



2023 key figures

57

years in the fight against infectious diseases

4

areas of intervention

25

countries where we work

150

employees in 16 countries

26M€

of annual budget

+ 100

ongoing projects in development or support

17

laboratories of excellence built or under construction, and transferred to local partners since 2004, + 70

laboratories renovated since 2005

5

advanced courses for public health experts

16

scientific conferences and workshops organized worldwide

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Fighting against infectious diseases since 1967

The world is undergoing profound changes, leading to crises, which multiply in all regions. Whether political, security-related, demographic, economic and climatic in nature, all crises contribute to worsening the health conditions of affected populations, creating an ideal breeding ground of development and spread for epidemics. Low-income countries are the hardest-hit by these increasingly complex contexts, with mothers and children at the forefront.

This is why the Mérieux Foundation, an independent foundation with public interest status, has been fighting infectious diseases affecting vulnerable populations in resource-limited countries since its creation in 1967.

Operating directly in more than **25 countries**, it is committed to **strengthening local capacities**, **particularly in clinical biology**, in order to improve access to care, surveillance and response to epidemics.

The foundation works **side-by-side with local partners and builds networks** to mobilize the skills and energies necessary to implement effective and sustainable actions, at the closest of the population's needs.

It is particularly involved in the public health issues that have the greatest impact in the countries where it operates, such as antimicrobial resistance, tuberculosis, acute respiratory infections, HIV, and emerging pathogens.

Committed to a **global health approach**, the Mérieux Foundation goes beyond its expertise in biology to include the main and most impactful issues that influence the well-being of the populations in the countries where it operates.

An action based on four pillars

A collaborative dynamic

driven by international cooperation, to sharing experience and skills, with no boundaries between expertise or sectors.

A long-term vision

with sustained support leading to autonomy and local ownership of infrastructures, skills and programs.

A global health approach

taking into account factors that have a direct impact on health, such as access to care, education and socio-economic support for patients, and nutrition.

Strong local roots

supported by national teams in the field and long-standing partnerships with local actors.

An approach closely linked to the Sustainable Development Goals The Mérieux Foundation works independently in the service of global health. By adopting a «One Health» approach, it contributes to achieving several of the United Nations' Sustainable Development Goals.

Its cross-functional and international activities are focused on SDG #3 «Good health and well-being», SDG #4 «Quality education», SDG #9 «Industry, innovation and infrastructure», and SDG #17 «Partnerships for achieving the Goals». Within each of these goals, several targets directly concern the Foundation's action, such as target 3.3, which aims to end the tuberculosis epidemic worldwide by 2030.



One mission, four main objectives

Increasing

vulnerable populations' access to diagnostics by strengthening clinical laboratories in national healthcare systems.

Enhancing

local applied research capabilities collaborative programs development.

Encouraging

knowledge-sharing and public health initiatives working with Les Pensières Center for Global Health.

Improving

conditions for mothers and children taking a global health approach.







Bangladesh

Partner Laboratory: Rodolphe
Mérieux Laboratory within the BITID,
→ Chittagong

Benin

Team: 1 employee

Brazil

Partner Laboratory: Rodolphe Mérieux Laboratory within the Fundhacre Hospital, Rio Branco, → Rio Branco

_ ____

Burkina Faso

Team: 1 employee → Bobo-Dioulasso

Partner Laboratory: Microbiology laboratory at the University Hospital of Bobo-Dioulasso*,

→ Bobo-Dioulasso

Cambodia

Team: 2 employees

→ Phnom Penh

Partner Laboratory: Rodolphe Mérieux Laboratory within the University of Health Sciences,

→ Phnom Penh

Cameroon

Partner Laboratory:

Hygiene and Environment Laboratory at the Centre Pasteur

du Cameroun

→ Yaoundé

China

Team: 1 employee → Beijing

Partner laboratory: Christophe Mérieux Laboratory within the Institute of Pathogen,

→ Beijing

DR Congo

Laboratory Partner: Laboratoire Rodolphe Mérieux au sein de l'INRB, → Goma

France

Team: 73 employees

→ Headquarters, Lyon

Team: 19 employees

→ Les Pensières, Center for Global Health

Guinea

Team: 3 employees → Conakry

Haiti

Team: 1 consultant

Partner laboratory: Laboratoire Rodolphe Mérieux au sein des Centres GHESKIO,

→ Port-au-Prince

Laos

Team: 10 employees → Vientiane

Partner laboratory: Rodolphe Mérieux Laboratory within the Center of Infectiology Lao Christophe Mérieux,

→ Vientiane

Lebanon

Team: 5 employees

→ Beirut

Partner laboratory: Rodolphe Mérieux Laboratory within the Saint Joseph University

→ Beirut

Madagascar

Team: 9 employees

→ Antananariya

Partner laboratory: Rodolphe Mérieux Laboratory within the Charles Mérieux Center for Infectious Disease,

→ Antananarivo

Mali

Team: 3 employees

→ Bamako

Partner laboratory: Rodolphe Mérieux Laboratory within the Charles Mérieux Center for Infectious Disease,

→ Bamako



Morocco

Partner laboratory: Rodolphe Mérieux Laboratory within the Institut Pasteur du Maroc*,

→ Casablanca

Myanmar

Team: 6 employees

→ Mandalay

Laboratory Partner: Public Health Laboratory

→ Mandalay

Niger

Team: 3 employees

→ Niamey

Republic of Congo

Laboratory Partner: Christophe Mérieux Infectious Disease Research Center → Brazzaville

Senegal

Team: 10 employees

→ Dakar

Tadjikistan

Laboratory Partner: National Public Health Reference Laboratory (NPHRL)

→ Dushanbe

Togo

Team: 4 employees

Tunisia

Laboratory Partner: Rodolphe Mérieux Laboratory within the Institut Pasteur de Tunis,

→ Tunis

USA

Team: 1 employee

→ Mérieux Foundation USA

One of the main pillars of the Mérieux
Foundation lies in its capacity for direct
intervention in the field, from the network
of 17 laboratories of excellence built at the
source of outbreak-prone regions, to the
presence of local teams in 16 countries.
To carry out its mission, the Mérieux
Foundation can rely on its expertise, its
great experience in the field and its local
partnerships built up over more than 15
years of international development.

The Mérieux Foundation MORION



Alain MÉRIEUX President

President's message

Our world has inevitably changed, fundamentally challenging the traditional order and how we operate.

New and ongoing conflicts are taking place, some of them on our doorsteps. Certain countries are tightening their borders. Climate change is here, and with it comes a loss of biodiversity. The consequences for humans, animals, our ecosystems, and the microorganisms that surround us are clear to see.

The world has always been complex, but now it is also infinitely brutal and unpredictable.

The consequences of this are, of course, manifold, affecting the most vulnerable people in particular. Destitution brings with it an increased risk of infection, and people are in desperate need of help. In this context, the Mérieux Foundation remains committed to helping countries with limited resources, enhancing the responsiveness and agility of our model to adapt to the new order and tackle infectious diseases more effectively.

While strengthening the capacity for diagnosis and research in the field remains a priority, the Foundation also provides broader solutions as part of a global approach to address all factors impacting the health and future of the most fragile populations, particularly mothers and children. Housing, nutrition, education, safety, water, and the environment are some of the fields in which we can make a difference.

And that is exactly what we have chosen to do, in close cooperation with healthcare providers in these countries, who have a better understanding than we do of the local culture and situation in the field. We have been fortunate over the years to work alongside doctors, researchers, biologists, and carers providing an exceptional service in their countries, in sometimes terrible conditions. I'm thinking above all of Haiti, Madagascar, and war-torn countries in the Middle

The laboratories we build are handed over to local stakeholders, but we maintain partnerships and links with them that transcend national borders and stand the test of time. We are proud of having built up a network of Rodolphe Mérieux Laboratories that work together and share with us the same long-term vision.

This local presence is crucial in the chaos and uncertainties of our times. It is also key within the Foundation's permanent teams, more than half of which are now made up of local employees working in the

Whatever the situation in the countries in which we operate, we will strive to remain true to our commitments. We want to maintain the ties that unite us so that we can continue to work with our partners and friends, because over and above political divisions, the fight against infectious diseases must, now more than ever, transcend all borders.



Jean-Pierre BOSSER **Director General**

Director General's message

In 2023, facing an increasingly complex international context, teams at the Mérieux Foundation once again showed their unfailing commitment to improving the health of the most vulnerable groups of people.

First of all, I want to say how full of pride and admiration I am for all the Foundation's employees, especially those working on a daily basis in the field to achieve our mission, in conditions that can sometimes be extremely difficult.

When our projects are deployed, it is always with a view to adapting them to respond to the public health issues currently impacting the countries in which we operate. This year illustrated the Foundation's expertise and its importance in the field when it comes to dealing with the threat of infection, particularly tuberculosis (a central theme of this 2023 edition) and the serious issue of antimicrobial resistance, as well as the need to reinforce the diagnosis capacities of the reference laboratories at the center of primary health care.

Despite the difficulties we face in our operations, the growing needs we are seeing push us to consolidate what we have achieved at the Mérieux Foundation and continue to develop. Remaining attentive to the needs of the most exposed populations and providing an effective, rapid response alongside local partners continue to be the Foundation's main objectives. With this in mind, reinforcing our community health actions will be one of our key areas of development over the years to come. To enable us to fulfill these objectives, the Mérieux Foundation will undergo a restructuring in summer 2024.

In our changing, complex, and sometimes unpredictable world, we are profoundly grateful to our partners who, year after year, enable us to deploy our activities, as well as to our Board of Directors and to our President who honor us with their confidence. Thank you for your support and commitment.

This 2023 edition allows us to share with you our new graphic charter, which is better adapted to the Mérieux Foundation's ambition and to the challenges we face today.

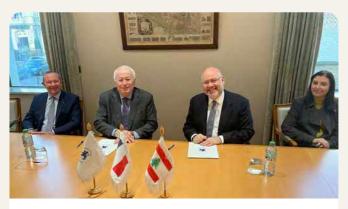




2023 Highlights

In a context of heightening tensions on a global scale, with conflicts, security concerns, social divisions, and climate issues damaging the usual channels of cooperation, the Mérieux Foundation has confirmed its commitment to helping fragile populations. The teams working at the Foundation have proved their strong capacity to adapt their strategies, in particular by integrating the increasing complexity of administrative tasks and by making sure that community-wide actions are prioritized. Five new programs were launched in 2023, with the inclusion of a new beneficiary country, Burundi.

New institutional partnerships





Signature of a collaboration agreement with the Ministry of Public Health

On February 27, 2023, at the Mérieux Foundation's head office, the Lebanese Minister of Public Health, Dr. Firas Abiad, and Alain Mérieux, President of the Mérieux Foundation, signed a memorandum of understanding with the aim of defining the national policy for public health laboratories in the country. Present in Lebanon since 2008, the Foundation is officially recognized as an operational and technical partner for its expertise in strengthening diagnostic capacities.

Renewal of an historic partnership

Almost 50 years after the start of a collaboration to combat the widespread meningitis epidemic in Brazil, a new cooperation agreement was signed by the Mérieux Foundation with Fiocruz and the Acre State Hospital Foundation. Signed on October 9, 2023, the agreement covers support for research activities, training healthcare staff, access to diagnosis, and infectious disease surveillance.

Operational capacities enabling action in times of crisis



Review of the C19-HaitiLab project

The first steering committee of the C19-HaitiLab project took place in Santo Domingo in the Dominican Republic on April 12, 2023. The parties involved in the project (AFD, Mérieux Foundation, the Haiti National Public Health Laboratory, and the GHESKIO centers) confirmed the continuation of activities despite the worsening security situation and commended the strength of this collaboration, which makes the project an exception in the humanitarian landscape in Haiti.



