



INSTITUTE
OF TROPICAL
MEDICINE
ANTWERP

Annual Report

2022





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Global Science for Health Worldwide

Tropical diseases, HIV/AIDS, tuberculosis and inadequate health care influence the lives of billions of people worldwide.

The Institute of Tropical Medicine in Antwerp, Belgium, promotes the advancement of science and health for all, through innovative research, advanced education, professional services and capacity strengthening of partner institutions in Africa, Asia and Latin America.

For us, scientific excellence and societal impact are two sides of the same coin.



Our values

Excellence & Relevance

We strive to stand at the international forefront in key scientific domains and pursue the highest quality in research, education and services with the ultimate aim to solve current health problems.

Integrity

We want to comply with international ethical standards and aim for critical sense, honesty and transparency in all our activities.

Fairness

We value equity, diversity, solidarity and well-being of students and employees and in partnerships.

Sustainability & Persistence

We aim for long-term progress without compromising the ability of future generations.



Our vision

Equal chances at a healthy life for all.



Our mission

Scientific progress in tropical medicine and public health.



Our core tasks

Scientific research; higher education; medical and scientific service provision.



Foreword by the Chair **Herwig Leirs**

For those familiar with the ITM Annual Report and its foreword, you will recognise a major change from the past 14 years – I am not Cathy Berx! With Cathy having stepped down, it is I, Herwig Leirs, Interim Chair and Vice Chair of the ITM Board of Governors, who has the privilege of welcoming you to this Annual Report and of inviting you on a journey through the achievements of the institute in 2022. In 2023, as new Chair of the Board of Governors, this honour will be Jo Bury's.

From the governance perspective the year was marked by four key events: the election of a new alumni representative to the General Council, the selection of five new Governors to the Board, the departure of our long-standing Chair, Cathy Berx and her appointment as Honorary Chair, and the appointment of the new Chair, Jo Bury, who will lead the Board of Governors from 2023 onwards.

Firstly, January brought the election of Dr Elizabeth Tabitha Abbew as alumni representative of our General Council for the 2022–2026 term. A specialist in internal medicine, Elizabeth is from Ghana. She graduated from our Master of Science in Tropical Medicine in 2021 and started her PhD in 2022. She took over from Anne Muendi Musuva

(Kenya), who was the first ITM alumna elected to the newly formed General Council in 2018.

I want to thank Anne for her contribution to this statutory body that ensures the policy, administration, and management of ITM align with its purpose, identity and integrity. Her energy and commitment in the founding years of the Council and her calm and wise ways were very much appreciated.

Secondly, January 2022 brought a call for applicants to the institute's Board of Governors. As per our statutes, the General Council was charged with the evaluation and appointment of these new Governors. A selection committee, made up of members of the Council and ITM Director Marc-Alain Widdowson, and supported by ITM's General Manager Ann Peters and the Board member Steven Serneels, took charge of the task. Working through 41 applications they announced five new appointments in June 2022. Thank you to those involved for their thorough work allowing us to have complimentary profiles that will strengthen our Board and our governance.

From August, we had the pleasure of welcoming Ann Aerts, Ann Adriaensen, Inge Basteleurs, Luc Broos and Jo Bury as new members of the Board along with hosting an official leaving reception for Cathy Berx. Cathy was given and gracefully accepted the title of Honorary Chair. ITM has much to thank her for. Over the past 14 years, she worked to see the institute evolve into a modern scientific institution that is standing the test of time and maintaining its relevance in a changing healthcare and policy landscape. I would also like to say a personal thank you to Cathy – taking over the reins for the last six months of the year as Interim Chair was greatly

facilitated by our trusted working relationship. I also need to thank Patricia Lanssiers and Dirk Moens, another two departing members of the Board, for their commitment and contribution to the success of the institute.

Along with these occurrences the daily business of the Board continued. Key topics addressed were the update of the ITM salary policy that was put in place in 2022. The 'masterplan' for the institute's infrastructure has also been moving ahead with some decisions on possible new buildings and key locations firming up.

To finalise the year, a new Chair has been elected - Jo Bury. Jo is founder and ex-managing director of the Flemish Institute of Biotechnology (VIB) and is well equipped for bringing the institute forward on its path of scientific excellence and relevance in a changing world into 2023 and beyond. I look forward to working with him – and with this I hand the writing of next year's Annual Report Foreword and all that it encompasses into his capable hands!

I wish you all good reading and to our continued journey into 2023 with ITM and its robust governance structure now again filled with a new team of committed, engaged experts.

Herwig Leirs

*Interim Chair of the Board of Governors
and Vice-Chair of the Board of Governors*

New Chair of the Board of Governors from 2023: Jo Bury

"Over the past 25 years, I have built up management experience at academic institutions and managed a research centre with world-class ambitions, both in basic research and in its economic and societal valorisation. It fills me with excitement that I can apply this knowledge and experience as chair to further advance the internationally respected ITM. I look forward to contributing to the scientific excellence and societal relevance of the institute with an inspiring and supportive Board of Governors."



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Director's note

Marc-Alain Widdowson

Looking back at 2022, I see that after two years of working closely on and during the pandemic, the year brought some needed relief from COVID-19 ushering in one of consolidation and reflection. I'm proud to share examples in this 2022 review, of our continued impact through science for health worldwide. This year has highlighted the importance of institutions such as ITM in a changing world.



2022 has brought the strengthening and renewal of core ITM research staff. Professors Kevin Ariën and Johan van Griensven started their mandates as Head of Department of Biomedical Sciences and as Head of the Department of Clinical Sciences respectively. We were also very pleased to welcome two newly appointed professors, one in an established field for ITM, Bernadette Hensen – to head the Unit of Sexual Health Including HIV, and another professor in a developing field, Laurens Liesenborghs, to head the Unit of Clinical Emerging Infectious Diseases. We are actively recruiting other new research-focused professors, thanks to the one million euro a year structural subsidy provided by the Flemish Government's Department of Economy, Science and Innovation (EWI), and we are boosting our research starting packages to attract further excellent talent. In addition, we finalised our new salary policy, which will increase our competitiveness and add flexibility to our hiring and promotion processes.

We convened our newly constituted Scientific Advisory Council, which provided us with excellent perspective and recommendations, including increasing the visibility of the work ITM does. Their advice will now be discussed in a variety of internal fora and with the Board of Governors for action and incorporation into ITM policy plans.

After our nimble and determined response to the COVID crisis, 2022 saw the completion of COVID studies, continued work on how to improve failings of global policy but also a move back to longstanding research priorities, with key research and programme lines continuing to deliver. ITM highlighted its leading role in the work to eliminate human African trypanosomiasis transmission by 2030, through holding a meeting of key global stakeholders. We welcomed 400 attendees to our Colloquium 'Global Exchange on COVID-19: Takeaways from a pandemic', culminating with a high-level panel of leading experts and policy makers, nationally and globally.

Just as this pandemic was waning, another disease emerged in new populations globally. Through our trusted clinic, with strong relations with the MSM community, we were able to identify and describe the first mpox cases, and then conduct research on shedding and prevention strategies. At the same time, we were investigating and setting up a project on mpox in the DRC with our local partners. This response reflected ITM's mission well of science, impact and partnership and the advantage of a global perspective.

Other scientific highlights included the opening of a new Clinical Trial Centre, financed by EWI. The centre will be key in exploring prevention and treatment measures in Belgium that can be applied and used globally. We also became partner once again in the European & Developing Countries Clinical Trials Partnership (EDCTP). ITM is representing Belgian actors in this European Union project, which funds clinical research in sub-Saharan Africa.

In education, the years of the pandemic brought an accelerated move towards hybrid learning but also stimulated us to think more about how we should be targeting our education – to increase focus on a global perspective and stimulate more diversity in the student body and scholarships. This year also brought the launch of our new MSc in Global One Health addressing – especially post pandemic and with climate change's increasingly negative impact – the need for more One Health expertise.

In 2022, we also started our new five-year agreement with the Directorate-General for Development Cooperation and Humanitarian Aid (DGD) and welcomed two new partners, Nepal and Rwanda. Also new in the agreement was our 'Synergy' programme aimed at better bridging capacity building and research, and helping our partners everywhere become effective, impactful global health scientists.

Our office in the DRC has continued to grow and is pivotal in our sleeping sickness elimination programme as well as in our DGD programme in the DRC. The office welcomed the King and Queen of the Belgians, and here in Antwerp we welcomed the DRC's Minister of Health and the ambassadors of Mozambique, Cuba, Panama and Malawi to discuss collaborations.

Of course, February brought the war in Ukraine and increased inflationary pressure as well spiking energy bills. Ann Peters, our General Manager, successfully steered us into measures to reduce these bills, get additional subsidies and look at options for more sustainable energy use in the future. It is also part of our masterplan to expand and renew our infrastructure, and reducing our CO₂ imprint is of special importance to our values. We were also able to apply the Romain De Cock scholarship to bring over a Nigerian OB/GYN physician studying in Ukraine, to continue her education in public health in Antwerp.

Thank you to all involved, with a special thanks to Cathy Berx who left as Chair of the Board of Governors and Herwig Leirs, who took over as Interim Chair for the second half of the year. I'd also like to welcome our newly appointed Chair, Jo Bury, and Herwig Leirs as Vice-Chair. 2023 promises its own challenges, but with focus on our vision of scientific excellence, impact and global partnerships, I'm sure ITM will overcome them and be stronger and more impactful for it.

