will be reached through knowledge translation, including research, innovation, policy, communication and dissemination, capacity building, and collaboration with diverse stakeholders. Our strategy for the coming period includes exploring potential areas for growth, such as ageing and preparing cities for ageing populations, greening of cities, housing reform, climate neutrality, and connecting climate and health agendas. We also plan to consider a potential role for ISGlobal as a WHO Collaborating Centre for Urban Health.

11 Governance, Leadership, and Management

Our institution is committed to taking a significant step forward as an already leading, evolving, efficient, and sustainable organisation. Building upon our strengths, we aim to enhance our governance, leadership, and management practices to further elevate our performance.

Under the governance pillar, **strengthening existing strategic partnerships with our trustees** is crucial. We recognise the importance of their continued support and aim to foster their engagement and ownership of ISGlobal's strategy and progress, through effective communications, accountability dynamics, and a reinforced external communication. We will also work together with relevant neighbouring initiatives and upcoming opportunities linked to our trustees, such as the La Caixa Research Institute, the Pompeu Fabra University Centre for Research and Innovation on Planetary well-being, and the International Centre for Public Services Innovation of the Diputació de Barcelona. Additionally, seeking high-level advice from the External Advisory Committee (EAC), conducting the periodic evaluations from CERCA and the external evaluations of the management activities will contribute to our excellence.

In line with our vision for an evolving organisation, we will aim to consolidate and eventually renew our **Code Plan** for this period, and focus on fostering collective intelligence, cohesion, and better responses to global health challenges. We aim to further define our succession plans for key positions, ensuring smooth transitions and uninterrupted operations. Three key elements to this plan will be prioritised: 1) empowering the hybrid organisational model; 2) updating decision-making spaces, especially the role of middle managers, to promote a more efficient and agile working environment; and 3) prioritising internal communication to facilitate collaboration and knowledge sharing among team members.

Our **human resources strategy** places people at the centre of our organisation and recognises the value of diversity and plural perspectives. Diversity and gender equity are key principles that have been and will continue to be embedded in all our activities and at all levels. Our commitment to equal opportunities will be reflected in recruitment and promotion processes, ensuring a balanced representation of genders in decision-making positions. Moreover, we will strive to create inclusive, toxicity-free and psychologically safe working environments that foster constructive interactions, advancement and well-being for all.

The **Projects Unit** will continue providing excellent support to researchers, other departments and stakeholders, focusing on enhancing the skills, leadership and internationalisation of its members, and fostering collaboration with national and international networks. Our efforts will be directed towards supporting researchers in navigating the Open Science framework and new evaluation paradigms, ensuring high ethical standards, integrity and quality and standardization of monitoring in our scientific endeavours. In line with the commitment to quality, the Projects Unit will coordinate the development and implementation of the strategic foundations and ensure effective monitoring and reporting through established indicators.

All **management areas** are fully committed to providing a high-quality and efficient service to the entire institution, contributing to the evolution of the organisation in the post-pandemic era, and managing the challenges of a hybrid work model. We will deploy sustainable practices to ensure a workspace for all staff, guaranteeing the best conditions in an adequate, safe, and healthy environment. We will work to achieve greater efficiency in procurement and financial management, and upgrade our ICT infrastructure and resources to guarantee the security of our data, and our protection against criminal cyberattacks. By implementing a robust corporate risk management plan, we can identify and mitigate potential risks, fostering a culture of compliance and transparency. These strategic initiatives will provide optimal support to internal clients and stakeholders, empower informed decision-making, and drive overall organisational success.

Annexes

Swot

Strengths

1. International leader in global health research and translation, with scientific excellence and multidisciplinary expertise in infectious and chronic non-communicable diseases, and their environmental and climate determinants.
2. Global strategic partnerships, networks, and alliances, both in HIC and, with particular relevance, in LMICs.
3. Integrative "research into action" translation model that integrates policy, communication, development, and outreach.
4. Plural and private-public governance partnership that strengthens our sustainability and operational capabilities.
5. Consolidated partnership with two top Spanish universities, sharing a campus with two leading hospital-based health research institutes and members of the SOMMa alliance.
6. Solid and well-recognised postgraduate education, and training programmes.
7. Strong recognition beyond scientific audiences and communication capacities.
8. Our scientific goals and transversal approach are aligned with the 2030 agenda on sustainable development (SDGs) and other initiatives such as the Green Deal, and the COP agreements.
9. Internal and external knowledge and growing network for an All-Hazards approach to Preparedness and Response to environmental and public health crises.