Inauguration of the Rodolphe Mérieux Laboratory in Goma

The Rodolphe Mérieux Laboratory in Goma, a regional public health laboratory, was inaugurated on April 13, 2023, by the National Biomedical Research Institute. Funded with the support of the USAID agency following the 10th Ebola epidemic in RDC (2018 to 2020), this state-of-the-art structure complies with the latest international standards and will help to reinforce the diagnosis and surveillance of infectious diseases.



Renovation of the laboratory at Toma Ciorba Hospital

Renovation work at the microbiology laboratory at the Toma Ciorba hospital began in 2023, as part of the Foundation's support for Moldova, a country facing an influx of Ukrainian refugees. The work involves improving the quality of diagnosis, absorbing larger volumes of analyses, and offering students a renovated platform for training and research in clinical microbiology.





A network dynamic fueled by flagship projects





Nigeria

Establishment of 40 new Epidemiological **Surveillance Centers**

On August 28 and 29, 2023, the third phase of the REDISSE epidemiological surveillance project concluded with debrief meetings held in the three countries involved: Benin, Nigeria, and Togo. The establishment of 40 new centers follows on from previous project phases, which led to the creation of a network of 107 surveillance centers in 10 African countries.



RESAOLAB meeting in Cotonou

From September 13 to 15, 2023, the Mérieux Foundation organized technical workshops for RESAOLAB, the West African network of biomedical analysis laboratories set up by the Foundation in 2009. With the help of the Ministry of Health in Benin and the AFD, this meeting brought together 35 network members to discuss issues relating to external quality assessment.





The Rodolphe Mérieux Laboratory in Rio Branco joins the GABRIEL network

The Charles Mérieux Center for Infectious Disease in Brazil, with its Rodolphe Mérieux Laboratory, has become the 22nd member of the GABRIEL network of research laboratories and the 4th Brazilian member. Part of the largest hospital in the state of Acre in Rio Branco, the laboratory is situated in an isolated region, far from any major cities.

14th edition of the RESAMAD workshops

From October 23 to 27, 2023, the RESAMAD network of laboratories in Madagascar organized the 14th RESAMAD workshops, with the support of the Foundation and the Madagascan Ministry of Public Health. Always keenly anticipated by all the partners in the network, this collaborative event offers various discussion formats, including plenary sessions, working groups, presentations, and question & answer sessions.



A policy of innovation and openness



First Epi-Course, an advanced course in epidemiology

With a satisfaction rate of 97%, the launch of the advanced course on epidemiology in complex emergency situations, Epi-Course, confirmed its positioning in favor of developing skills in epidemiology as part of a One Health approach. Organized jointly by the Foundation and Epiconcept, Epi-Course was attended by 22 participants from 12 French-speaking African countries from March 20 to 24, 2023.



Launch of the Amagara Yacu project

Officially launched on May 30, 2023, in Bujumbura, the Amagara Yacu project will help to improve the quality of primary healthcare and epidemiological surveillance in Burundi, a new country to benefit from the Mérieux Foundation's support. Its experts are supporting the National Reference Laboratory by reinforcing its infrastructure, skills, and laboratory processes.







Tuberculosis

Caused by the Mycobacterium tuberculosis bacillus, tuberculosis or TB is a transmissible disease which generally affects the lungs but may also affect other organs (extra-pulmonary tuberculosis). It is one of the main causes of death worldwide (1.3 million deaths per year).

→ Effective antibiotics were developed in the 1940s but current resistant and multiresistant forms of the disease require longer, more expensive treatments with more side effects.

→ Screening for silent forms of the disease is a key issue, since 10% of those infected are likely to develop the active form of the disease in their lifetime, with a much higher probability for people living with HIV and those affected by risk factors such as malnutrition, diabetes, smoking, and alcohol consumption. "According to the latest estimates, around a quarter of the world's population is carrying the Mycobacterium tuberculosis bacterium without realizing it and around 10% of those with the silent form of the disease have an increased risk of developing TB disease in their lifetime."

Jonathan Hoffmann

in charge of coordinating the TB program at the Mérieux Foundation

The Mérieux Foundation has made combating tuberculosis one of its priority areas of intervention, with eleven projects carried out in ten or so countries in 2023. The Foundation supports national TB control programs with implementing the WHO's recommendations. The objective is to improve the diagnosis and treatment of the disease in the most vulnerable populations, with two main areas of intervention.

- Reinforce capacities for diagnosis and surveillance, in particular via the GABRIEL network (22 members, including nine Rodolphe Mérieux Laboratories in Bangladesh, Brazil, China, Haiti, Laos, Lebanon, Madagascar, and Mali). In Lebanon, for example, the Rodolphe Mérieux Laboratory in Beirut has been appointed the national reference laboratory for TB.
- Facilitate access to innovative diagnosis methods, with operational research projects aiming to evaluate the tests under real-life conditions in order to improve the prevention and treatment of the disease in all its forms. The HINTT multicentric study conducted since 2017 by five members of the GABRIEL network (Bangladesh, Georgia, Lebanon, Madagascar, and Paraguay) led to the identification of two blood tests that could improve the diagnosis and treatment of TB.



WHO recommendations

To achieve the objectives of the END-TB strategy aiming to drastically reduce the mortality and incidence of TB by 2035, the WHO recommends preventing, diagnosing, and treating both forms of TB – tuberculosis disease and tuberculosis infection. The first is the active form of the disease, which is contagious and potentially fatal. The second is the silent form of the disease, constituting a pool conducive to the appearance of active TB cases.

Tuberculosis 2023 Focus 17 Tuberculosis 2023 Focus

Operational research is a priority

Tuberculosis presents multiple challenges in that there is no effective vaccine and no rapid, portable, reliable, and non-invasive test for the disease. To help fulfill the need to improve diagnosis techniques, the Foundation's research projects are pursuing three objectives:

OBJECTIVE 01

Prevention, of both the transmission and evolution of the disease in infected individuals, with projects aiming to assess the positioning and performance of tests allowing the identification of people with a silent form of infection associated with an increased risk of developing an active form of the disease.

The APRECIT project, carried out in Cameroon and Madagascar since 2020, assesses the pertinence of a large-scale screening strategy involving community intervention, training in carrying out tests, and the treatment of TB sufferers and contact cases. Since 2022, APRECIT-BIS has been evaluating the performance of two blood tests for screening for TB infection and identifying more precisely those who may benefit from preventive treatment.

The Foundation supports
National Tuberculosis Control
Programs in implementing WHO
recommendations.

OBJECTIVE 02

Diagnosis of complex forms: pediatric tuberculosis (need for an alternative to sputum-based tests), extra-pulmonary tuberculosis, and forms that are resistant to TB medication.

In Bangladesh, the DEDICATE project is evaluating a new method of diagnostic blood testing in children and the EBC-LAM program launched in 2023 covers the evaluation of a rapid and non-invasive breath test for adults and children.

OBJECTIVE 03

Epidemiological surveillance of resistant forms of TB.

In Laos, the DiLAO-TB project is currently studying the feasibility of incorporating modern technologies for the genome sequencing of mycobacteria to rapidly characterize the level of resistance to antibiotics of strains of *Mycobacterium tuberculosis* These tools could support Reference Laboratories for TB with epidemiological surveillance at national level.

An integrated approach

TB control is a public health priority in the countries in which the Foundation operates, and all areas of the Foundation are involved in diagnosis, interventional research in the field, and knowledge sharing. Since 2020, these activities have expanded considerably across all areas of intervention, through multiple local, national, and international collaborations. With a reputation for expertise and community intervention, the Mérieux Foundation works in synergy with the global ecosystem for combating the disease. It has made an important contribution to USAID's Infectious Disease Detection and Surveillance project (IDDS program 2019-2024).

Experts from the Foundation monitor technological developments to identify any diagnostic solutions under development that might provide reliable screening solutions, working alongside industrialists in the sector and reputable international research teams in the field of tuberculosis. This is how the miniaturized blood test was identified, currently the subject of a pediatric study in Bangladesh (DEDICATE program)

In 2023, the Foundation joined the Stop TB Partnership, an international consortium of parties involved in the fight against TB and communities affected by the disease. The Foundation is also a partner of The Union, a global organization fighting tuberculosis and lung diseases, and participated in its conference in Paris from November 15 to 18, 2023, the most important event on respiratory infections in the world.



Symposium on unmet needs in diagnosis

On September 28, 2023, the Mérieux Foundation USA and the Mérieux Foundation, with the Milken Institute at the George Washington University organized a symposium on the challenges of diagnosing TB in low-income countries. Several experts presented new approaches to prevention based on community intervention models adapted to the restrictions that exist in the most isolated areas.

Tuberculosis 2023 Focus 19 Tuberculosis 2023 Focus



Access to biological diagnosis

Access to diagnosis for vulnerable populations is the Mérieux Foundation's main area of intervention. This strategy is based on the reinforcement of clinical biology laboratories in regions that are particularly at risk. As one of the cornerstones of a robust health system, diagnosis lies at the heart of public health and biomedical analysis laboratories play a crucial role in disease detection, patient monitoring, and health surveillance.

In 2023, the Mérieux Foundation's expertise in reinforcing clinical biology laboratories was deployed in 40 projects in 22 countries:

Infrastructure expertise
Virology expertise
Bacteriology expertise
Educational engineering expertise
Quality management system expertise
Biosafety and biosecurity expertise
Laboratory IT systems expertise
Expertise in health surveillance based on laboratories
Expertise in laboratory development policies

For more than 20 years now, the Mérieux
Foundation has been supporting the
reinforcement of biomedical analysis
laboratories through collaborations with
national and international organizations. In our
complex and changing world in which conflicts,
epidemics, and population displacement are
becoming more commonplace, the Foundation
has established a reputation over the years for
its expertise in biology and infectious diseases.
It makes an active contribution to reinforcing
biomedical analysis laboratories as a means
of tackling infectious diseases and, more
specifically, antimicrobial resistance.

In addition to improving infrastructure and equipment and developing skills, the Foundation also supports health authorities with setting up or improving efficient laboratory systems, helping them to reinforce and optimize the diagnostic services they provide for the population and thus have a direct impact on public health.

This support is provided in four key areas:

- Infrastructure and equipment;
- Strengthening the skills and expertise of laboratory staff;
- Sustainability of structures;
- Establishment of networks and laboratory systems.

In 2023, the political and security situation in several of the areas in which the Mérieux Foundation operates became even more complicated, with some countries becoming difficult to access and requiring a review of operations. To ensure the continuity of its activities, the Foundation relies on a solid network of institutional partners and on the ability of its teams to adapt and fulfill their missions while respecting the security conditions in place.





Myanmar SDG 3

LABMYNET PHASE II

Diversifying biological diagnosis services

In April 2023, the Mérieux Foundation launched the second phase of the LabMyNet (Laboratory Myanmar Network) project, in the context of a severe deterioration in the health system in Myanmar. Continuing the measures the Foundation has been implementing for more than 20 years to support the structuring of the laboratory network and, since 2018, to reinforce HIV viral load quantification in support of the National HIV/AIDS program, this new phase of support aims to enhance HIV viral load testing and diversify virological diagnosis services to improve the handling of other epidemics and endemics. Initially, diagnosis will focus on the hepatitis B virus and SARSCoV-2.

These activities are carried out by the eight operational and multifunctional molecular platforms set up during the first phase of the project (2015–2018), which will benefit from new reinforcement measures (staff training, purchase of new equipment, etc.).

Supported by the Expertise France Initiative, LabMyNet operates alongside local entities supporting the fight against HIV/AIDS and in partnership with the NGO The Union, Medical Action Myanmar, UNOPS (United Nations Office for Project Services), the NGO Save The Children International, Asian Harm Reduction Network, PSI (Population Service International), MSF Holland, MSF Switzerland, and the Myanmar Positive Group.