Marc-Alain Widdowson
Director

ITM under the lens

Pathogens, Patients, Populations = P³

Our three scientific departments focus on Pathogens, Patients and Populations (P³) and all contribute to our four core tasks of research, education, medical services and international cooperation.

INTERNATIONAL
COOPERATION

26

institutional partners



RESEARCH

397

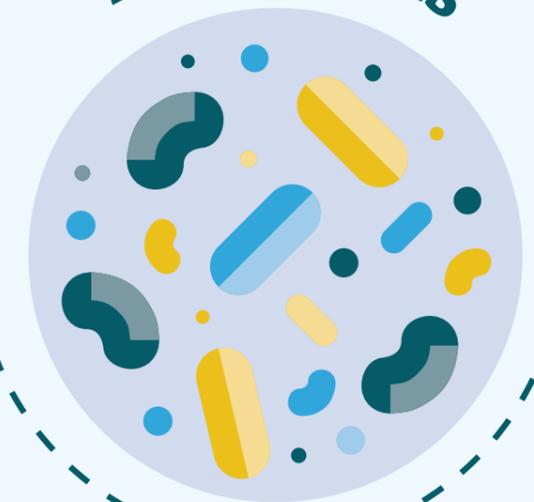
scientific publications



Patients



Pathogens



Populations



MEDICAL
SERVICES

40,252

patient consultations



EDUCATION

509

students





Research & innovation

Scientific progress in the fields of tropical medicine and international health is at the heart of our institute's academic mission. ITM's research activities range from basic to operational research and aim to tackle important health challenges, with a particular focus on low-resource settings and vulnerable populations. Our research policy in 2020–2024 underpins our pursuit of conducting excellent and relevant science, with continued emphasis on equitable partnerships throughout the world. Our research aims to respond to the formidable challenges and opportunities in today's rapidly changing world: researching (re-)emerging infections and outbreaks, designing sustainable health systems and strategies, accelerating disease elimination, and tackling antimicrobial resistance.

In 2022, many of our researchers focused their attention on another pathogen which rapidly spread from Africa to cause a global epidemic: mpox. Strengthening our work on outbreaks and emerging diseases, a new professor was appointed to lead a new unit on Clinical Emerging Infectious Diseases. In the fall, we opened our Clinical Trial Centre to further strengthen our vaccine research activities.

Emerging and re-emerging diseases and outbreaks

Monitoring vectors and vector-borne diseases in Belgium and Nepal



For more than 10 years, our institute has been actively monitoring exotic mosquitoes in Belgium. ITM and the Belgian public health institute Sciensano have successfully counted on the help of citizens to report tiger mosquitoes via the new website MuggenSurveillance.be. The citizen science project, part of the MEMO+ project, resulted in multiple finds on nine locations.

The project was funded by the federal and regional governments through the National Environmental Health Action Plan (NEHAP). The ITM entomologists did not only find tiger mosquitoes but unexpectedly found the Asian bush mosquito as well. Its presence is an indication of the increasing introduction of exotic mosquitoes in Belgium. In Nepal, ITM studies the interaction between climate change, vector-borne diseases and health through the CLIMB project. The region is endemic for several vector-borne diseases.

As part of the DGD programme, ITM will be working closely together with the BP Koirala Institute of Health Sciences (BPKIHS) and the Nepal Health Research Council (NHRC) to collect information on the spread of vectors and pathogens, pilot new surveillance strategies, and formulate measures.

Emerging and re-emerging diseases and outbreaks

Mpox: the epidemic of 2022

In spring 2022, an outbreak of mpox (formerly monkeypox) took the world by surprise, causing more than 85,000 infections worldwide, especially among men who have sex with men. Mpox is caused by the mpox virus, of which two types are known. Clade I has been most frequent and has caused several outbreaks in Central Africa, especially in the DRC. Clade II, on the other hand, occurs mainly in West Africa and causes a less severe disease than clade I. The 2022 global outbreak was caused by clade II and was the first time mpox has spread widely outside of Central and West Africa.

Belgium was particularly affected by the epidemic, with over 780 confirmed cases. Because of its large sexual health clinic, ITM played a vital role in managing the outbreak, while conducting crucial research to better understand the epidemic. In May 2022, the first Belgian mpox patient was diagnosed at ITM. Soon after, researchers at ITM found evidence of asymptomatic infections among individuals visiting ITM's sexual health clinic for STI testing. These findings, published in *Nature Medicine*, were of international importance. In the MPX-ASSESS study (Monkey_Pox ASymptomatic

Shedding – Evaluation by Self Sampling), ITM researchers were able to do an in-depth follow-up of high-risk contacts of mpox patients and show that the transmissible virus is often present before the patient has any symptoms. To curb the spread of the virus and speed up the new vaccination campaign, the institute passed on its expertise in the intradermal vaccination technique to other HIV centres in Belgium, where the vaccinations began. By introducing this technique, they could make 2.5 times more use of their vaccine stock and help more people at risk.

Meanwhile, ITM has also been active in mpox research in the DRC and has investigated several mpox outbreaks in the country. To this end, the institute collaborates closely with its Congolese partner, the National Institute for Biomedical Research, on a large multidisciplinary research project on mpox transmission in rural settings in the DRC.

De Baetselier, I. et al. Retrospective detection of asymptomatic monkeypox virus infections among male sexual health clinic attendees in Belgium, Nature Medicine, 2022



Journal highlights

THE LANCET Infectious Diseases

Field performance of three Ebola rapid diagnostic tests used during the 2018–20 outbreak in the eastern Democratic Republic of the Congo: a retrospective, multicentre observational study

Daniel Mukadi-Bamuleka et al.



npj | vaccines

Three doses of BNT162b2 vaccine confer neutralising antibody capacity against the SARS-CoV-2 Omicron variant

Kevin Ariën et al.



HIV and migration, and five years of PrEP in Belgium

The nexus between HIV and migration is gaining attention. Migration to the EU could increase by up to 44% between now and 2030 due to conflict, poverty and climate change. Researchers from ITM's Sexual and Reproductive Health (SRH) Research Group worked with UNAIDS on a review to assess the level to which HIV affects migrants and what their access to the HIV care continuum is. The findings show that HIV is more prevalent among migrants living in precarious circumstances. They experience multiple barriers in accessing HIV prevention and care: migration and health policies, the health system, the community and on the individual level. To end AIDS by 2030, it is crucial to ensure equitable access to health services, regardless of immigration status, and to implement stigma-reducing interventions.

2022 marked an important highlight for HIV care in Belgium: five years of oral PrEP (pre-exposure prophylaxis), a highly effective pill for reducing the risk of HIV infection. As of 2023, in the framework of an FWO-project, ITM will be among the first to investigate the feasibility of providing injectable PrEP to men who have sex with men in Belgium, which is a highly efficacious novel tool.



Nöstlinger et al. HIV among migrants in precarious circumstances in the EU and European Economic Area, *The Lancet HIV*, 2022

Maternal health in the context of rapid urbanisation in Africa

In many African countries, the number of children being born in health facilities is increasing, but without corresponding improvements in the quality of care. The result is that more maternal deaths are attributable to poor quality of care than to the lack of access to care. Analysing data from recent Demographic Health Surveys, ITM researchers and African partners examined how nearly 20,000 women living in 22 large African cities used maternal care services. Cotonou in Benin and Accra in Ghana scored best: here most women were able to access health care facilities and reported receiving timely care. Most cities, however, showed inconsistent levels of accessibility and quality of care across the maternal continuum of care. The proposed typology of best- and worst-performing cities can provide a starting point for extracting lessons learnt and addressing critical gaps in maternal health in rapidly urbanising contexts.

Wong et al. *A tale of 22 cities: utilisation patterns and content of maternal care in large African cities*, *BMJ Global Health*, 2022



Journal highlights

THE LANCET Regional Health Europe

Doubt at the core: Unspoken vaccine hesitancy among healthcare workers

Leonardo W Heyerdahl et al.



WOMEN AND BIRTH

The impact of COVID-19 on the provision of respectful maternity care: Findings from a global survey of health workers

Anteneh Asefa et al.



Research in numbers

35
new international
projects



397
articles in top
scientific journals

32
clinical trials coordinated by ITM

Disease elimination

Understanding the sexual conversion of the *Plasmodium* parasite to interrupt malaria transmission

Malaria is a mosquito-borne infectious disease caused by the *Plasmodium* parasite that kills more than half a million people every year. Understanding the sexual conversion of the parasite is essential to interrupt transmission. The IMMEDIATEX (host immune and metabolic determinants of sexual conversion in *Plasmodium* parasites) research project hypothesises that immune and metabolite factors that are altered during malaria infection induce sexual conversion in *Plasmodium falciparum* parasites, the deadliest species of *Plasmodium*.

In this project, the researchers will develop a new tool to estimate sexual conversion rates. This project will provide essential knowledge on the factors that affect sexual conversion in the host and potentially inform novel strategies to interrupt transmission. Partner institutions of the study include the Barcelona Institute for Global

Health and Leiden University Medical Centre. The clinical studies will be conducted in Burkina Faso and in Mozambique. The project is funded by the Research Foundation Flanders.



Disease elimination

Improving leprosy prevention strategies

The island of Anjouan in Comoros, an archipelago in the Indian Ocean, has an annual incidence of 7.4 leprosy cases per 10,000 inhabitants – 24 times higher than the global average. As a follow-up to the PEOPLE study, which examined the effect of preventive measures in 110,000 people, ITM, Damien Foundation and Janssen Pharmaceutica started the BE-PEOPLE study in 2022.