Weaknesses

1. Imbalance between the structural and competitive funds, that put in risk sustainable growth and the achievement of the institutional goals.
2. Not enough resources to capitalise on the many internal opportunities for impactful innovation.
3. Lack of KPIs for impact measurement.
4. Lack of sufficient resources to maintain and enforce critical mass in several scientific areas.
   The analysis should consider that a wide programmatic scope hinders focus on priority areas.
5. Coming retirements in several research areas and decision-making positions.
   This requires developing the succession plans, considering the in-kind contributions, and the inverse pyramid situation related to research groups' seniority.
6. Insufficient structural scientific and technical support and (core) facilities (such as computing, biobank, birth cohort coordination, etc.), and a space problem, especially for the lab. This leads to a dependency on core facilities and lab space in other centres.

Annexes

Opportunities

1. Decolonization and fair research process that, in the long term, will allow us to build more equitable and stronger partnerships.
2. The approval and implementation of a European and Spanish global health strategy, and the ability to influence the European agenda during the Spanish presidency of the EU.
3. New work models and organisation (i.e., teleworking).
4. Increasing opportunities to access available databases and resources – Big Data and Open Science.
5. Increasing need-driven demand for online/digital education in global health.
6. Social demand for quick, effective responses to environmental health crises and epidemics, and to the migration flows expected in the global health context. ISGlobal is very well positioned to respond to social demand for quick, effective, multi-level, and coordinated responses to environmental health crises and epidemics.
7. Social awareness of science importance, and increasing demand for citizen engagement, with a specific momentum in areas where ISGlobal is strong, fostered by the COVID crisis.
8. Specific funding opportunities in the EU context, including Horizon Europe, EDCTP3, and Next Generation among others. Brexit should be also considered in this context.
9. Development of the La Caixa Research Institute and plans for a new campus expansion on planetary well-being at UPF, and the DIBA´s Escola Industrial facilities.
10. Increasing recognition of the value of digital interventions to improve health systems and global health, including AI.

Threats

1. Geopolitical situation and economic consequences of global instability (e.g. inflation, decrease in funding for research, especially in the context of global health research).
2. Limitations on international mobility.
3. Difficulties in attracting talent due to relatively low salaries in Spain and high turnover in the labour market.
4. Increasing risks due to visibility, including cyberattacks, and reputational risks.
5. Uncertainty in sustainable funding for Global Health institutions in the North and for strategic international partnerships in Low and Middle-Income Countries, due to funding transfer to partner institutions as part of the decolonization process.
6. Complex and rigid laws under development/implementation: transparency, public purchase, travel and migration permits, data protection, labour law.
7. Lack of understanding of the private non-profit nature (as ISGlobal), which could impact the eligibility to some funding agencies' calls.

Strategic Plan 2023-2027

ISGlobal Barcelona Institute for Global Health

VISION

A world class research and translation centre in global health working towards a world in which all people can enjoy a healthy life

MISSION

To improve global health and promote health equity, through excellence in research, translation and application of knowledge

VALUES

1. Excellence
2. Commitment to global public health
3. Independence
4. Respect for diversity
5. Highest ethical standard
6. Creativity in a friendly work environment
7. Fairness, accountability and transparency
8. We work because work can be fun, fulfilling and exciting

OUR DIFFERENTIAL VALUE

To respond in an interdisciplinary and integrated manner to health problems that transcend geographical, social or political boundaries, focusing on communicable and non-communicable diseases and the impact of climate and environment on health, with special emphasis on the health of the most vulnerable.

CONTEXT

EXTERNAL CHALLENGES

- Global impact of environmental degradation and the climate crises on health
- Adjusting power balances for equitable partnerships
- Worldwide setbacks in health and education of women and girls
- Inequity in combatting infectious diseases and antimicrobial resistance
- Growing incidence in non-communicable diseases and ageing populations
- Migration, refugees and expanding urbanisation

EXTERNAL OPPORTUNITIES

- SDGs, Planetary health framework
- Growing adoption of science-based decision and policy making
- Global commitments to bridging science with citizens and society

INTERNAL CHALLENGES

- Balancing sustainability and growth
- Adapting to an evolving institutional culture
- Generational renewal of faculty

INTERNAL STRENGTHS

- Science strongly aligned with current and future global health challenges
- Favorable environment in our local, national and international institutional context
- Presence in multidisciplinary global networks in research, education and translation

SCIENCE

Climate, Air Pollution, Nature and Urban Health

AIM To strengthen the evidence base on the health effects of climate change and urban exposures, and to assess the health co-benefits of climate action.

FOCUS on exposures such as noise, air pollution, temperature and green spaces on outcomes such as premature mortality, cardiovascular and respiratory health and cognitive function, and on computational modelling of global climate variation, tipping points, climate-sensitive infections and their impact on health.