Myanmar | Laos | Cambodia | SDG 3

SEALAB

Establishing a network of laboratories in South-East Asia

aunched in 2020 with financial support from the Australian government (Department of Foreign Affairs and Trade), SEALAB is a project for strengthening regional health surveillance based on laboratories in three South-East Asian countries: Laos, Cambodia, and Myanmar. The objective of the project, which drew to a close in May 2023, was to reinforce the laboratory systems in these three countries so that they could participate effectively in preventing and responding to emerging infectious diseases, particularly those with zoonotic or epidemic potential. In collaboration with the designated ministries and institutions in the respective countries, SEALAB led to the deployment of supervision, mentoring, training, and data management activities as part of a One Health approach, targeting human and animal laboratory networks. It should be noted that in Myanmar, where the geopolitical context of the coup d'état led to the significant disruption of public laboratory services, the project evolved to include the private laboratories in the network.

Taking on the role of leading the SEALAB consortium, the Mérieux Foundation oversaw the technical support, collaboration with partners, and coordination activities of the consortium.

In 2023, SEALAB laboratory professionals attended the Asia Pacific Quality Summit organized by the NRL on April 27 and 28. The project was also presented at the OHSEA (One Health in South-East Asia) colloquium held in Hanoi from April 24 to 26, 2023, and at the national coordination meeting for monitoring antimicrobial resistance organized by the National Center for Laboratory and Epidemiology and the WHO on May 5, 2023.









Mali | Guinea | Chad SDG 4

GLOBAL LABORATORY LEADERSHIP PROGRAM (GLLP)

Global laboratory training program

CLLP is a training program for laboratory staff with technical, management, and leadership components based on a local mentoring system. The program aims to strengthen the voice of laboratories working in human, animal, and environmental health, thus enabling a community of active leaders to emerge. The training program was developed by a consortium of six major international organizations* and the project was funded by the Global Fund. The Mérieux Foundation was selected to implement the training program in Mali, Guinea, and Chad, with 10 to 15 beneficiaries and 4 to 6 mentors

In 2023, the last year of the program, activities were deployed in the three target countries and 43 improvement projects were implemented by the participants with the support of their mentors. These covered subjects including biosafety, waste management, and quality. Several meetings between the different countries were organized throughout the year to allow the sharing of experiences and the establishment of practical communities. The results of the projects were presented to evaluation juries and closing ceremonies for the program were held in each country, during which GLLP certificates were awarded to the 40 graduates of the program.

Particularly satisfied with the implementation of the project in Mali, Guinea, and Chad, the Global Fund invited the teams to present their projects to the annual conference of the African Society of Laboratory Medicine (ASLM), which took place in Cape Town, South Africa, from December 12 to 15, 2023.

per country.

Feedback at Les Pensières Center for Global Health

As a partner of the GLLP program, the Mérieux Foundation organized a meeting between members of the consortium and those in charge of its implementation in more than 15 countries.

Held on September 3, 2023, at the Les Pensières Center for Global Health in France, this workshop led to the identification of the program's strengths, including the complementary nature of teams of national and international trainers and the One Health approach.

Successful deployment thanks to the Mérieux Foundation's expertise in the field

To ensure the success of this ambitious project, the Mérieux Foundation was able to rely on its longterm local partners, its understanding of laboratory systems, and its many years of experience in managing projects in the field. The program included the development of an individual project by each participant to tackle the issues concerning the laboratory system. The participants were closely supported by mentors trained by the Mérieux Foundation to guarantee the application of their newly acquired theoretical knowledge.

* Association of Public Health Laboratories, Centers for Disease Control and Prevention, European Centre for Disease Prevention and Control, World Organization for Animal Health, UN Food and Agriculture Organization and the World Health Organization (WHO).









West Africa SDG 3 **RESAOLAB**

Supporting a regional network governing biomedical services

Set up in 2009 on the initiative of the Mérieux Foundation, RESAOLAB is a project to support biological diagnosis based on a regional approach in seven West African countries: Benin, Burkina Faso, Guinea, Mali, Niger, Senegal, and Togo. The project provides the governance bodies in charge of laboratories within the Ministries of Public Health in these seven countries with concrete resources for improvement in several areas – governance, technical capacities, continuous training, external quality assessment, and the establishment of networks. The third phase of the program, launched in 2019 with funding from the Agence Française de Développement (AFD, French Development Agency), was particularly active in 2020 in supporting national strategies to respond to the COVID-19 health crisis.

In 2023, RESAOLAB members were involved in the launch of the AFD's cluster analysis involving several campaigns in favor of investment in laboratories. This resulted in the identification of RESAOLAB's strengths, based on five project assessment criteria: pertinence, coherence, effectiveness, efficiency, and sustainability. The Foundation was also asked to participate in the AFD's strategic review of laboratories, a cornerstone of the strategy to improve health security at a global level.

Finally, a report on the role played by laboratories in the response to the COVID-19 crisis in RESAOLAB countries was completed at the end of 2023. Its conclusions demonstrate the crucial role played by the authorities in charge of laboratories in managing the epidemic in West Africa. The network helped to develop response plans, identify operational needs, prioritize interventions, and decentralize diagnostic resources, leading to the improvement of geographical coverage. The report also reveals the importance of institutional support – one of RESAOLAB's historic activities – in preparing authorities to deal with epidemics. This principle was included in the new strategy for the Africa Centres for Disease Control and Prevention (Africa CDC).

Due to the evolution of the geopolitical context in the region and at the request of the Ministry for Europe and Foreign Affairs, AFD funding for activities in Mali was stopped in mid-November 2022 and suspended in Niger and Burkina Faso from the beginning of August 2023.



Extra support during the health crisis

During the COVID-19 crisis, laboratories in the countries in the network were supplied with additional equipment, reagents, and consumables, thanks to the support of the member states and of several partners, including the AFD. Each country benefited from individual assistance and a more general support plan was also introduced across the network, thanks in particular to the sharing of information and training.



Benin | Nigeria | Togo SDG 3

REDISSE

Establishment of 40 new Epidemiological **Surveillance Centers**

iven the regional dimension of the REDISSE program, the West African Health Organization (WAHO) wanted to reinforce the surveillance capacities of health districts by setting up Epidemiological Surveillance Centers (ESCs) covering human, animal, and environmental health. These aim to improve the collection, processing, and analysis of data on a peripheral level to guide decision-making and improve the way epidemics are managed. Funded since 2016 by the World Bank and the WAHO, REDISSE has already been given two mandates, resulting in the creation of a network of 107 ESCs in ten African countries.

The third REDISSE mandate launched in May 2023 aims to establish 40 new centers in three beneficiary countries: Benin, Nigeria, and Togo. As for the first two phases, the Mérieux Foundation and the Canadian NGO Santé Monde were appointed to oversee the program's activities, including training, supervision, development of the network, and acquisition of equipment. Eighty laboratory technicians were trained according to the Mérieux Foundation's methodology, which consists of training national trainers who then take responsibility for training laboratory staff.

The establishment of the 40 new centers concluded with the organization of debrief meetings on August 28 and 29, 2023. The strong commitment of all the parties involved in the project, and especially of local parties, enabled the project to be successfully concluded in a particularly short time frame.







British program for tackling antimicrobial resistance

The Fleming Fund is a British aid program for improving the surveillance and prevention of AMR and for promoting the appropriate use of antibiotics. The program is deployed by the Department of Health and Social Care in more than 25 countries, including Laos.



Laos SDG 3 and 4

FLEMING FUND

Tackling antimicrobial resistance (AMR)

In Laos, the Mérieux Foundation was appointed to run the Fleming Fund's activities in the field of human health, with the aim of strengthening capacities for the diagnosis and surveillance of antimicrobial resistance (AMR) in 11 hospitals in the country. Deployed in close collaboration with the Ministry of Health and the National Center for Laboratory and Epidemiology (NCLE), the project incorporates the One Health dimension and encourages the sharing of knowledge on AMR and the reasonable use of antimicrobials across the human and animal health sectors. Initially planned to end in December 2022, the project was extended to run until September 30, 2023.

The main activities of the program included: improving infrastructures and laboratory equipment, supplying reagents, strengthening the capacities of laboratory health professionals and those working in clinical services (mentoring, conferences, training sessions with expert biologists from the Mérieux Foundation), and introducing a control and supervision process with the advice of a local team and the support of expert clinicians, biologists, and epidemiologists at headquarters.

From May 29 to 31, 2023, the Mérieux Foundation organized a workshop on antimicrobial resistance, which was attended by 80 participants from 12 hospitals in Laos, including directors, clinicians, doctors, pharmacists, biologists, and nurses, as well as representatives of health institutions such as the Department of Communicable Diseases Control, the Food and Drug Department, the WHO and the LOMWRU (Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit).

The workshop highlighted the importance of collaboration between clinicians, microbiologists, practitioners, and pharmacists for the development of sustainable and effective antibiotic management and usage programs.









Madagascar SDG 3

EVAMAD

Facilitating patient access to HIV viral load testing

aving set up the first HIV viral load testing platform in Madagascar in 2015, the Mérieux Foundation has now established a network of sampling circuits between the provinces and the capital. Benefiting from the support of Expertise France, the EVAMAD project has two objectives: to expand the geographical coverage of viral load testing and improve the care of people living with HIV/AIDS in Madagascar. Renewed in 2020, the project came to an end in November 2023.

The transfer of routine analysis activities from the Charles Mérieux Center for Infectious Disease (CICM) in Antananarivo to the Ministry of Public Health laboratory was completed in 2023 at the request of the Ministry. The emergency system (for dealing with accidental exposure to the virus, particularly mother to child transmission) was initially set up at the CICM and in two pilot maternity units (Itaosy and Ankiriri hospitals). Refurbishment work was carried out at the Itaosy hospital (renovation of the reception area and the prenatal consultation room). Information and awareness campaigns were also continued in local associations and communities to increase the number of people benefiting from viral load testing.

EVAMAD was managed in collaboration with the Ministry of Public Health in Madagascar, the Global Fund, the Initiative, the National HIV/AIDS and STI program, the MAD'AIDS association, UNAIDS, Population Service International, and UNICEF.



Publications:

- → High Seroprevalence of IgG Antibodies to Multiple Arboviruses in People Living with HIV (PLWHIV) in Madagascar, National Library of Medicine, NIH
- → Impact of COVID-19 on people living with HIV in Madagascar: a sars-cov2 sero-prevalence survey, National Library of Medicine, NIH

Conferences:

- → 25th Journées Francophones de Virologie (a French-speaking conference on virology) organized by the Société Française de Virologie (French Virology Society) on April 17 and 18, 2023, at the Institut Pasteur in Paris
- → 11th Conférence Internationale Francophone AFRAVIH 2022 (French-speaking international conference on HIV), held in Marseilles from April 6 to 9, 2022



Burundi SDG 3

AMAGARA YACU

Improving the availability of healthcare and epidemiological surveillance

The French Red Cross and the Burundi Red Cross, in partnership with Amref Health Africa and the Mérieux Foundation, launched the AMAGARU YACU (meaning "our health") project in 2023, with a view to contributing to the Burundi government's efforts to improve the country's health system. Funded by the Agence Française de Développement (AFD, French Development Agency) and the French Embassy, the project will help to improve the quality of primary health care and epidemiological surveillance. AMAGARA YACU includes a component dedicated to considering the gender inequalities that are hampering the right to good health and access to health care.

The Mérieux Foundation is providing its expertise to the National Reference Laboratory run by the Institute of Public Health at the Ministry of Health in Burundi, thus helping to reinforce infrastructure, equipment, skills, and quality, biosafety, and biosecurity procedures. An initial audit phase for the quality management system was carried out in order to formulate an action plan and help the laboratory with its certification process. An assessment of the requirements for renovating existing infrastructure has also been carried out.