In this new study, the combination of bedaquiline with rifampicin is tested as prophylaxis for leprosy among contacts of leprosy patients. Currently, bedaquiline is successfully used to treat multi-drug-resistant tuberculosis. Since the bacilli causing leprosy and tuberculosis are closely related, using bedaquiline to prevent leprosy in patients might prove useful. In a safety trial, 310 persons were randomised to either rifampicin or rifampicin plus bedaquiline, and no major toxicity concerns have emerged. In the next phase, we will test the two prophylactic regimens on a population of 120,000 and compare the leprosy incidence.



The study is led by ITM and Damien Foundation and its partner, the National Leprosy and Tuberculosis Control Programme in the Comoros, and funded by Janssen Pharmaceutica, who also generously provide the study compound bedaquiline. Other partners include Leiden University Medical Center and the Netherlands Heart Institute in Amsterdam.

Braet, S. Investigating drug resistance of *Mycobacterium leprae* in the Comoros: an observational deep-sequencing study. *The Lancet Microbe*, 2022.

Disease elimination

Journal highlights

PLOS PATHOGENS

Four layer multi-omics reveals molecular responses to aneuploidy in *Leishmania*

Bart Cuypers et al.



THE LANCET Regional Health Americas

Relative contribution of low-density and asymptomatic infections to *Plasmodium vivax* transmission in the Amazon: pooled analysis of individual participant data from population-based cross-sectional surveys

Marcelo U Ferreira et al.



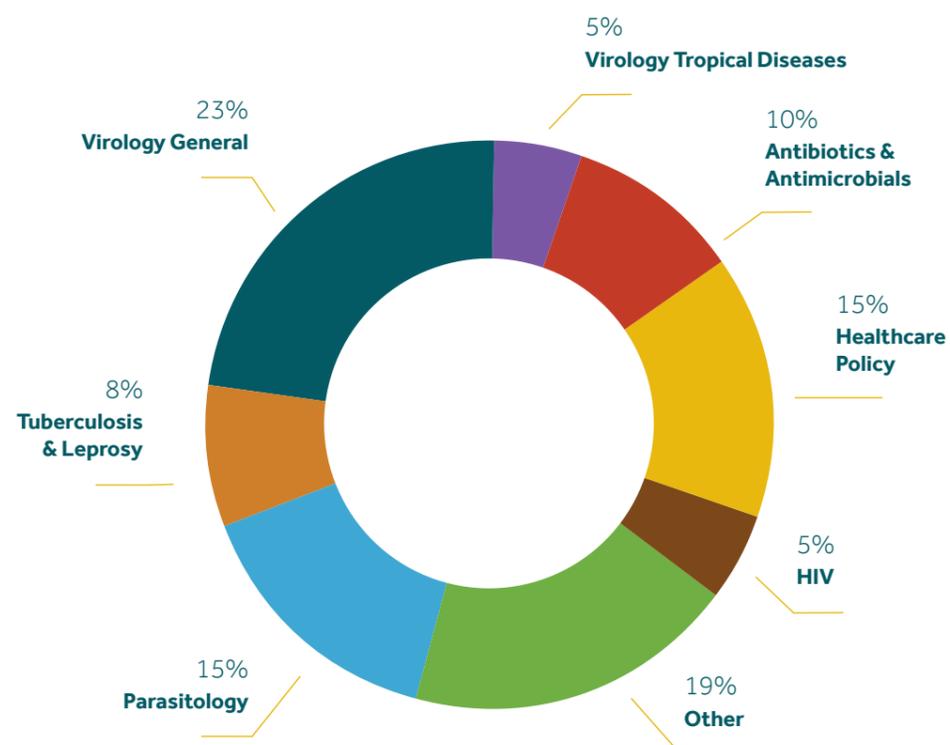


Antimicrobial resistance

Tuning diagnosis of bloodstream infections to low-resource settings

Bloodstream infections (BSI) are an important concern for public health. In low-resource settings (LRS), they account for more deaths than malaria. Starting appropriate antibiotic treatment early is pivotal for patient outcomes. The current standard for detecting BSI is a multi-day process. Private companies have ameliorated and shortened this process by developing blood culture automates and improved formulas for their blood culture bottles. However, these are expensive, difficult to maintain and often not available in LRS. In an FWO-funded project, researchers from ITM's Unit of Tropical Bacteriology examined the composition of commercial blood culture bottles and have evaluated a range of commonly used growth-promoting additives for their effect on bacterial growth. Their findings showed that a very simple blood culture broth supported the growth of the most common pathogens. This information is key to the design of a ready-to-use formulation that can be locally produced and will allow LRS laboratories to implement better and faster diagnosis of BSI.

Research areas of ITM's publications with high scientific impact



Antimicrobial resistance

Evaluating a standardised treatment regimen for patients with multidrug-resistant tuberculosis

Multidrug-resistant TB (MDR-TB) is caused by tuberculosis (TB) bacteria resistant to at least isoniazid and rifampicin, the two most potent TB drugs. In STREAM Stage 2, the first large-scale, multi-country phase III clinical trial of shortened treatment regimens for MDR-TB, a 9-month all oral regimen containing bedaquiline and a 6-month regimen containing injectable and bedaquiline, and both containing a 4th generation fluoroquinolone, were found to be safe and effective. Primary outcome results provide high-quality evidence that support the current WHO recommendation of 9-month, all oral bedaquiline-containing regimens for drug-resistant TB.

The trial, sponsored by Vital Strategies and implemented between 2016-2022, enrolled and followed up 588 participants in 13 sites across Ethiopia, Georgia, India, Moldova, Mongolia, South Africa, and Uganda. As collaborator and reference laboratory, ITM's Unit of Mycobacteriology was responsible for training and monitoring of the site microbiology laboratories, and for the central bacteriological analyses to determine the



resistance patterns of the *M. tuberculosis* isolates, and to ascertain true relapse or failure.

STREAM Stage 2 was jointly funded by the United States Agency for International Development and Janssen Research & Development, LLC. Additional funding for STREAM was provided by the Medical Research Council and the UK Department for International Development under the MRC/DFID Concordat agreement and is also part of the EDCTP2 programme supported by the European Union.

Goodall et al. Evaluation of two short, standardised regimens for the treatment of rifampicin-resistant tuberculosis (STREAM stage 2): an open-label, multicentre, randomised, non-inferiority trial, The Lancet, 2022

Antimicrobial resistance

Journal highlights

nature communications

Bacteriophage-antibiotic combination therapy against extensively drug-resistant *Pseudomonas aeruginosa* infection to allow liver transplantation in a toddler

Brieuc Van Nieuwenhuysse et al.



THE LANCET

Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis

Christopher J L Murray et al.





Education

More than 500 students and PhD researchers further their education at ITM every year, in expert short courses and postgraduate certificate programmes, advanced master's courses and doctoral programmes. In January 2022, the first complete cohort of students began our Master of Science in Global One Health: diseases at the human-animal interface. This two-year blended learning course is designed for those who want to work on disease control strategies, ecosystem sustainability, food security and rural development, and is jointly organised with the University of Pretoria.

In 2022, we also started the major restructuring of the Postgraduate Certificate in Tropical Medicine and International Health and the Postgraduate Certificate in Tropical Medicine for Bachelors in Nursing and Midwifery. The new postgraduate certificate programme will start in September 2023 and will focus on the health of vulnerable groups across the globe. The components of the programme can be combined in different ways to fit individual career aspirations.

Finally, in November 2022, ITM's Education Office participated in a system-wide analysis on education internationalisation in Flemish higher education institutions, organised by the Accreditation Organisation of the Netherlands and Flanders (NVAO).

Global citizenship education for secondary school students

In collaboration with the Flemish broadcaster VRT NWS and other partners, ITM launched two new EDUboxes, educational packages for secondary school pupils, in 2022.

The first one focuses on science for sustainable relationships between humans, animals and the planet. Climate change, urbanisation, globalisation and deforestation are throwing the earth out of balance. Exotic mosquitoes and fungi are also suddenly appearing in our regions. What impact do these phenomena have on the health of humans, animals and the planet?