ULTIMATE GOAL is to support healthy living, and to predict and mitigate the health impacts of climate change.

METHODS geographic information systems, satellite data, smartphone technology and participatory citizen science for exposure assessment, health impact assessment, computational modelling, and forecasting.

Environment and Health over the Lifecourse

AIM To expand knowledge on the causes and mechanisms of non-communicable diseases (NCDs)

FOCUS on environmental, radiation, occupational, lifestyle, infectious, and genetic risk factors throughout the lifecourse, from prenatal to late adult life. Key outcomes include respiratory health, neurodevelopment, cardiovascular and cancer.

ULTIMATE GOAL is to prevent and control NCDs, in line with the SDGs.

METHODS build on networks of longitudinal population-based cohorts and case-control studies as powerful platforms for aetiological research, incorporating innovative approaches such as the exposome, omics biomarkers, imaging, and data science.

Global Viral and Bacterial Infections

AIM To improve the understanding of the physiopathology of and immunity to viral and bacterial infections in vulnerable populations, and to develop tools for screening, diagnosis, treatment and clinical management.

FOCUS on tuberculosis, antimicrobial resistant bacteria, HIV, viral hepatitis, neglected or emerging viral infections, infections of global reach such as influenza and cytomegalovirus, and syndromic approaches to infant febrile illnesses, diarrheal diseases, and respiratory infections.

ULTIMATE GOAL is to reduce the disease burden of viral and bacterial infections that affect vulnerable populations and/or are of global concern.

METHODS molecular biology and immunology, clinical epidemiology, mathematical modelling and implementation and operational research.

Maternal, Child and Reproductive Health

AIM To develop and validate clinical and community interventions for the most prevalent health problems of women and children living in low- and middle-income countries (LMICs), and support evidence-based policy-making.

FOCUS on barriers to quality obstetric and child care, on the leading causes of maternal and child mortality, namely HIV/AIDS, malaria, respiratory and diarrheal diseases, and on maternal immunisation,

ULTIMATE GOAL of reducing maternal and infant mortality and improving the health of women and children living in LMICs.

METHODS encompassing clinical trials, epidemiology, social sciences and implementation research in infection control strategies. We embed capacity building and dissemination at all levels of research.

Malaria and Neglected Parasitic Disease

AIM To support evidence-based policy-making at all levels for the reduction of malaria and other parasitic diseases in high-burden areas, and to advance our current scientific understanding of the pathogenesis of major parasitic diseases affecting humans and their host-vector interactions.

FOCUS on malaria, Chagas and neglected tropical parasitic diseases such as soil-transmitted helminths and leishmania.

ULTIMATE GOAL is to progress towards disease elimination wherever feasible.

METHODS epidemiology, intervention trials with drugs, vaccines and diagnostic tools and basic molecular biology and immunology.

TRANSLATION

Creating and maximising the impact of ISGlobal's research

- Advance doctoral/postdoctoral capabilities through innovative models of training, supervision, mentoring and support.
- Expand breadth and reach of online international trainings.
- Pursue an open innovation approach: training, growth and impact.
- Grow our preparedness, response, recovery and resilience activities.
- Stimulate and nurture our longstanding collaborations in LMICs & alliances with translation organisations.
- Expand communication, open science and citizen science approaches throughout our portfolio of activities.
- Enhance the societal impact of our research by leveraging our initiative model: an instrument for translating research findings into solutions within our flagship areas: Antimicrobial Resistance, Chagas, Malaria Elimination, Maternal Health and Urban Health.
- Identify strategies to achieve social impact.

INTEGRATIVE AND INTERDISCIPLINARY APPROACH

Connecting infections, non-communicable diseases, and the environment for impact

1. **To investigate** host-pathogen interactions at the single-cell level coupled to multi-omics, multidimensional and deep immune profiling to understand key biological processes underlying infectious diseases (IDs) pathogenesis and host responses, and evaluate the impact of NCDs and environment.
2. **To elucidate** the multidimensional causal pathways of NCDs through holistic exposome studies integrating research areas on environmental risk factors, IDs and NCDs with multi-omic characterisation of biological pathways.
3. **To develop** novel early warning systems, predictive models, and field-deployable tools for real-world applications to respond to existing and emerging health threats and to improve surveillance and events prediction of IDs and NCDs.
4. **To quantify** the health implications of climate change adaptation and mitigation through modelling and impact assessment of interventions and policies.
5. **To enhance** approaches to connect research and innovation to society and generate impact.

ISGlobal Barcelona Institute for Global Health

A partnership of: "la Caixa" Foundation

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