Haiti SDG 3

C19-HAITILAB

Reinforcing the surveillance capacities of the laboratory system

aunched in the midst of the health crisis, the C19-HaitiLab project was designed to enable the health system in Haiti to monitor the COVID-19 epidemic. The project aims more globally to strengthen the role of biomedical analysis laboratories in ensuring surveillance and control in the event of an epidemic threat. Funded by the Agence Française de Développement (AFD, French Development Agency), the project combines a decentralized approach in favor of peripheral laboratories in association with the National Public Health Laboratory (LNSP) and a centralized approach to improve the energy performance at GHESKIO centers (Haitian Group for the study of Kaposi's Sarcoma and other opportunistic infections).

In 2023, the first steering committee organized in Santo Domingo in the Dominican Republic confirmed the need to continue providing support for health structures despite the particularly critical security context in Haiti. Unlike other projects, C19-HaitiLab remains operational thanks to the determination and dynamism of local partners. The close collaboration of the National Public Health Laboratory and GHESKIO centers, along with the experience of the Mérieux Foundation, have been underlined as key factors in its success.





Senegal | Burkina Faso | Mali | Gambia SDG 3 **COHWA**

Regional approach to assessing the risks of hemorrhagic fever

aunched in 2021, COHWA is a One Health project to assess the risks Linked with hemorrhagic fever viruses in West Africa for humans, animals, and the environment. This is an international collaboration based on targeted surveillance in high-risk areas for the early identification of the viruses (particularly the Lassa fever virus, Ebola, Rift Valley fever, and Crimean-Congo hemorrhagic fever). The project is operated with the financial support of the US Defense Threat Reduction Agency via Pennsylvania State University.

Activities carried out in 2023 included missions to collect samples from humans and animals, wildlife training, and a workshop on ecological niche modeling (which refers to the position occupied by a species within an ecosystem). The COHWA consortium is made up of 10 institutions in the United States and West Africa (including the Mérieux Foundation USA and the Charles Mérieux Center for Infectious Disease in Mali). The local Mérieux Foundation team in Senegal also provides its support in terms of logistical and operational management.









Madagascar SDG 3

DNO MADA

Optimization of the network of diagnostic laboratories

The Mérieux Foundation was mandated by the Global Fund to map I the availability of diagnosis services in Madagascar, with a view to introducing the Diagnostic Network Optimization (DNO) system that the Global Fund wants to use to improve the operation of the laboratory network in the country.

This is a geospatial analysis system using geographical and health data to propose the optimal network architecture accessible to as many people as possible. With this in mind, the Foundation is working closely with the Laboratories Department at the Ministry of Health and with all the parties concerned to form a consensual view in line with the National Strategic Plan for the development of laboratories. Various workshops have taken place to define the scope of the tests concerned and the target to reach in terms of service availability. Some of the data has already been successfully collected, despite a complex electoral and security environment.

"This is a very innovative approach and, with the help of local stakeholders, we will work together to establish the country's priorities for the analyses to be carried out to meet the population's needs."

> Luciana Rakotoarisoa, Madagascar Country Manager at the Mérieux Foundation





Burkina Faso | Togo SDG 3 **OASIS STUDY**

Monitoring antimicrobial resistance

ASIS is a One Health project that forms part of the European JPIAMR (Joint Program Initiative for Antimicrobial Resistance) initiative launched in 2020 and coordinated by the Amsterdam Institute for Global Health and Development. The project brings together partners involved in human and animal health with the objective of evaluating a new method of estimating antimicrobial resistance based on statistical sampling. The Mérieux Foundation is in charge of coordinating the component liked with human health, which is based on the inclusion of 16 community health centers in Burkina Faso and Togo, thanks to the support of the Lomé University Hospital and the Souro Sanou University Hospital.

OASIS uses the LQAS (Lot Quality Assurance Sampling) method of monitoring populations based on analyzing a batch of samples to assess the resistance of certain bacteria to the selected antibiotics. In the context of the analysis of the project's preliminary results, the Foundation organized scientific workshops attended by about ten representatives of project partners, which took place in Lomé between February 28 and March 2, 2023.









02 Applied research

By strengthening research capacities, the Mérieux Foundation supports the development of projects addressing the basic needs of local populations in the countries in which it operates. With this in mind, the Foundation prioritizes operational research relying on the implementation of community programs to benefit the most fragile groups of people.

The reinforcement of local applied research capacities relies on three pillars of intervention:

Strengthening the capacities of the laboratories in the GABRIEL network, in compliance with the most exacting international standards;



Training researchers through the organization of courses and conferences focusing on major public health issues;



Developing collaborative projects encouraging South-South collaboration. The Mérieux Foundation's activities for reinforcing research focus on three main public health issues: antimicrobial resistance (AMR), tuberculosis and respiratory infections, as well as emerging pathogens. This work relies in particular on an outstanding network of units located in the heart of the most exposed regions. The GABRIEL network, coordinated by the Mérieux Foundation, plays an increasingly important role in the control and surveillance of epidemics and several of its members have officially been designated "national reference laboratories" in their countries.

A collaborative approach

Convinced of the need to act in synergy with the scientific ecosystem engaged in tackling infectious diseases, the Mérieux Foundation is a partner of three research organizations operating in countries with limited resources:

- → The French National Research Institute for Sustainable Development (IRD) for the introduction of support measures for young researchers and collaborative programs;
- → The Pasteur Network (Réseau International des Instituts Pasteur), including the participation of the Pasteur Center in Cameroon in the implementation of the APRECIT project involving the Institut Pasteur in Madagascar, the Pasteur Center in Cameroon, and the Mérieux Foundation;
- → The SHARENET network for multicentric research projects to identify the main determinants for the emergence and propagation of antimicrobial resistance. This is a network of scientific experts from Cambodia, Ivory Coast, Madagascar, Burkina Faso, Laos, Senegal, and Mauritania.







EVAg consortium

The GABRIEL network is a member of the EVAq (European Virus Archive global) consortium, which collects, characterizes, produces, and distributes viruses and derived products. This platform provides essential resources for the response to epidemics.

> The GABRIEL network in figures

20

research projects in progress (7 tuberculosis, 4 antimicrobial resistance, 6 acute respiratory infections, 3 COVID-19)

collaborative publications (2012-2022)

1002

scientists trained (57 training sessions through mentoring schemes and 55 training workshops)

10 online training modules on epidemiology, clinical research, molecular biology, the diagnosis of arboviruses, and biobanks.

The GABRIEL network

SDG 17

Created in 2008 by the Mérieux Foundation, the GABRIEL network (Global Approach to Biology Research, Infectious diseases, and Epidemics in Low-income countries) is an international scientific network working in synergy to develop research capacities and improve the surveillance of infectious diseases that have a significant impact on public health.

The GABRIEL network covers 22 institutions in 16 countries in Africa, South-East Asia, the Middle East, South America, and the Caribbean: nine Rodolphe Mérieux Laboratories (whose construction is financed and managed by the Mérieux Foundation before being transferred to local healthcare providers) and academic, university, and hospital research institutes. The Charles Mérieux Center for Infectious Disease in Rio Branco, Brazil, which has its own Rodolphe Mérieux Laboratory, joined the network in November 2023. Having played a major role in the diagnosis of COVID-19, teams working at the Center are now developing their work in TB, respiratory infections and hepatitis, in collaboration with the three other Brazilian members of the GABRIEL network.

New developments in the GABRIEL network in 2023 include:

- → The 12th international meeting of the network organized in Cameroon from May 31 to June 2 (80 participants) on preparing for epidemics: vector-borne diseases, emerging pathogens, neglected tropical diseases, etc.
- Publication of the results of the collaborative South-South study on the impact of the COVID-19 pandemic on the propagation of antimicrobial resistance.
- > Provision of scientific and technical assistance in the field of sequencing, bioinformatics, analysis, and the evaluation of results;
- The organization of a training week on bioinformatics in Madagascar with Quality Assurance modules delivered to 11 members of the GABRIEL network, within the framework of the ISO 15189 accreditation of medical analysis laboratories.
- → One member joined the network: the CICM Brazil in Rio Branco.





Funding of PhD research grants

To support young researchers, the Mérieux Foundation encourages the establishment of postgraduate programs within the GABRIEL network by funding PhD research grants (€15,000/year for three years). Four PhD programs are currently underway in Lebanon (COVID-19), Madagascar (HIV/AIDS), Brazil (emerging viruses); and Burkina Faso (TB).



Collaboration with WANIDA, the West African Network of **Infectious Diseases** centers of excellence

In 2023, the GABRIEL and WANIDA networks identified their first two areas of collaboration: the organization of shared training and the search for funding for projects involving members of both networks. The GABRIEL network presented its activities at the WANIDA symposium in March 2023 and the WANIDA network participated in the 12th international meeting of the GABRIEL network.





Mérieux Foundation/IRD grants

In 2022, a new grant program was launched between the Foundation and the IRD. The grants support theses carried out in association with an IRD team and for which half of the time was spent in a GABRIEL

network laboratory. In 2023, the second call for funding applications resulted in the selection of a new fellow in Burkina Faso (tackling

Structure and autonomy of the network

Since 2020, attention has increasingly been focused on strengthening local facilities and boosting the autonomy and initiatives of the laboratories. Within this framework, the Foundation helps to structure the GABRIEL network and improve its visibility with partners and funders

- → The mapping of expertise associated with priority research topics. In 2023, this expertise was used to create a database (technological platforms, clinical connections, current and past achievements, collaborations, etc.);
- > Support for the submission of projects to help laboratories respond to calls for projects as coordinators or partners in international consortia. In 2023, nine projects were submitted to funders, including the JPI-AMR, the European Union, the Bill & Melinda Gates Foundation, CDCs (Centers for Disease Control), etc.
- The development of collaborative projects in the field of respiratory infections and emerging pathogens. In 2023, two projects (Bangladesh and Brazil) in collaboration with the Christophe Mérieux Laboratory were selected. The first of these projects is a study of the diversity of the respiratory microbiome in acute upper respiratory infections after the COVID-19 pandemic and the epidemic characteristics of respiratory pathogens after the COVID-19 pandemic. The second project is on the identification and evaluation of human biomarkers associated with the clinical severity or the diagnosis of infection with the respiratory syncytial virus.



GABRIEL Young Researchers Prize

Created to support the careers of promising young scientists in the network, the Young Researchers Prize was awarded in 2023 to:

- → Clausjeans Chastel Mfoutou Mapanguy from the Congolese Foundation for Medical Research, for his study on "The Surveillance of SARS-CoV-2 and other pathogens in the Republic of the Congo";
- → Nono Vanessa Ninkeh from the Pasteur Center in Cameroon for her work on "The prevalence of isoniazide-resistant TB strains".







Tuberculosis

In partnership with National TB Control Programs, civil society organizations, and research institutes, the Foundation develops studies to improve screening and care for TB patients.



Cameroon | Madagascar SDG 3



Tuberculosis

APRECIT BIS

Improving screening for tuberculosis infection



Collowing on from the APRECIT project for the treatment of tuberculosis infection (the silent form of the disease formerly known as latent tuberculosis), the Mérieux Foundation, the Institut Pasteur in Madagascar, and the Pasteur Center in Cameroon are now deploying the APRECIT-BIS project with funding from ANRS Emerging Infectious Diseases. The aim is to assess new strategies for screening for TB infection, which will allow health authorities to identify the beneficiaries of preventive treatment in accordance with the WHO's recommendations, allowing action to be taken before the disease even appears.

APRECIT-BIS relies on the analysis of biological samples collected during a previous operational research project called APRECIT, which was financed by the Initiative between 2020 and 2024. The objective is to transfer and evaluate three innovative blood tests in Madagascar and Cameroon for detecting tuberculosis infection and to predict the progression from a silent form to the disease itself: the TASA (T-cell Antigen-Specific Activation assay) test, the RISK6 test, and a mix of several plasma proteins. All the tests present interesting and promising characteristics for deployment on a wide scale in countries with limited resources.