The second EDUbox introduces students to different health systems around the world; they learn that every person has the right to good health, how governments ensure this, that inequalities



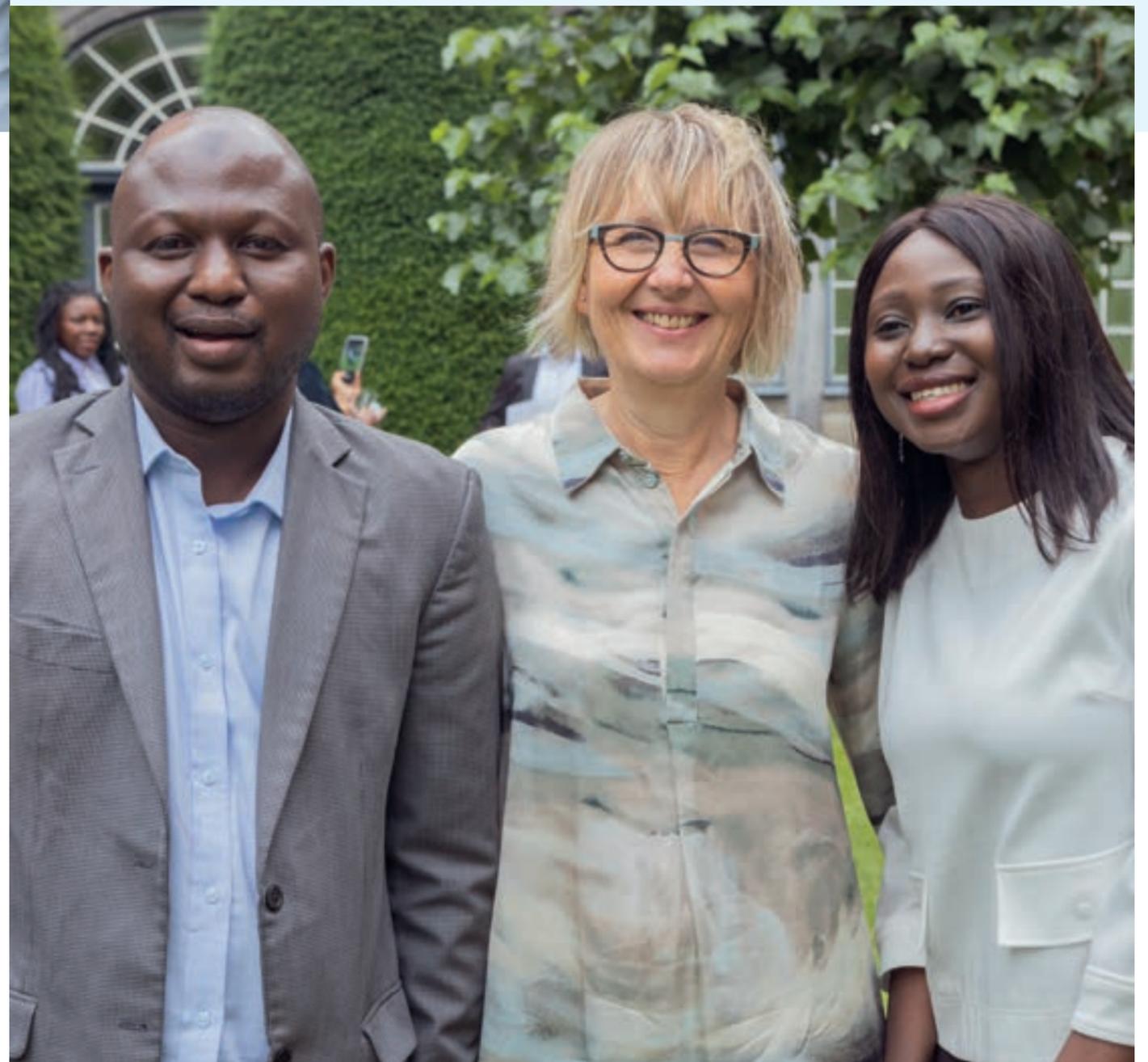
persist and how epidemics can put pressure on the entire system.

By means of educational packages that can be used by secondary school teachers, ITM is increasing youth awareness of the institute's and its partners' research topics, encouraging them to think critically about the interconnections between global and local challenges.

Marjan Pirard awarded Prof Jozef Vandepitte Prize of 2021

In 2021, the Prof Jozef Vandepitte Prize of the association of the Development Aid Doctors & Pharmacists Alumni of KU Leuven was awarded to Dr Marjan Pirard, Education Coordinator of ITM's Department of Public Health. The prize is awarded every two years to stimulate sustainable educational projects in low-income countries. Dr Pirard received the award for her key role in ITM's MSc in Public Health (MPH).

Every year, about 40 students enrol in the MPH programme, of which most come from low- and middle-income countries. Since she started heading the Education Unit of the Department of Public Health in 2012, Marjan has supported students and ensured that the programme remains of high quality and relevant in an ever-changing world. "The prize and the heart-warming reactions I received from ITM alumni and staff inspire me in my future work. It is also a recognition of the collective effort of colleagues in our MPH programme," Marjan said.

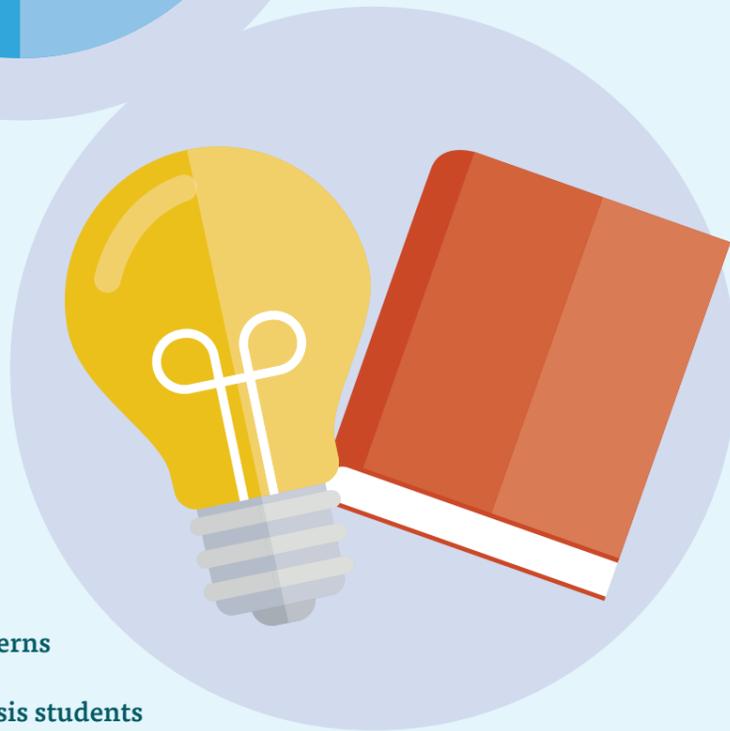


Student body

93 postgraduates
74 master's



158 Belgian students
94 EU-students
257 non-EU students



171 short courses
102 PhDs
57 interns
12 master's thesis students

Four ITM alumni win the Province of Antwerp Prize for Global Research

On 14 September, the annual award ceremony of the Prize for Global Research took place. The prize is awarded yearly by the Province of Antwerp to Master after Master students of the University of Antwerp, the Institute of Development Policy and ITM. Through this award, the provincial government wants to stimulate promising graduation

projects on global themes relating to resource-constrained settings.

Four former master's students of ITM, graduates of the MSc in Public Health, MSc in Tropical Medicine and MSc in Tropical Animal Health, were among the 2022 winners. The prize serves as an important recognition of their hard work and a stimulus to pursue their fields of expertise. The four winning ITM graduates were Claire Julie Akwongo (Uganda), Joseph Bahati Djoki (DRC), Amber Hadermann (Belgium) and Calvin Tonga (Cameroon).



International cooperation

2022 marks the first year of ITM's new multiannual programme 'Connecting the Dots – Higher Education and Science for a Healthier World', supported by the Belgian Directorate-General for Development Cooperation and Humanitarian Aid (DGD). From 2022 to 2026, ITM and its 24 partner institutions in 12 countries will work to increase the quality of, and access to health care worldwide. The main focus of the ITM programme is on institutional capacity strengthening and collaboration, with special attention to training and empowerment of health professionals.

The programme encompasses twelve countries and includes three global programmes. Within our twelve country programmes, ITM and its partners strive for better health for local populations through platform development (knowledge and technology), education and research projects and building synergies. More importantly, we ensure science and education with a high societal relevance by including a component in each intervention to 'Get Research into Policy and Practice' (GRIPP).

Through funding from the Flemish Department of Foreign Affairs (FDFA), ITM continues to work on institutional capacity strengthening of the Instituto Nacional de Saúde, Mozambique (INS) to ensure national-wide health system strengthening. A new collaboration with provincial health services in Tete province started in 2022, and will focus on decentralised health services, improving the planning capacities and evidence-based decision making of our partners.



Legend

- Institutional capacity building supported by DGD
- Institutional capacity building supported by Flanders
- Alliance for Education in International Public Health and Tropical Medicine



Scan the QR-code for the interactive map.

For a full list of our partner organisations, please refer to page 46.

Connecting the Dots programme with DGD

Joint Strategic Framework

2022 also marked the first year of the new Joint Strategic Framework. ITM joined forces with the umbrella organisations for higher education from Flanders and francophone Belgium, VLIR-UOS and ARES, in a new thematic Joint Strategic Framework on Higher Education and Science for Sustainable Development (HES4SD).

The thematic focus enables the framework partners to transcend geographical boundaries and focus on gathering academic expertise, the creation of thematic networks and joint learning on relevant topics for higher education and science (diversity, scholarships, decolonisation, world citizenship education and GRIPP).



Connecting the Dots programme with DGD

Three global programmes

Our three global programmes focus on Education & Scholarships, Policy Support, and Synergies. Through our Education and Scholarship programme, we encourage staff and student mobility and lifelong learning. Our Policy Support directs itself at the Belgian federal government mainly, but also encompasses networks to generate learning and exchange within the global health sector. Lastly, our Synergy programme creates conditions for collaboration between our various country programmes, enables researchers and (partner) institutions to participate in international research projects and offers network



opportunities on some of the most pressing issues of our time, including urbanisation, climate change and health.