Technology transfer workshop in Madagascar

Within the framework of the APRECIT-BIS project, a technology transfer and training workshop on the new screening tests for TB infection took place from June 27 to July 5, 2023, at the Institut Pasteur in Madagascar, attended by the project's operational partners: the Institut Pasteur in Madagascar, the Pasteur Center in Cameroon, SATVI (South African Tuberculosis Vaccine Initiative) at the University of Cape Town, Hospices Civils de Lyon, and the Mérieux Foundation.





Banaladesh SDG 3

Tuberculosis

DEDICATE

Diagnosis of pediatric and extra-pulmonary tuberculosis



aunched in 2022, the DEDICATE project aims Leto combat the underdiagnosis of two specific forms of tuberculosis: pediatric tuberculosis and extra-pulmonary tuberculosis. These paucibacillary forms of the disease, presenting small quantities of pathogens, are difficult to detect using conventional methods based on analyzing sputum samples. The DEDICATE study in Bangladesh is assessing the performance of two molecular blood tests (see box).

The study is based on monitoring two cohorts in a hospital environment: children under the age of 15 with suspected pulmonary tuberculosis and cases of suspected extra-pulmonary tuberculosis. The recruitment of all participants was finalized in March 2023: 406 children, around 80% of whom are under 2 years old, for the first cohort, and 403 for the second. In both cohorts, patients diagnosed with tuberculosis disease were monitored for the duration of their treatment (six months for forms sensitive to antibiotics, nine months for resistant forms) and samples were taken to assess the pertinence of the tests as a monitoring and prognostic tool.

Carried out with financial support from the AnBer Foundation, DEDICATE is led with the operational support of the icddr,b (International Center for Diarrheal Disease Research, Bangladesh) and Cepheid. The results of this study will soon be submitted for publication in an international peerreviewed scientific journal.



Two tests assessed by the DEDICATE study

DEDICATE is assessing two blood tests for screening for paucibacillary forms of TB:

→ The RISK6 test, which was given a promising evaluation for pulmonary TB in adults within the GABRIEL network (HINTT multicentric research project for which the results were published in 2021);

→ The Xpert-MTB-HR test developed by the molecular diagnosis company Cepheid.



Tuberculosis

DiLAO-TB

Improving treatment for tuberculosis patients



iLAO-TB proposes to use modern technologies for diagnosing resistance to antibiotics with a view to improving treatment for TB patients and preventing the spread of the disease and its resistant forms. Deployed in Laos, which has one of the highest prevalences of TB in Asia Pacific, the project relies on strengthening capacities for genotyping multidrugresistant strains of Mycobacterium tuberculosis using the tNGS (targeted next-generation sequencing) test developed by Oxford Nanopore Technologies.

In 2023, training was provided in using the test and analysis and comparison studies were drawn up and published. The next stage is to support the scaling up of this approach, as well as its roll-out to other partner countries of the GABRIEL network.

The project is led by a consortium made up of the Center of Infectiology Lao Christophe Mérieux, which is run by the Ministry of Health in Laos, the National Center for TB Control, the French National Research Institute, and the Mérieux Foundation, DiLAO-TB benefits from funding from the FSPI-R (a solidarity fund for innovative projects).

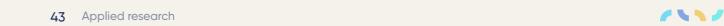


The challenge of antimicrobial resistance

- → Multidrug-resistant tuberculosis is a form of TB for which treatment with isoniazide and rifampicine, the two main antibiotics used to treat TB, is not effective;
- → Poor treatment of tuberculosis (premature end to treatment, administration of ineffective formula) may lead to increased drug resistance;
- → Drug resistance can be detected using specific molecular or culture-based tests detecting the sensitivity of bacteria to drugs or resistance patterns.







Bangladesh SDG 3

Tuberculosis

EBC-LAM

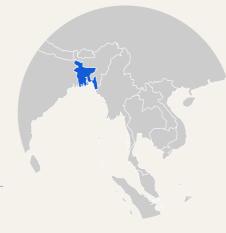
Evaluating a diagnostic test using breath samples

aunched in 2023, the EBC-LAM project proposes to evaluate a breath Lest based on the analysis of an Exhaled Breath Condensate (EBC) rather than sputum, as is the case in routine tests, which are particularly difficult to collect from children. Non-invasive and relatively inexpensive, this test is easy to roll out at the lowest levels of sanitation and can be carried out by staff with little or no training. The speed with which it can be carried out means results can be obtained during the consultation, improving the care provided for patients.

EBC-LAM is the result of a collaboration with the Institute of Pharmacology and Structural Biology (IPBS) at the CNRS (University of Toulouse), whose preliminary work identified a marker for TB (lipoarabinomannane or LAM) in exhaled air. The project aims to **confirm** the potential of this innovation on a wider scale by evaluating its performance in real-life situations.

The clinical study for the validation of the concept was designed and developed with the support of Dr. Jérôme Nigou from the IPBS, the icddr,b (International Center for Diarrheal Disease Research, Bangladesh) and FINDax (a foundation affiliated with the WHO).







Antimicrobial resistance (AMR)

An increasing threat to public health, putting the prevention and treatment of bacterial diseases at risk, the WHO has a global action plan for tackling antimicrobial resistance, for which the Foundation offers its support in terms of research and surveillance, in accordance with the global One Health strategy.





Madagascar | Burkina Faso SDG 1, 3 and 7

AMR DATA CENTER

Defining strategic monitoring indicators

Public health interventions based on data are one of the cornerstones of the WHO's action plan for dealing with AMR. Two members of the GABRIEL network – the Charles Mérieux Center for Infectious Disease in Madagascar and the Souro Sanou university hospital in Burkina Faso – are creating an AMR surveillance platform based on robust tools for the collection and analysis of data. Its objective is to share results with the medical community and decision-makers in order to help them define the relevant indicators for monitoring the impact of public health measures on AMR.

The Mérieux Foundation is providing technical support, in particular for the IT and security aspects, and is coordinating activities alongside the Bill & Melinda Gates Foundation, which is supporting the call for projects to participate in the "Grand Challenges 2022" dedicated to public health interventions based on data.

Monthly meetings were organized throughout 2023 with the stakeholders in both countries, in particular to define the requirements, expectations, roles and responsibilities of each partner (ministries, scientific societies, associations, etc.). The next stage will be the presentation of the beta version of the Data Science Center in 2024.







Madagascar SDG 3 AMR

TRIUMPH

One health AMR surveillance

n extension of the WHO's Tricycle project, TRIUMPH is a One Health Aprogram for the surveillance of bacterial strains that are resistant to antibiotics in Malaysia, Pakistan, and Madagascar. TRIUMPH targets two Enterobacteriaceae declared a critical priority by the WHO for their ability to render certain classes of antibiotics inactive. These are Enterobacteriaceae-producing extended-spectrum beta-lactamases (ESBL) and Carbapenemase-producing Enterobacteriaceae (CPE), which can be found in the human body, in the environment and in the food chain.

The Mérieux Foundation is responsible for the molecular characterization of isolated CPE strains in the human sector in Madagascar. The project is being conducted in 10 hospital laboratories in the RESAMAD network and the Charles Mérieux Center for Infectious Disease in Antananarivo. In 2023, sampling activities were finalized, and the analysis of genomes will be carried out in 2024.

TRIUMPH benefits from financial support from the European JPI-AMR initiative (Joint Programming Initiative on Antimicrobial Resistance) and the Swedish agency for development and cooperation.





Bangladesh | Brazil | Paraguay SDG 3, 4 and 17

MULTIDRUG-RESISTANT ENTEROBACTERIACEAE

Study of pet-to-human transmission

In 2023, the Mérieux Foundation launched a pilot study on the transmission of extended-spectrum beta-lactamase (ESBL) producing enterobacteriaceae, classified by the WHO as global health priority. These multidrug-resistant enterobacteriaceae can be found in humans, in animals, and in the environment, and can be responsible for serious infections. As cats and dogs have been reported as an important source of AMR, this pilot study aims to determine whether exposure to a pet is a risk factor for the emergence and spread of E. coli ESBL in humans.

The surveillance protocol will determine the prevalence of these bacteria in healthy pregnant women living in homes with or without pets, recruited in urban prenatal and perinatal health centers. Risk factors will be studied in the women and in their pets and the genetic determinants of resistance will be characterized by next-generation sequencing in order to demonstrate their potential phylogenetic relationship.

The recruitment of pregnant women with and without pets has begun in three countries in the GABRIEL network: in Bangladesh with the Institute for Developing Science & Health Initiatives (IdeSHi), in Brazil with the University of Sao Paulo, and in Paraguay with the University of Ascension.







Acute respiratory infections

Pneumonia (acute lower respiratory) infections are a major public health issue in low-income countries and are the leading cause of infant mortality worldwide. Several research programs are underway within the GABRIEL network: on viral and bacterial co-infection and on the incidence and etiology of pneumonia infections.





7 countries SDG 3

Acute respiratory infections

NOSO-COR

Reducing the nosocomial transmission of SARS-CoV-2

While lockdown restrictions were still in place in some countries, the GABRIEL network took over a multicentric study to evaluate the risks of the transmission of SARS-CoV-2 in healthcare institutions. Based on the NOSO-COR research protocol established by the Mérieux Foundation and Hospices Civils de Lyon, the project was carried out in seven countries: Mali, Ivory Coast, Guinea, Madagascar, Bangladesh, Brazil, and Lebanon. The Mérieux Foundation managed the implementation of the research protocol in these countries with the financial support of the Bill & Melinda Gates Foundation.

This epidemiological study made it possible to document COVID-19 cases (around 2,700 in total), chains of transmission, risk factors, and the impact of prevention measures in the hospital environment. NOSO-COR also led to the mapping of expertise in hospitals to identify the interventions necessary for limiting cases of nosocomial infection.

The project was completed in 2023 with the analysis of results and publication in the scientific magazine, the American Journal of Tropical Medicine and Hygiene. Lessons learned from NOSO-COR will enable the proposal of solutions to reduce the risk of transmission and will contribute towards a better understanding of the impact of the COVID-19 pandemic in low- and middle-income countries, for which little data has been available until now.







Bangladesh SDG 3

Acute respiratory infections

FDP-COVID19

Prevention of SARS-CoV-2 in a humanitarian crisis

aunched during the health crisis, the FDP-COVID19 research program aims to study the prevalence of SARS-CoV-2 in a refugee camp, where living conditions accelerate the spread of infectious diseases. The project covers the analysis of the transmission of the virus at the Rohingya refugee camp in Cox's Bazar, in the Ukhia region of Bangladesh.

The data is currently being analyzed and initial results suggest very high exposure to the virus. Once finalized, this study will describe in detail the circulation of SARS-CoV-2 and the seroprevalence situation in the refugee camp, as well as the risk factors that accentuate transmission. These results will help to define new health strategies to improve the management of the epidemic in situations of humanitarian crisis, with the introduction of prevention and control measures, particularly through vaccination.

The FDP-COVID19 study is being conducted with the Institute for Developing Science and Health Initiatives in Bangladesh (ideSHi) with the support of the WHO and several humanitarian institutions and organizations in the field.







03 Knowledge sharing

Transferring expertise across national borders and disciplines is one of the Mérieux Foundation's key missions. This commitment acknowledges the absolute necessity of sharing knowledge so that together we can take effective action adapted to the needs of countries with limited resources.