Getting research into policy and practice in Ethiopia and beyond

In June 2022, the World Health Organization released its revised guidelines for the treatment of people co-infected with visceral leishmaniasis (VL) and HIV. People living with HIV are 100 to 2,300 times more likely to develop VL, a neglected tropical disease, which is transmitted by the sandfly. If left untreated, it is usually fatal. The efficacy of the new combined regimen increased to 88% from the 55% of the current standard treatment. The new regimen also has less side effects and the treatment

duration is shorter. The new guidelines are based on the results of two studies conducted by the Drugs for Neglected Diseases initiative, Médecins Sans Frontières and their partners in Ethiopia and India. One of these partners was the University of Gondar, an ITM partner since 2014. The aim of the partnership is to enhance the research capacity and evidence-based medical practice on tropical and poverty-related diseases in Ethiopia, by collaborating on research, training, monitoring, and provisioning state-of-the-art equipment and infrastructure. The new guidelines, which will also be integrated in national guidelines, will enable practitioners to improve their treatment of patients and thus enhance the health of the Ethiopian population.



Connecting the Dots programme with DGD

New countries in the DGD programme: Nepal and Rwanda

Nepal and Rwanda are two new partner countries within the fifth DGD programme. In Rwanda the capacity strengthening programme focuses on the Rwanda Biomedical Center and the University of Rwanda. The programme aims to strengthen

research and services in the fields of tuberculosis, malaria, helminthic infections, proper use of antibiotics, vaccine development and roll-out.

In Nepal, the collaborating institutions are the National Health Research Council and BP Koirala Institute of Health Sciences. The partnership aims to improve evidence-based vector-borne disease management, while considering climate impact. Furthermore, the focus is on sustainable elimination of visceral leishmaniasis as a public health problem in the country.



Building a country-wide AMR surveillance network in Benin

As part of the fifth DGD framework agreement in Benin, ITM's Unit of Tropical Bacteriology, together with the local partner Laboratoire de Référence des Mycobactéries (LRM), plan to install a country-wide antimicrobial resistance (AMR) surveillance network in Benin. In 2022, the team, consisting of colleagues from ITM and the University Hospital in Cotonou (CNHU), undertook a four-week tour of the seven AMR surveillance network hospitals across the country. After training the local trainers of LRM and CNHU, they trained 100 health workers on the background of AMR, its global and local implications and contributing factors, the need for and diagnostic value of blood cultures, and different procedures for blood culture sampling.

The project's goal is to have the hospitals from the surveillance network contribute to the WHO Global Antimicrobial Resistance and Use Surveillance

System (GLASS) and to have them serve as training centres for the containment of AMR in their districts and in francophone West Africa (Benin, Burkina Faso, Guinea). This will ensure best quality laboratory services and patient care for those with severe bacterial infections in the more rural and remote areas.

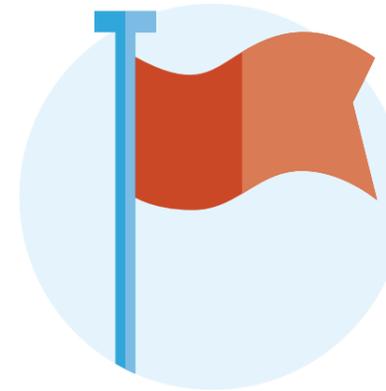


Identifying biomarkers for arboviruses to develop new diagnostic tools in Peru

Francesca Falconi is a Peruvian scientist and a 2022 PhD graduate of ITM. Her research focused on arboviruses, which are a common cause of acute febrile illnesses in Latin America, with limited diagnostic options. She aimed to identify specific biomarkers for different arboviruses to develop new diagnostic tools that could detect multiple viruses simultaneously. Falconi conducted fieldwork throughout Peru to collect blood samples and establish a network of collection sites.

Her PhD was made possible by the fourth framework agreement between ITM and DGD. Her current work is a collaboration between ITM and its Peruvian partner, the Instituto de Medicina Tropical Alexander von Humboldt. The project aims to improve disease surveillance in Peru. This includes the development of a highly sensitive real-time PCR machine for arbovirus testing in low-resource settings and metagenomic sequencing to identify any other viruses causing illness.

International cooperation in numbers



26
institutional partners



19
partner countries

ITM and Guinean partner train hundreds of Guinean health workers

Following the devastating impact of the Ebola outbreak of 2014, the Guinean government recruited and posted thousands of new health workers in rural areas as part of the health system recovery and resilience plan. Training was needed for these new recruits to reinforce the country's health system.

ITM and the Maferinyah National Training and Research Center in Rural Health developed and provided online courses on primary health care, management of sexual and reproductive health, and

research methods to more than 500 Guinean health professionals. This was supported by the Belgian Development Agency (Enabel) and ITM's fourth framework agreement with the DGD. Building on the success of the past years, the elearning activities have continued under the fifth DGD framework agreement in 2022, with trainings in Primary Health Care and Research Methods. A third course on Sexual and Reproductive Health Services is scheduled for 2023.

Millimouno, Tamba M. Evaluation of Three Blended Learning Courses to Strengthen Health Professionals' Capacity in Primary Health Care, Management of Sexual and Reproductive Health Services and Research Methods in Guinea. Frontiers in Digital Health, 2022



Events



Opening of Clinical Trial Centre

On 27 September, Johan Hanssens, Secretary-General of EWI, opened ITM's Clinical Trial Centre (CTC), a brand-new research complex. In the CTC, the institute tests out new vaccines and treatments against infectious diseases before they can be used. Following the opening in 2022, ITM started two trials; one on a new vaccine against COVID-19 (Aesir trial), and another on a shortened administration schedule for administering the rabies vaccine (Single-R trial).

ACL-3 lab: a high-security insectary

In November 2022, ITM opened its first high-security insectary, financed by EWI. An Arthropod Containment Level-3 (ACL-3) lab allows researchers to investigate interactions between infectious disease agents (Zika, dengue, malaria, sleeping sickness and leishmaniasis) and insect vectors such as tiger and malaria mosquitoes, tsetse and sand flies. This facility will allow researchers to better understand the relationship between the insects and pathogens and to expand their expertise on the impact of climate change on infectious diseases.



Fundraising

ITM launches Marleen Boelaert Study Fund

Via the new Study Fund, we offer promising students from low- and middle-income countries the chance to develop their ambitions in tropical medicine and international public health. The Fund is named after the late Professor Marleen Boelaert, one of the driving forces behind ITM and a global expert on neglected diseases.

ITM Colloquium

On 6-7 December, our 63rd annual Colloquium took place at ITM, with the theme "Global exchange on COVID-19: takeaways from a pandemic". The event brought together more than 400 participants from over 30 countries, online and in person. The sessions focused on the heterogeneity of the pandemic in different parts of the world, as some countries suffered from very deadly epidemics, while others contained it well. Participants also zoomed in on the effects of different containment policies, the access and implementation of diagnostics, therapy and vaccines, and the direct and indirect effects of COVID-19 on the health systems and societies.



Fundraising

Antwerp Diner: support for HIV research

In October 2022, we received a check for €32,000 from Antwerp Diner! The amount was raised earlier this year during the 20th edition of Antwerp Diner, an annual benefit gala organised to support HIV/AIDS research and prevention. Our researchers will use this donation to better map pre-exposure prophylaxis (PrEP) use and care for PrEP users in our country, in order to advance the long-term understanding and effectiveness of PrEP in Belgium.



The King and Queen of Belgium pay a visit to ITM partner in DRC

On 9 June, the King and the Queen of the Belgians visited the National Institute for Biomedical Research (INRB), one of ITM's major partners in the DRC. The visit was organised by the Embassy of Belgium in Kinshasa and the local ITM office. They met with INRB Director Professor Muyembe, and listened to the presentations of scientists working on ITM-funded programmes. These included the microbiological quality of portable hand washing stations and antibiotic resistance, parasitological testing for the diagnosis of sleeping sickness, and the control of emerging epidemics - testimony of a fellow of the Marleen Boelaert Fellowship Programme.



Learn how you can support ITM and our activities!

Staff community

Arrivals and departures

2022 marked the appointments of two new professors.
We wish them great success at ITM.



Bernadette Hensen joined ITM's Sexual and Reproductive Health Group in the Department of Public Health in September 2022. Her research will focus on sexual health among adolescents and young people, men, and other affected populations, and on the design, implementation, and evaluation of strategies to improve access to sexual and reproductive health services, especially for HIV prevention.



Laurens Liesenborghs became Head of the new Unit of Clinical Emerging Infectious Diseases at the Department of Clinical Sciences and a member of ITM's multidisciplinary Outbreak Research Team. His main research topics include outbreak research, mpox, COVID-19 and viral hemorrhagic fevers, with ongoing projects in Belgium, the DRC, Burundi, Guinea, Ghana and Ethiopia.

We also send a warm appreciation to our retiring professor – Maria Laga. She started at ITM 38 years ago, at the height of the HIV epidemic, and dedicated her career to the people affected by the disease.

Marie Laga worked as a researcher at ITM and was Head of the Unit of Sexual Health including HIV. She is recognised as a leading expert in HIV and advocate of HIV prevention worldwide. She joined ITM



in 1984 to work on sexually transmitted infections and HIV, first in Kenya and the DRC and later in Côte d'Ivoire. Marie and her team contributed significantly to HIV prevention science in the areas of sexual transmission and its cofactors, prevention programmes for vulnerable groups, evaluation of female-controlled methods and linkages of sexual and reproductive health.