Les Pensières Center for Global Health

Les Pensières is an international public health center situated beside Lake Annecy in France, with expertise based on over 40 years' experience in dialog and a commitment to tackling infectious diseases at a global level. Designed as a space for sharing and reviewing knowledge, it provides the ideal working environment for health organizations, associations, and institutions sharing the same values as the Mérieux Foundation (with conference rooms, catering facilities, and accommodation). On a local level, it also plays an important role in raising awareness of key social and environmental

Knowledge sharing has long been a cornerstone of the Mérieux Foundation's commitment. It means promoting exchanges, training, and collaboration in order to make progress in tackling infectious diseases. This activity involves all the departments and areas of intervention of the Mérieux Foundation and is based on international, interdisciplinary cooperation prioritizing six main themes: vaccinology, diagnostics, infectious diseases, antimicrobial resistance, cholera, and rabies.

The resumption of activities following the pandemic continued in 2023, with face-to-face knowledge sharing reaching the same levels as before the health crisis. The portfolio of training courses was expanded with the launch of Epicourse, an advanced course on epidemiology to help experts deal with complex emergency situations in the field. The Mérieux Foundation now offers five intensive training programs for health professionals and representatives of public authorities in charge of developing and implementing public health policies.

Knowledge sharing activities rely on Les Pensières Center for Global Health, owned by the Foundation, which continues to build on its international reputation in global health. In 2023, 200 events were hosted at Les Pensières Center, bringing together a total of more than 8,000 people. These included the Foundation's advanced courses, McMaster University's course on antimicrobial resistance, the EUROPIT course on the pituitary gland, and the Merck course on vaccinology. The Center also hosted several international conferences, including GTFCC meetings on cholera, a conference on the Global Leadership Laboratory Program (GLLP), the Aspen Europe-Africa conference, and seminars on HIV/AIDS.



Advanced course on diagnostics SDG 17

Advanced training courses

In 2023, the Mérieux Foundation launched its fifth intensive training course. This course on epidemiology is in addition to the existing courses on vaccination (ADVAC), diagnostics (ACDx), and antimicrobial resistance (AMR), each of which is organized every year at Les Pensières Center for Global Health. The Afro-ACDx course, which is a French-speaking version of ACDx and also includes some GLLP modules, is aimed at French-speaking African professionals and is held in Senegal. This local involvement reflects the Foundation's desire to adapt to different contexts and its ability to relocate a training activity to meet learners' needs in the best possible way.

As well as formal learning, these training courses also offer a platform for making contacts and creating networks of alumni, so that participants can establish valuable and long-lasting professional relations.



12th edition of the ACDx course

ACDx 2023

days of training

participants

43 reputable experts

410 Alumni (1 network)

Organized jointly by the Mérieux Foundation and the London School of Hygiene & Tropical Medicine since 2009, the Advanced Course on Diagnostics aims to promote the role and value of diagnostics and to reinforce decision-making capacities in low-income countries. The course focuses on difficulties accessing high-quality diagnostics, particularly for tackling antimicrobial resistance and preparing for epidemics, as well as on encouraging social and technological innovation.

ACDx is an intensive course in English and is aimed at the decisionmakers and scientists involved in developing disease control strategies and tools. The 12th edition took place from September 17 to 22, 2023, and was attended by 25 participants from 17 countries. Three of them benefited from funding from the Mérieux Foundation.

In 2023, the program included the historic resolution of the World Health Assembly on strengthening diagnostics capacity, approved in May 2023. Two new subjects were also introduced: the first on the climate crisis and diagnostics, a key issue at the moment, and the second on the importance of communication in programs for accessing diagnosis. The course is supported by sponsorship and educational grants from bioMérieux, Cepheid, Illumina, FIND, and DTRA (US Defense Threat Reduction Agency).





Advanced course on vaccinology SDG 17

3rd edition of the AFRO-ACDx course

collowing on from the success of the first two editions, the Mérieux Foundation and the Institut Pasteur in Dakar organized the third Afro-ACDx course in 2023. This French-speaking version of the international ACDx program was developed to strengthen the leadership skills of laboratories in West and Central Africa as part of a One Health approach. The course is aimed at laboratory managers and decisionmakers in the field of diagnostics in public health. In 2023, the historic resolution of the World Health Assembly on strengthening diagnostics capacity, approved in May 2023, was included in the program.

Held from November 19 to 24 in Saly, Senegal, the 2023 edition of Afro-ACDx brought together 31 participants from 12 countries. A visit to the African Center for Resilience to Epidemics (CARE) was organized and several production and analysis sites at the Institut Pasteur in Dakar opened their doors to the students. Afro-ACDx benefits from the financial support of bioMérieux, Cepheid, and Illumina.

Afro-ACDx 2023 31 days of training reputable participants experts





A dynamic network of alumni

Two meetings of former students were organized in 2023 in the form of webinars: on the challenges of eliminating measles and rubella in South-East Asia (April 12) and on the economic perspectives for vaccination programs (September 20).

23rd edition of the ADVAC course

Acknowledged as one of the most prestigious courses in its field, ADVAC is an intensive training program in vaccinology, which was set up by the Mérieux Foundation and the University of Geneva in 2009. Geared towards managers from all levels of the health care system, ADVAC aims to facilitate critical decision-making in vaccinology, by providing participants with a complete overview of the sector, from immunology to the development of vaccines, as well as covering the social, economic, political, and ethical issues associated with vaccination.

The 23rd edition of ADVAC took place from May 8 to 19, 2023, and was attended by 74 participants from 41 countries. The participants were also able to attend the 7th Lambert lecture and the 15th Plotkin lecture, addressing the future of vaccines based on T CD8+ cells and monkeypox respectively. Each year, European training credits are requested from the European Accreditation Council for Continuing Medical Education (EACCME). In 2023, 66 credits were awarded.

"The future of immunization is in your hands. As leaders, you have a voice that will be heard!"

Violaine Mitchell, Director of the Immunization program at the Bill & Melinda Gates Foundation, at the 23rd edition of ADVAC

ADVAC 2023

days of training

74 participants

80 reputable experts

1400 Alumni (1 network)





Course on antimicrobial resistance a One Health challenge SDG 17

4th edition of the AMR course

Based on the objectives of the WHO's Global Action Plan on antimicrobial resistance, the AMR course developed in 2019 by the Mérieux Foundation and Paris Cité University aims to support the fight against AMR and strengthen decision-making as part of an interdisciplinary approach. The fourth AMR One Health Challenge took place from November 6 to 10, 2023, and brought together 40 doctors, vets, environmentalists, and experts in biological sciences, human and social sciences, and public health from 20 countries in Asia, Africa, and the Middle East, all of whom were selected for their commitment to tackling AMR in their countries.

In 2023, the program offered an-depth study of the WASH (Water, Sanitation, Hygiene) and IPC (Infection Control and Prevention) components, with contributions by experts from UNICEF, the WHO, and the FAO. The Oxford Institute, Sanofi, IFPMA, and bioMérieux supported the participation of several candidates from low-income countries.

AMR course 2023 40 reputable days of training participants experts



Advanced course on epidemiology in complex emergency situations SDG 17

Launch of the Epi-Course

The first edition of the Advanced Course on Epidemiology, Epi-Course, organized jointly by the Mérieux Foundation and Epiconcept, took place from March 20 to 24, 2023, and was attended by 22 participants from 12 French-speaking countries.

The program was developed with the help of a scientific committee made up of representatives of the Hospices Civils de Lyon, GAVI, the Institut Pasteur, the WHO, the WAHO (West African Health Organization), and the Nazi Boni University in Burkina Faso.

Epi-Course was set up to fulfill the need to strengthen capacities in epidemiology, after the last two epidemics (COVID-19 and Ebola) revealed shortfalls in warning, surveillance, and investigation systems. The aim is to establish a community of French-speaking epidemiologists working in human, animal, and environmental health, who are able to provide a multidisciplinary and international response to complex emergency epidemic situations.

This first edition was a resounding success, with 97% of participants declaring that the course fulfilled their expectations. After the course, the participants continued their discussions by organizing four webinars. Epi-Course benefited from grants allocated by bioMérieux and Illumina.

Epi-Course

days of training

22 participants

20 reputable experts





Global partnership to fight cholera

The Mérieux Foundation has been involved in the Global Task Force on Cholera Control since 2017, along with more than 50 organizations, including GAVI and the Bill & Melinda Gates Foundation. The GTFCC's objective is to develop measures to control the disease at regional level. This multi-sector partnership has set itself the objective of reducing the number of deaths from cholera by 90% by 2030, thanks to a shared global road map.

The Mérieux Foundation is involved in the implementation of activities linked with knowledge sharing, taking responsibility for the website, and the organization of meetings, including the annual meeting at Les Pensières Center for Global Health and meetings of the themed working groups (see inset).

In 2023, the 10th annual meeting of the GTFCC was held on June 26, 27, and 28 and was attended by 214 people in person and remotely. This hybrid format was also adopted for meetings of the themed working groups so that discussions could also include people working in the field.



Cholera emergency

Due to the effects of climate change and an increasing number of conflicts, there has been an upsurge in the number of cholera cases. According to the WHO, the number of cases more than doubled between 2021 and 2022 to reach 473,000. and increased to more than 700.000 in 2023. Several epidemic alerts have been reported, particularly in the Democratic Republic of the Congo, Malawi, and South Africa.



GTFCC themed workshops 2023

- → WASH (Water, Sanitation, Health) working groups 8th meeting, March 20 and 21, 2023, New York – 55 participants
- → Surveillance working groups (epidemiology and laboratory) 8th meeting, May 2 to 5, 2023, Maputo, Mozambique 160 participants
- → Oral cholera vaccine working groups 10th meeting, October 11 to 13, 2023, Seoul, South Korea 122 participants



Public health

The Mérieux Foundation contributes to several global public

health initiatives. By combining complementary areas of expertise,

play an essential role in the fight against infectious diseases. They

optimizing resources, and creating synergies, these partnerships

also make it possible to include issues affecting countries with

limited resources in major international initiatives.

initiatives





Tackling pneumonia

In 2022, the Mérieux Foundation formed a partnership with the Every Breath Counts coalition, the world's first public-private partnership against pneumonia, which is the biggest infectious killer worldwide. Made up of UN agencies, businesses, donors, academic institutions, and NGOs, Every Breath Counts supports governments in countries most at risk from pneumonia and campaigns for urgent action to reduce the burden of the disease.

In 2023, in the context of the introduction of two pediatric vaccines against respiratory infections in Chad, Guinea, Somalia, and South Sudan, a support project was set up by the Mérieux Foundation, Every Breath Counts, the Malaria Consortium, the International Vaccine Access Center (IVAC), and Save the Children. In partnership with the Ministry of Public Health and Prevention in Chad, a workshop was organized from September 13 to 15 in N'Djamena, which was attended by 80 participants. The objective of this workshop was to facilitate the introduction of the PCV (pneumococcal conjugate vaccine) and the rotavirus vaccine in the four countries and to help governments submit their funding requests to GAVI in 2024.



Reinforcing trust in vaccines

aunched by the Mérieux Foundation in 2008, the Vaccine Acceptance Initiative campaigns for the adoption of vaccines and shares information on instruments that encourage the understanding, introduction, and adoption of vaccines. The COVID-19 pandemic revealed how mistrust in vaccination can be an obstacle to preventing the burden of infectious diseases. In order to help restore confidence, the Vaccine Acceptance Initiative aims to create opportunities for dialog on issues relating to the resilience of immunization programs.

A series of meetings on social and behavioral determinants and the lessons learned from the introduction of the COVID-19 vaccine was organized at Les Pensières Center for Global Health on October 30 and 31 and November 1, 2023, and attended by 40 participants. These events benefited from the support of Sanofi and MSD.



MERACON regional network for rabies control

Controlling rabies

The Mérieux Foundation supports the MERACON regional network for rabies control in the Middle East, Eastern Europe, Central Asia, and North Africa. Set up in 2018, MERACON took over from the MEEREB (Middle East, Eastern Europe, Central Asia and North Africa Rabies Expert Bureau) network, which had been managed by the Mérieux Foundation since 2012. MERACON is led by the Global Alliance for Rabies Control (GARC), in close collaboration with the Foundation.