Two new heads of department begin

In 2022, Kevin Ariën became Head of the Department of Biomedical Sciences, and Johan van Griensven became the Head of the Department of Clinical Sciences after having been interim head of the department for a year. They shared what has kept them busy during their first year.



Kevin Ariën

"I've been with ITM since 2009, so I've become quite familiar with the Department of Biomedical Sciences and how ITM functions as an organisation. As the new department head, I am eager to set things in motion! In 2022, we have delineated important contours for the future scientific direction of our department with a **primary focus on pathogen-vector-host-environment interactions and diagnostics**. A vision that was endorsed by ITM's Scientific Advisory Committee. For 2023 and beyond, the realisation of **new research infrastructure** is a major ambition of mine. To remain competitive and relevant in our research domains and to retain and attract highly skilled research talent, it is crucial to have access to state-of-the-art laboratory infrastructure (incl. BSL-3), equipment and technologies. This is of key impor-

ance for the whole of ITM. Which ties in with my third ambition, to **bring together the expertise of the entire ITM**, our three departments, and to make the best possible use of it. Together with Marianne van der Sande from our Department of Public Health and Johan van Griensven from the Department of Clinical Sciences, a more integrated vision both within and between the departments and the rest of ITM will help us achieve even more."



Johan van Griensven

"At ITM we know the added value of cooperation and how to combine the strengths from the different areas we work on. That is why I aim to connect the clinic, the laboratories and all other parts of the department and ITM even more. This to keep and further **strengthen ITM as one of the leading institutes of tropical medicine at the global level**. My predecessor, Lut Lynen, has already set a clear direction for our department, but the work is never done. We have to keep evolving in order to remain relevant. Daring to engage in self-reflection is important, detecting and solving bottlenecks. We also have **several new professors** and units, and making these successful is an important mission.

I strive to keep our department an **inspiring and motivating environment** to work in, one that is ready for the future. That is my main goal. **Interdepartmental cooperation** is another objective. Keep evolving as a whole, with a good balance between looking ahead and the current situation."



Medical services

2022 brought a new outbreak that had a major impact on ITM's medical services: mpox (formerly monkeypox). Given ITM's ongoing research on mpox in the DRC and its experience with outbreak response, our experts in tropical medicine and sexually transmitted infections confirmed the first mpox patient in Belgium in May and rapidly developed an in-house PCR test. ITM researchers were among the first to publish the sequence of the virus and to demonstrate that an mpox patient does not always present with symptoms and that the virus can be cultured from samples of an mpox patient before the appearance of symptoms. ITM's laboratory was designated as technical reference centre for mpox in Belgium and our polyclinic was the first in administering vaccinations to patients at risk.

The polyclinic, the side of ITM the Belgian public knows best, is part of our Department of Clinical Sciences. It is ITM's ambition to provide world-class medical care and laboratory services in the domain of tropical infectious diseases. By conducting clinical and laboratory research, the medical services are nationally and internationally recognised for their expertise and are uniquely placed to advise national and international health authorities and organisations.

Manufacturing in vitro diagnostic tests for neglected tropical diseases



For decades, ITM has been housing a tiny 'factory' producing millions of tests every year for the screening and diagnosis of neglected tropical diseases (NTDs): human African trypanosomiasis (HAT) and visceral leishmaniasis, which affect humans, and surra, which occurs in animals like horses and dogs. Early detection is key to combat these diseases. The CATT test (short for Card Agglutination Trypanosomiasis Test), developed by ITM at the end

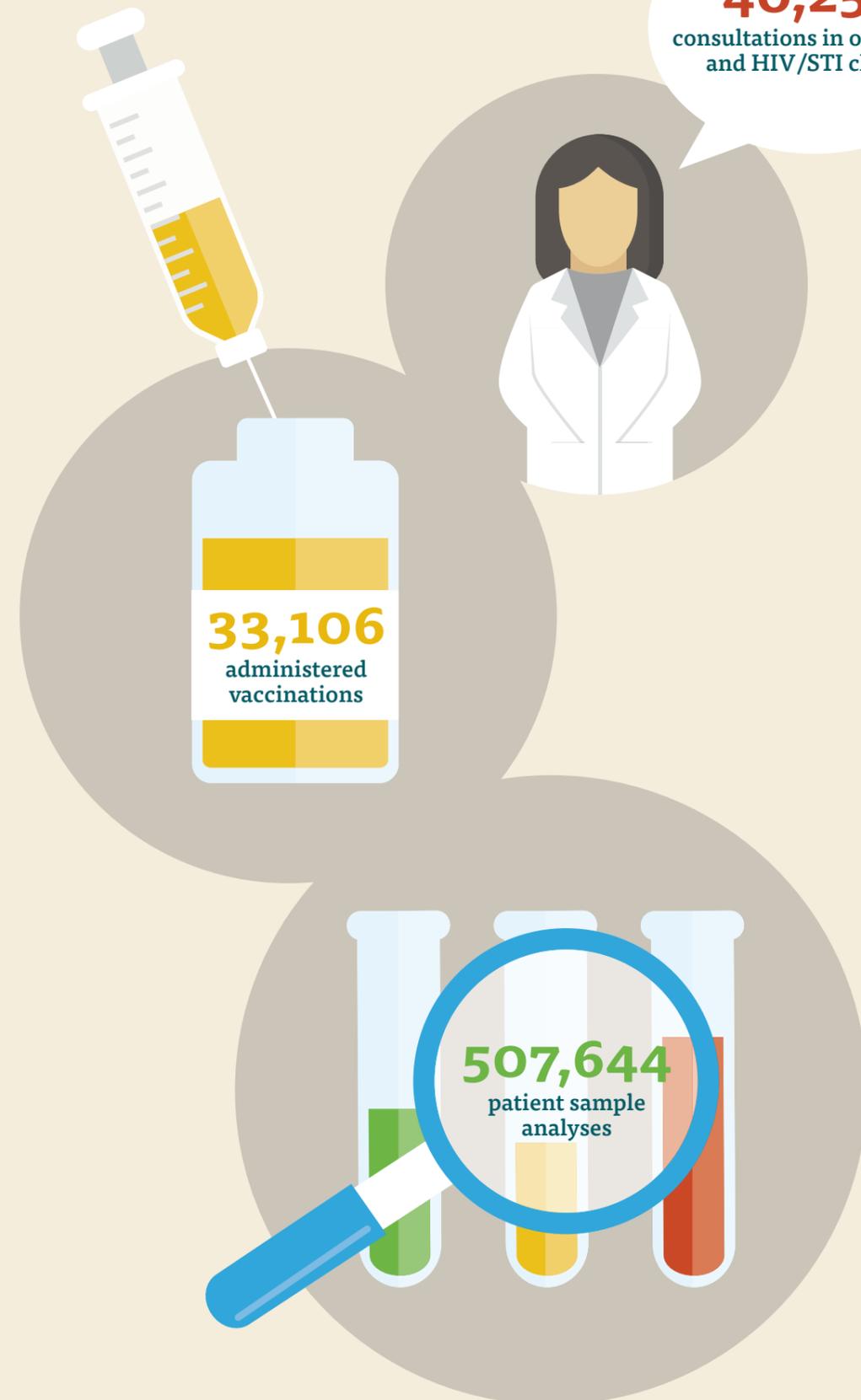
of the 1970s, grew to become one of the most used field tests for detecting HAT or sleeping sickness on a large scale in West and Central Africa. To this day, ITM's Unit of Applied Technology and Production develops it in-house. Annually, the portfolio now also contains 100,000 DAT/VL tests, used for the diagnosis of visceral leishmaniasis, and 120,000 surra tests, which are sold to veterinary hospitals around the world.

In 2022, the unit concentrated on improving and facilitating some important processes, such as client administration, production planning and stock management. To this end, they put in place a cloud-based ERP (Enterprise Resource Planning)/MRP (Manufacturing Resource Planning) software, suited for small manufacturers.

Preparations also began for the setting up of a biobank, with human and non-human biological materials used for research. This will also be accessible to external applicants such as researchers from academic and non-academic origins or from commercial and non-profit organisations.

A close-up of our medical services

40,252
consultations in our travel
and HIV/STI clinics





Our figures

Guaranteeing high-quality analyses in our 13 reference laboratories

ITM laboratories are highly regarded as scientific centres of reference on tropical diseases, both nationally and internationally. They also work to improve services for patient care locally. In our high-security biosafety level 3+ (BSL-3+) labs we

have the infrastructure to safely research dangerous pathogens such as tuberculosis and the Ebola virus.

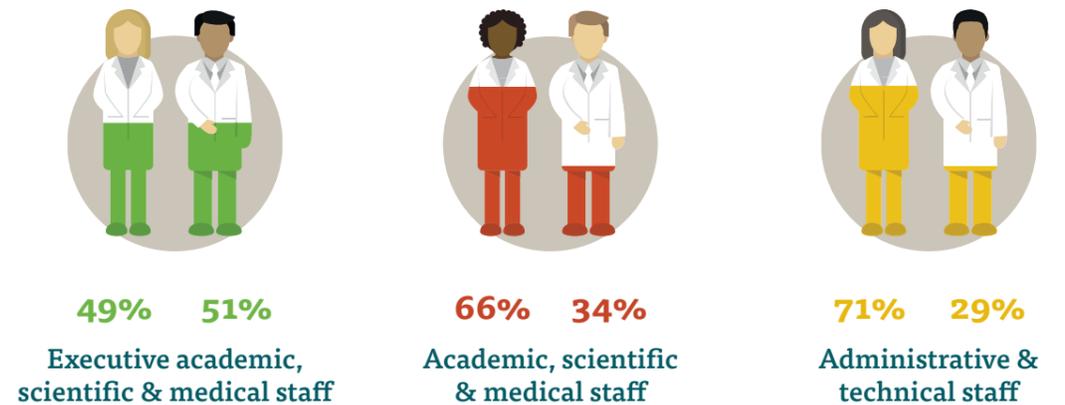
Several of our research and diagnostic laboratories are recognised as reference laboratories by national governments and various international organisations such as the World Health Organization. As such, ITM's laboratories are of the highest quality standards and our scientists are often called upon as expert advisors locally and worldwide.

- 01. National Reference Centre for Arboviruses**
- 02. National Reference Centre for Sexually Transmitted Diseases**
(Treponema pallidum, Chlamydia trachomatis, Neisseria gonorrhoeae, Mycoplasma genitalium)
- 03. National Reference Centre for Rickettsia and Anaplasma**
(consortium with Koningin Astrid Militair Hospitaal - Queen Astrid Military Hospital)
- 04. National Reference Centre for Coxiella burnetii and Bartonella**
(consortium with UCL Saint-Luc et Sciensano)
- 05. National AIDS Reference Laboratory**
- 06. WHO Testing Laboratory**
- 07. WHO Collaborating Centre for HIV/AIDS Diagnostics and Laboratory Support**
- 08. National Reference Laboratory for Infectious and Tropical Diseases**
- 09. BCCM/ITM Mycobacteria Collection**
- 10. WHO TB Supranational Reference Laboratory - Coordinating Center**
- 11. WOAHA Reference Laboratory for Surra**
- 12. WHO Collaborating Centre for Research and Training in Human African Trypanosomiasis Diagnostics**
- 13. National Reference Laboratory for Parasites**
(Trichinella, Echinococcus and Anisakis)

	2022	2021	2020
ITM in the world			
Institutional partners	26	19	19
Reference laboratories	13	13	14
Diagnostic tests sent across the world*	1,198,605	2,215,841	2,098,004
Staff at ITM	492	488	447
Academic, scientific and medical staff	202	194	166
Administrative and technical staff	290	294	281
Male/female (M/F) ratio (%)	32/68	35/65	33/67
M/F ratio executive academic, scientific and medical staff (%)	51/49	54/46	57/43
M/F ratio academic, scientific and medical staff (%)	34/66	36/64	33/67
M/F ratio administrative and technical staff (%)	29/71	29/71	29/71

* Due to the presence of a new Scientific Head in the Unit of Applied Technology & Production, the way of calculating the numbers changed in 2021.

Our staff



Our staff come from 37 countries.

	2022	2021	2020
Research			
Scientific excellence and impact			
Papers in scientific journals	397	422	387
New international research projects	35	41	61
International research consortia led by ITM	11	7	9
Innovative research projects running with the support of Flanders	20	23	20
Clinical trials coordinated by ITM**	32 (18+6+8)	29 (16+6+7)	12
Number of ongoing competitively awarded research projects, incl. FWO, H2020, Horizon Europe, NIH,... (cumulative)	54	51	59
Number of publicly accessible policy documents, guidelines and recommendations based on ITM research and expertise	20	17	14
Number of ongoing (cumulative) ITM FWO aspirants and mandates, MSCA, HSFP, EMBO or ERC grants, seal of excellence,...	21	23	20

** From 2021 onwards we combine the clinical, interventional and observational studies in our reporting.



	2022	2021	2020
Education			
Master's			
Master's students	74	67	62
MSc in Public Health	35	43	43
MSc in Tropical Medicine	15	18	
MSc in Tropical Animal Health	24	19	19
Nationalities			
Belgian	4	2	4
Other EU countries	4	1	2
Non-EU countries	66	64	56
Postgraduate			
Postgraduate students	93	108	45
Postgraduate Tropical Medicine for Bachelors in Nursing and Midwifery	61	75	0
Postgraduate Certificate in Tropical Medicine and International Health	32	33	45
Nationalities			
Belgian	62	75	36
Other EU countries	30	32	7
Non-EU countries	1	1	2
Short courses			
Short course students	171	217	121
Nationalities			
Belgian	25	44	17
Other EU countries	23	15	11
Non-EU countries	123	158	93
PhD students			
Ongoing PhD's at ITM (31/12/2022)	102	101	80
Nationalities			
Belgian	23	21	18
Other EU countries	17	20	9
Non-EU countries	62	60	53
PhD dissertations in 2022	13	5	16
Interns and master's thesis students			
Interns	57	50	109
Nationalities			
Belgian	39	38	37
Other EU countries	14	7	14
Non-EU countries	4	5	58
Master's thesis students*	12	16	10
Nationalities			
Belgian	5	9	5
Other EU countries	6	2	3
Non-EU countries	1	5	2

* From 2021 onwards we combine the clinical, interventional and observational studies in our reporting.

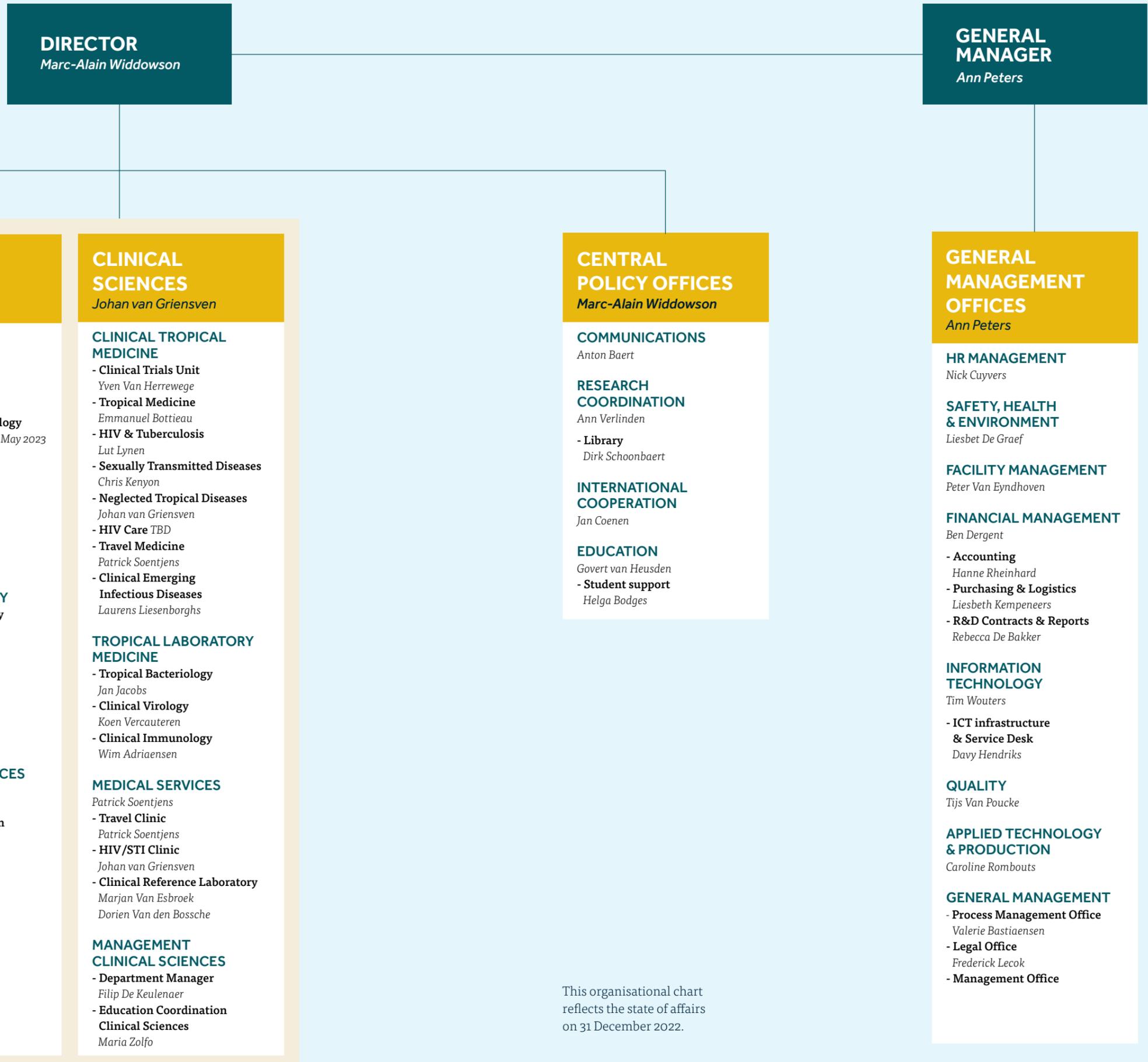
	2022	2021	2020
Infectious Diseases ward at UZA			
Patients admitted in the Infectious Diseases Ward	336	348	486, predominantly COVID-19
Acquired HIV infections			
HIV reference centre			
Patients in follow-up	3,174	3,113	3,008
Average age	49	49	48
Nationality (%)	Europe & North America 67% Asia 4% Africa 21% Latin America 6% Unknown 2%	Europe & North America 67% Asia 4% Africa 22% Latin America 5% Unknown 2%	Europe & North America 67% Asia 4% Africa 22% Latin America 5% Unknown 2%
Gender ratio (M/F %)	75/25	75/25	75/25
Number of newly registered HIV patients	169	127	148
Helpcenter - Low-threshold centre			
Unique visitors	1,997	1,760	1,496
Priority target groups	MSM: 593 (32%) Migrants (outside Europe): 747 (40%) Commercial sex workers (CSW): 35 (2%) Clients of CSW: 108 (6%) High risk: IVDU (intravenous drug users): 11 (0,6%) Persons with occasional sexual contacts: 1,670 (90%) Group sex: 969 (52%)	MSM: 637 Migrants (outside Europe): 352 Commercial sex workers (CSW): 30 Clients of CSW: 92 High risk: IVDU (intravenous drug users), Persons with occasional sexual contacts, Group sex: 1614	MSM: 401 Migrants (outside Europe): 607 Commercial sex workers (CSW): 23 Clients of CSW: 93 IVDU (intravenous drug users): 9 Persons with occasional sexual contacts: 1,216 Group sex: 764
HIV tests performed	2,229	1,063	381
Newly diagnosed HIV infections	10	11	6
Swab2Know programme			
Collected oral fluid tests	207	369	417
Newly diagnosed HIV infections. 2021 onwards: reactive samples	1	5	2