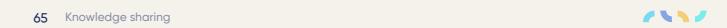
MERCACON provides scientific expertise, planning, and operational support to help governments and decision-makers commit to improved programs for controlling and eliminating rabies.



«Zero by 30» objective

Regional networks for controlling rabies play an important role in implementing the global strategic plan to end human deaths from dogmediated rabies by 2030, in accordance with the WHO's «Zero by 30» objective.





Global Forum on

Childhood Pneumonia

The Mérieux Foundation

was involved in the second

Global Forum on Childhood

Pneumonia, held in Madrid

pediatric vaccines in Chad,

Guinea, Somalia, and South

Sudan were presented at

on April 26 and 27, 2023.

the introduction of two

Activities to support

the forum.

Asia Dengue Voice & Action (ADVA) SDG 17

Prevention and control of dengue

Set up in 2013, Asia Dengue Voice and Action (ADVA) is a scientific working group dedicated to the prevention and control of dengue in Asia. Thanks to a collaboration with the government, universities, industry, and non-governmental organizations, ADVA is continuing its mission to fight dengue throughout Asia with numerous workshops and webinars to provide information and raise awareness.

In this context, the Mérieux Foundation was a partner for the 6th Asia Dengue Summit held in Bangkok on June 15 and 16, 2023. 170 dengue experts from all over the world came to share their knowledge in order to improve the prevention and control of the disease on a global scale. The event was organized jointly by ADVA, the Global Dengue and Aedes-transmitted Diseases Consortium (GDAC), the South-East Asian Ministers of Education Tropical Medicine and Public Health Network (SEAMEO TROPMED), and the International Society for Neglected Tropical Diseases (ISNTD).



Introducing PCV and rotavirus vaccine Workshop SDG 3 and 17

Supporting vaccine policies

he Mérieux Foundation, Every Breath Counts, the Malaria Consortium, I the International Vaccine Access Center (IVAC), and Save the Children, in partnership with the Chad Ministry of Public Health and Prevention hosted an in person Workshop from 13 to 15 September. This workshop aimed to bring together the stakeholders to support the governments of Chad, Guinea, Somalia, and South Sudan after they expressed their commitment to introducing the pneumococcal conjugate vaccine (PCV) and rotavirus vaccine.

The two vaccines have the potential to prevent the deaths of tens of thousands of children across the four countries by 2030, boosting each country's progress to achieving the Sustainable Development Goal for child survival.

With more than 80 national, regional and international participants, the workshop was the occasion to troubleshoot barriers and advance solutions, facilitate scale-up and enable the four governments to obtain the guidance and the support they needed.









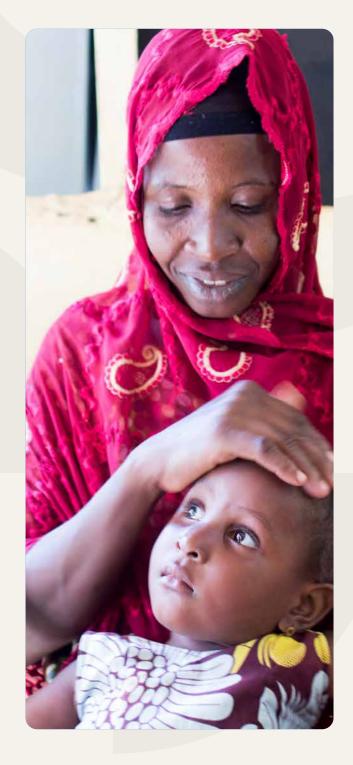
04 Mothers & Children programs The Mérieux Foundation supports projects to help the most disadvantaged populations, especially women and children, who are the primary victims in crisis situations. This commitment covers their basic human needs as part of a global health approach.

In situations of insecurity or severe poverty, the Mérieux Foundation is committed to supporting local partners as they improve the living conditions of fragile populations. These projects cover access to healthcare, education, and basic needs such as hygiene, food, and housing.

The Foundation's commitment covers two types of intervention:

- The development of new projects, with operations run by the Mérieux Foundation and its teams, resulting primarily in the establishment of primary health centers and maternity units, such as in Lebanon where a second health center is currently under construction. The Mérieux Foundation also responds to emergency situations in the event of conflicts or natural disasters.
- Support for associations working in the field

 → with long-running partnerships such as with
 Akamasoa in Madagascar and Enfants du
 Mékong in Cambodia.



Operational projects to improve access to healthcare

The Mérieux Foundation provides its expertise directly in the field to improve the living conditions of the most vulnerable communities, as part of a global healthcare approach covering physical, mental, and social health. Several community health centers have thus been built or renovated thanks to the support and expertise of the Foundation working alongside local health authorities.





Lebanon SDG 3

Extension of the activities of the duris center for Mothers & Children

collowing the initial construction and launch phase completed in 2021, the second phase of support for the Duris health center in the Begaa Valley in Lebanon was finalized at the end of 2023. This support was directed at increasing the capacity of the center and expanding its healthcare services, with a component on awareness and prevention (infectious diseases, cancer, and mental health). Progress made in 2023 includes the development of new spaces, the recruitment of new areas of expertise (nutritionist, speech therapist, and nurses), and the integration of the center in the national network of primary health centers in Lebanon. At the same time, a study was carried out by the Foundation in order to capitalize on this experience and use it as a model to replicate in similar contexts.

Under the supervision of the Ministry of Public Health, the project is being coordinated by the Mérieux Foundation with the support of the Department of International Cooperation of the Principality of Monaco. The center is managed by the local NGO AMEL International, with the help of the Governorate of Baalbek-Hermel and the Municipality of







Lebanon SDG 3

Construction of a primary health center in Baalbek

In 2023, a new construction project for a community health center was launched in Baalbek, Lebanon, with the objective of improving maternal and infant health in the most vulnerable populations, including military personnel in the Lebanese army and their families. Continuing the Mérieux Foundation's activities promoting access to healthcare in the region, this project draws on the experience gained at the Duris health center.

Once architectural and geotechnical studies had been carried out and the building site had been validated, the project was approved, and construction work is scheduled to begin in 2024. The project is being carried out in association with the Governorate of Baalbek-Hermel and the Lebanese army.



Senegal SDG 3 and 5

Development of a Mothers & Children center in Thiadiaye



A new project launched in 2023 covers the establishment of a specific healthcare circuit for mothers and children, with the creation of a specialist wing at the health center in Thiadiaye, western Senegal. The objective is to facilitate access to the Mother & Child center and to the medical biology laboratory in order to improve maternal, newborn, and infant health. The project, the first of its kind in the country, is based on an inclusive and holistic approach covering clinical, psychological, and social care, as well as parenting support. By the end of 2023, the memorandum of understanding had been signed with the Ministry of Health and Social Action, plans had been approved, service providers selected, and the laying of the foundation stone had been celebrated. Construction work will begin in 2024.

This project was developed in close collaboration with the Ministry of Health and Social Action, the Thiès regional health department, the health district, and associations. It is being funded with the support of the Department of International Cooperation of the Principality of Monaco and the AnBer Foundation.



Republic of the Congo SDG 3

Construction of a maternity unit in Brazzaville



In partnership with the Congolese Foundation for Medical Research and under the guidance of Pr Ntoumi, winner of the 2016 Christophe Mérieux Prize, the Mérieux Foundation is funding the construction of a maternity unit in Brazzaville. This maternity unit will also have a pediatrics department and will be located in a two-story building next to a health center and medical analysis laboratory.

The Mérieux Foundation is providing technical support for the development and interior design of the new building: review and selection of available options, monitoring of associated costs, and supervision of the building site. The major structural works were completed in December 2022. The delivery of the building that will house the future maternity unit was celebrated on April 10, 2023, during a visit by a delegation from the Mérieux Foundation. The maternity unit







Distributive projects in favor of partners in the field

Within the framework of historic partnerships or one-off actions in response to emergency situations, the Mérieux Foundation finances projects run by local associations to improve living conditions in the poorest communities.





Cambodia

SDG 1, 3 and 4

Support for the Enfants du Mékong association

Since 2010, the Mérieux Foundation and the Fondation Christophe et Rodolphe Mérieux have been supporting the Doctor Christophe Mérieux University Center in Phnom Penh, managed by the NGO Enfants du Mékong. This center was developed to offer students from disadvantaged backgrounds the possibility of pursuing further education and since 2013 has also provided places for nursery school children. In 2023, the Mérieux Foundation's support enabled 120 students and 55 nursery school children to attend the center and social support was also provided for 350 other children. Free English lessons were also organized for children living near the center.

Since 2018, the Foundation's funding has enabled Enfants du Mékong to run a "Mothers & Children" social project to help families gain financial independence and guarantee a safe emotional and physical environment for children. Almost 250 families living in poverty were given support in 2023 (distribution of food and hygiene kits) and 114 mothers in difficulty benefited from the distribution of breast milk for their newborns. Training sessions in budget management, first aid, and parenthood were organized for more than 200 parents and 26 construction/renovation projects were financed to improve families' living conditions.







Mali | Senegal | Burkina Faso SDG 2, 3 and 4

Contributing to the development of Samusocial

aunched in 2005 in Mali with the Fondation Christophe et Rodolphe Mérieux, support for Samusocial was extended to Senegal and Burkina Faso in 2009. The program helps children and young people in situations of social exclusion and focuses on actions providing medical and psychosocial treatment and educational initiatives.

In 2023, the Mérieux Foundation supported Samusocial in Mali, Burkina Faso, and Senegal with a global grant paid to Samusocial International. This donation supported mobile teams working at the three units, who carried out more than 2,000 rounds throughout the year, as well as providing medical care and social and psychological support (more than 16,000 beneficiaries). It also helped to provide emergency accommodation (more than 1,600 people in 2023) and supported projects to get people off the streets: reconnecting with their families, education, professional training, etc.





Historic Partnership with **GHESKIO Centers**

Set up in 1982, GHESKIO Centers (Haitian Group for the Study of Kaposi's Sarcoma and other Opportunistic Infections) are dedicated to operational research, training, and services linked with diseases having a major impact on public health in Haiti (HIV, TB, sexually transmitted diseases, and diarrheal illnesses). The Mérieux Foundation is a partner of GHESKIO in numerous projects carried out in Haiti, across all its areas of intervention.

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SDG 1, 3 and 4

Support for the microcredit activities of GHESKIO Centers

Cince 2005, the Mérieux Foundation has supported the "Microcredit and training program for women living with HIV and vulnerable women in Haiti" program implemented by the GHESKIO Centers in collaboration with the microfinance institution ACME (Action pour la Coopération avec la Microfinance). This initiative is aimed at communities in difficult situations and offers global support: medical and psychosocial care, access to education, and income-generating activities.

The Foundation's support, renewed for another year from April 1, 2023, allowed a new phase of the program to be launched, benefiting more than 900 women and 100 children (650 training courses in small businesses, 258 professional training courses, 88 educational grants, etc.). The Foundation's aid has also enabled 114 families who were forced to move for safety reasons to be rehoused and provided ongoing training for 22 primary school teachers at GHESKIO Centers.





Madagascar SDG1

Tackling poverty with Akamasoa

Cince 2014, with the help of the Fondation Christophe et Rodolphe Mérieux, the Mérieux Foundation has supported the Madagascan association for tackling poverty, Akamasoa ("good friends"), which works towards improving living conditions in the villages surrounding Antananarivo. Each year, a grant is allocated to support infrastructure projects promoting access to hygiene, education, and healthcare.

Following the inauguration of the Saint Vincent de Paul-Akamasoa University in 2022, work was completed in 2023, as well as the construction of a four-story library and 40 residences. The campus of this English and French language university has a capacity for 1,000 students from poor families from all provinces on the island.



Burking Faso SDG 3, 4 and 8

Support for orphans with the **GO PAGA** association

n 2022, the Mérieux Foundation started supporting the association Go Paga in Burkina Faso, which helps the widows and orphans of soldiers. The deterioration of the security situation in the country since 2015 has led to more than a million deaths in the defense and security forces, leaving many families without a source of income. Go Paga was set up to support the social, economic, and professional integration of widows and orphans through two main actions:

- > support for education and the organization of extracurricular
- professional training and support for the development of incomegenerating activities.

In 2023, the Mérieux Foundation's support allowed 100 orphaned children to attend school for the 2023/2024 school year, as well as covering enrollment for summer holiday camps. The Foundation also contributed to the training of 60 widows (dressmaking and business leadership) and to the allocation of 25 kits for setting up small businesses.











Armenia SDG 3

Support for the Actions Santé Femmes association

Actions Santé Femmes (ASF) is a French NGO committed to the health of women in severe difficulty all over the world. In 2023, the Mérieux Foundation provided the ASF with financial support for implementing its "Health of Armenian women in the Shirak and Syunik Provinces" project in order to improve gynecological and obstetric health services for women in the most precarious situations through training for professionals in primary health centers.

This support contributed to activities in the field in both provinces:

- → Workshops for pregnant women and training for lead midwives in maternity units (on pregnancy, childbirth, postpartum care, relations between men/women, cancer screening, etc.);
- → Consultations by ASF teams working alongside Armenian gynecologists and obstetricians;
- → Educational support for teaching staff at the medical college in Gyumri State in training student midwives.





Guinea SDG 3

Support for the Saint Gabriel de Conakry clinic

Inaugurated in October 2022, the extension of the Saint Gabriel de Conakry clinic in Guinea was provided with additional support from the Mérieux Foundation in 2023. The Saint Gabriel clinic has a primary health center and a maternity unit, which itself has a prenatal center for women living with HIV/AIDS and their children, providing them with follow-up care.

In 2023, the Mérieux Foundation provided financial support for several of

- → The creation of a waiting room and consultation room to allow pregnant women to have scans at minimum cost;
- → The acquisition of a neonatal resuscitation table and electrical backup batteries to limit the impact of power cuts on the maternity
- → The creation of a training room and an ongoing learning module for the medical team.





Saint Gabriel, a maternity unit and primary healthcare clinic

Saint Gabriel is a key healthcare

structure and one of the busiest in Guinea. The clinic specializes in HIV screening for pregnant women. In 2012 a PMTCT program (prevention of mother-to-child transmission of HIV) was launched in collaboration with the DREAM program (a model for the integration of services for maternal and infant healthcare). In 2022, the extension funded by the ADP Foundation, the DREAM program, and the Mérieux Foundation (an additional story with a surface area of 78 m²) allowed an increase in the clinic's capacities for screening and treating people living with HIV.

Small Grants 2023

SDG 1, 2, 3 and 4

The Mérieux Foundation's Small Grants program is a €50,000-a-year fund that awards grants of up to €5,000 to small organizations with a strong local impact. Two application review sessions are held each year. Ten projects were selected in 2023:

Support for primary healthcare structures

- > Improving the quality of healthcare provided at the maternity unit in Ngougoumou, Cameroon, thanks to the supply of solar power (Mengbwa Actions Jeunes)
- → Renovation of the maternity unit at the health outpost in Sombo in the Democratic Republic of the Congo (Baptist Community of the Congo River)

Education and awareness

- > Training in maternal and infant health for healthcare staff and pregnant women in Haiti (Club des Jeunes Progressistes pour le Développement Social de Carrefour-Feuilles)
- → Reinforcing the resilience of women and children affected by conflict through the prevention, diagnosis, and treatment of infectious diseases in North-West Cameroon (Community Action for Advancing Sustainable Development)
- → Health education (infectious diseases, reproductive health, etc.) to improve maternal and infant health in the Sinjar region in Iraq (Doctors of Peace)

Global health actions (WASH & Nutrition)

- → Tackling waterborne diseases by renovating latrines in primary schools in Uvira, Democratic Republic of the Congo (Aide Rapide aux Victimes des Catastrophes)
- → Improving the living conditions of HIV-positive widows and their children in Kibeho, Rwanda, by providing learning support and incomegenerating activities (Artisans de la Paix)
- → Controlling infectious diseases by treating contaminated water sources and raising awareness in communities in Benin (Vidécon Environnement)
- → Supporting the maternal health of Sudanese refugees in Egypt through the distribution of dignity kits and infant milk (Rawsa Women Alliance)
- → Creation of a laboratory preparing Madagascan essential oils in Antsirabe, Madagascar, to support vulnerable populations (Aromathérapeutes du Vakinankaratra)







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"Building on our expertise in biology, we are working closely with international and local partners as part of multidisciplinary, complementary and, above all, concerted approaches with a longterm perspective."

Alain MÉRIEUX - President

To successfully carry out its development projects in LMICs and ensure they produce sustainable results, the Mérieux Foundation brings together national and international public and private partners with local organizations. The trust and commitment of its new or long-standing partners have made it possible for the Foundation to help local stakeholders in their fight against infectious diseases. The Mérieux Foundation thanks them warmly for their

Regional, national & international institutions

Agence Française de Développement (AFD)

Coalition for Epidemic Preparedness Innovations (CEPI) Defense Threat Reduction Agency (DTRA)

Department of Foreign Affairs and Trade, Australian Government (DFAT)

Department of International Cooperation of Prince's Government of Monaco

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Economic Community of Central African States

European Commission

Expertise France

Food and Agriculture Organization (FAO)

Fleming Fund: UK Department of Health and Social Care via Mott McDonald

Global Fund via UMRSS (Unité de mise en œuvre du renforcement du système de santé), Mali

Horizon 2020 (European Commission)

IFPMA (International Federation of Pharmaceutical Manufacturers and Associations)

Infectious Disease Detection and Surveillance (IDDS-

International Development Association (IDA) via WAHO International Organization for Migration (IOM)

L'Initiative (Expertise France)

Luxembourg Government Aid and Development Agency (LuxDev)

Swedish International Development Cooperation

The Joint Programming Initiative on Antimicrobial Resistance (JPIAMR)

United States Agency for International Development (USAID)

Wellcome Trust

World Health Organization (WHO)

Foundations & NGOS

African Society for Laboratory Medicine Bill & Melinda Gates Foundation

Fondation anBer

Fondation Pierre Fabre

Fondation Raoul Follereau

Fondation Saint-Irénée

French Red Cross

IPHARMEX

PATH Solthis

CanSinoBIO

Cepheid

bioMérieux

GlaxoSmithKline Biologicals (GSK) Illumina

Institut Mérieux

Janssen Vaccines & Prevention (JNJ)

Merck/MSD

Moderna Pfizer

Sanofi Pasteur

Serum Institute of India Shearman & Sterling

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Emerging Infectious Diseases (ANRS) French National Research Agency (ANR)

Institut de Recherche pour le Développement (the French National Research Institute for Sustainable Development)

International Vaccine Institute (IVI)

Oxford University

University of Geneva







¹Since September 2023 ² Acting as since January 1 2023 ³Until March 31 2023

2023 accounts and key figures -**Balance Sheet**

ASSETS (K€)	NET 31 DEC. 2023	NET 31 DEC. 2022
Fixed assets		
Intangible fixed assets	560	875
Property, plant and equipment	4087	4396
Investments and other financial assets	47 992	45 436
TOTAL	52 639	50 706
Current assets		
Accounts receivable	1453	909
Other receivables	8 723	13 302
Marketable securities	42 440	38 600
Cash and cash equivalents	9 849	16 616
Prepaid expenses	1 510	2 202
Unrealized exchange losses	5	6
TOTAL	63 980	71 635
TOTAL ASSETS	116 619	122 341

LIABILITIES AND FUND BALANCE (KE)	31 DÉC. 2023	31 DÉC. 2022
Fund balance		
True endowment	68 216	68 216
Reserves	884	884
Retained earnings	15 640	15 437
Net income / loss for the period	2 438	203
Other endowment	7	7
TOTAL	87 185	84 747
Quasi endowment		
Allowence for contigencies	180	117
Funds reserved for future engagements	1 473	2 200
TOTAL	1 653	2 318
Liabilities		
Loans	6 051	5 438
Accounts payable	1 937	3 270
Tax and social debts	1 713	1704
Investment payable	-	-
Other payable	1284	5 502
Deferred income	16 795	19 36
Unrealized exchange gains	-	2
TOTAL	27 781	35 276
TOTAL LIABILITIES AND FUND BALANCE	116 619	122 341

2023 accounts and key figures —— Income Statement

(K€)	ACTUAL 2023	ACTUAL 2022
Income		
Services revenue	1044	957
Income from third-party funders	20 072	19 021
Expenses refund	593	179
Other operating income	56	135
TOTAL INCOME	21 764	20 292
Expenses		
External purchases and expenses	13 128	14 214
Financial aid	4 780	4 348
Taxes and duties	787	891
Salaries and social contributions	6 651	6 718
Depreciations	797	760
Dedicated funds carried over	-727	-1760
Other operating income	253	263
TOTAL EXPENSES	25 668	25 433
OPERATING RESULTS	-3 903	-5 141
Financial income		
Dividends	887	884
Other financial income	2 568	5 210
Reverse on financial allowances	104	52
Net income from marketable securities	4028	-
TOTAL FINANCIAL INCOME	7 587	6 147
Financial expenses		
Financial allowances	950	227
Other financial expenses	235	537
TOTAL FINANCIAL EXPENSES	1185	764
FINANCIAL RESULTS	6 402	5383
Exceptional income		
Exceptional income	-	-
Exceptional reverse in allowances	-	97
TOTAL EXCEPTIONAL INCOME	0	97
Exceptional costs		
Exceptional expenses	60	137
Exceptional allowances for contingencies	-	-
TOTAL EXCEPTIONAL COSTS	60	137
EXCEPTIONAL RESULT	-60	-40
Income tax	-	-
TOTAL INCOME	29 351	26 536
TOTAL EXPENSES	26 913	26 333
INTERMEDIATE BALANCE	2 438	203





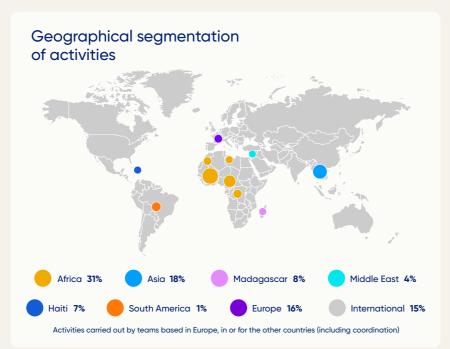
2023 accounts and key figures

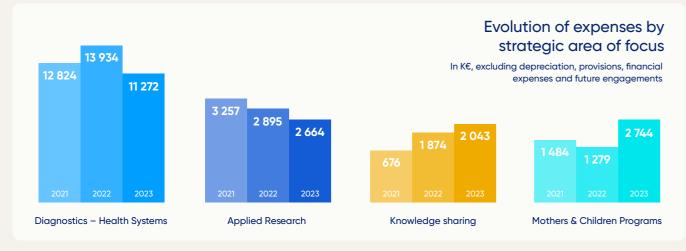


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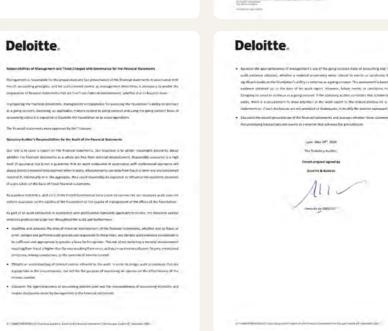














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Copywriting

Fondation Mérieux fondation-merieux.org Sophie Poisard-Storz solutions-editoriales.com

Design and production

Agence EVOL

Printing

Imprimerie CUSIN Imprimé en France Juillet 2024