	2022	2021	2020
Medical services			
Consultations			
Consultations	40,252	33,029	28,864
HIV (%)	17%	20%	14%
PrEP (%)	12%	13%	9%
STD (%)	7%	11%	10%
Pre-travel (%)	40%	34%	21%
Helpcenter (%)	5%	6%	7%
Post-travel, pediatrics (%)	9%	10%	13%
Nurses	9%	7%	
COVID-19 (%)			17%
By phone (%)			9%
Patient samples			
Analyses*	507,644 analyses for 37,865 patient contacts	459,612 analyses for 38,627 patient contacts	472,470 analyses for 41,093 patient contacts
Analyses as National Reference Centre for the Diagnosis of Infectious and Tropical Diseases	98,107	86,263	78,039
Newly diagnosed HIV infections in the National HIV/STD Reference Laboratory	355	270	272
Travel medicine			
Visitors and patients for travel advice and vaccinations	16,304	11,008	6,159
Administered vaccinations	33,106	17,098	15,031
Top 5 diseases for which visitors got vaccinated (%)	1. Yellow fever 24% 2. Hepatitis A 19% 3. Polio 14% 4. Diphtheria 7% 5. Tetanus 7%	1. Yellow fever 26% 2. Hepatitis A 17% 3. Polio 12% 4. Diphtheria 10% 5. Tetanus 10%	1. Yellow fever 30% 2. Hepatitis A 22% 3. Tetanus & diphtheria 17% 4. Polio & pertussis 14% 5. Rabies 7%
People returning from the South who came to our clinic with medical symptoms**	3,311	3,670	3,694
The most common diseases	1. Diarrhoea (acute/chronic): 10.5% 2. Malaria (<i>P. falciparum</i>): 7.7% 3. Mpox: 7.5% 4. Dengue, uncomplicated: 3.5% 5. Scabies: 3.3%	1. Malaria: 13.5% 2. Diarrhea (acute/chronic): 11.7% 3. Schistosomiasis: 10.9% 4. Skin/soft tissue infection: 6.9% 5. Scabies: 6.5% 6. NB: COVID-19: 2.6%	1. COVID-19: 21.57% 2. Diarrhea (acute/chronic): 10.78% 3. Schistosomiasis: 9.8% 4. Malaria: 4.9% 5. Skin/soft tissue infection: 4.9%
Page views on Wanda - Travel in good health (website)	743,334	263,514	487,136
New users in Wanda - Travel in good health (app)	15,576	9,436	19,856
User engagement in Wanda - Travel in good health (app)	130,216	92,981	120,606

* In 2021, we refined our counting methods which give more accurate results.

** Figures in past years show the number of consultations. In 2022 they show the unique number of visitors. Therefore, the figure is lower, while consultations are around 4,000.

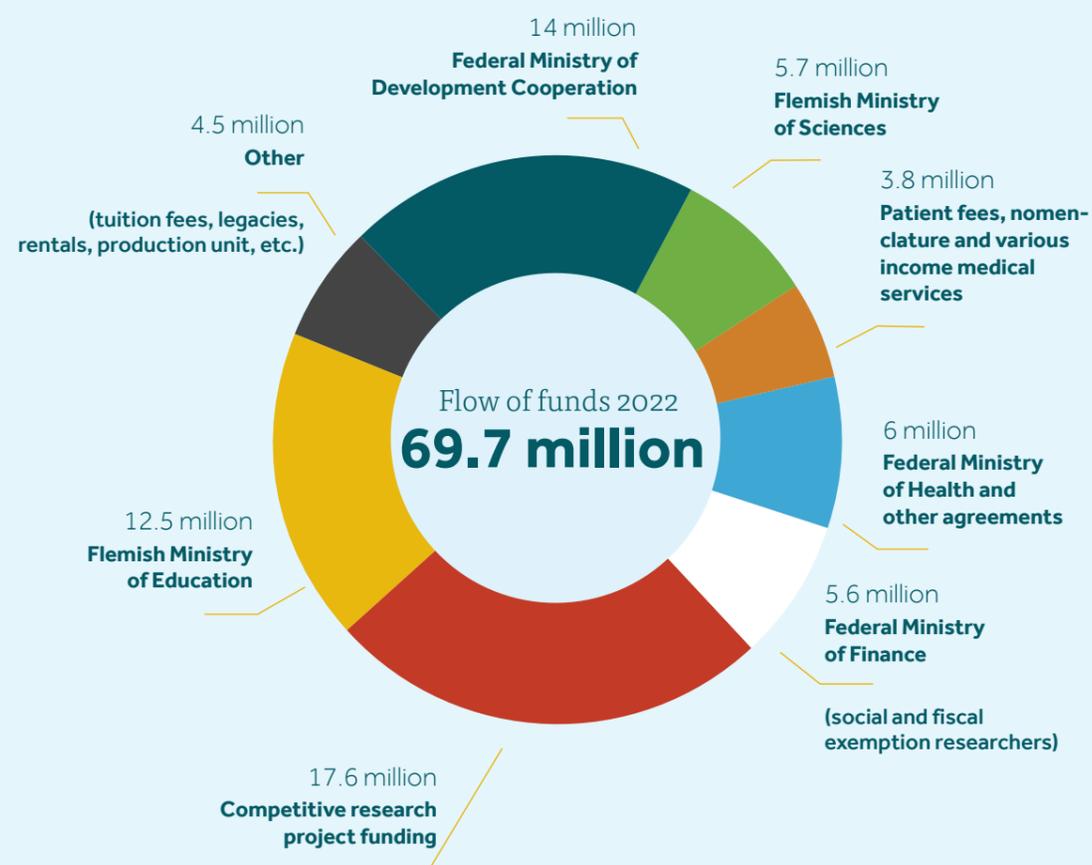
Organisational chart



This organisational chart reflects the state of affairs on 31 December 2022.

Our financials

All financial figures are in euro.



Total annual operating income: €63,554,644

Total annual operating expenditure: €63,220,911

The difference between the total income in the profit & loss account and in our flow of funds is due to advances received for (multiannual) projects and to transfers to partners not being included in the profit & loss account. The flow of funds diagram gives an indication of receipts from the different revenues, financing and funding channels.



Please find the signed auditors letter confirming these results online.

Profit and loss account

	2022	2021	2020
Operating income (+)	63,554,644	62,513,794	52,331,241
Turnover	18,195,378	15,778,176	16,328,828
Work and services in progress (additions +, withdrawals -)	8,946,607	16,996,229	5,828,446
Member fees, funds, legacies and subsidies	24,122,056	22,360,649	23,187,787
Other operating income	12,290,603	7,378,740	6,986,180
Operating expenses (-)	63,220,911	60,529,527	50,317,409
(Cost of) goods for resale & raw materials	7,329,812	9,318,518	6,454,373
(Cost of) goods and services	16,993,380	15,417,966	11,783,594
Personnel expenses	37,667,094	34,556,026	31,889,450
Depreciation and impairments on fixed assets	1,199,052	1,252,901	1,218,758
Impairments on current assets and provisions for liabilities and charges (additions +, withdrawals -)	-19,158	-111,941	-1,265,154
Other operating expenses	50,731	96,057	236,388
Operating profit (loss)	333,733	1,984,267	2,013,832
Financial income (+)	567,972	144,431	122,375
Revenue from current assets	2,468	1,781	1,216
Other financial revenue	565,504	142,650	121,159
Financial expenses (-)	425,785	357,851	329,423
Costs of debts	240,272	263,538	286,080
Other financial costs	185,513	94,313	43,343
Profit (loss) from regular company activities	475,920	1,770,847	1,806,784
Exceptional income (+)	0	20	0
Write-back of amortisations and depreciations on fixed assets	0	0	0
Other exceptional income	0	20	0
Exceptional expenses (-)	0	7,455	159,519
Exceptional amortisations and depreciations on fixed assets	0	0	0
Other exceptional expenses	0	7,455	159,519
Profit (loss) of the financial year	475,920	1,763,412	1,647,265

Balance sheet

Assets	2022	2021	2020
Fixed assets	27,708,430	28,396,435	29,365,282
<i>Intangible fixed assets</i>	29,342	0	0
Tangible fixed assets	27,679,088	28,396,435	29,365,282
Land and buildings	26,474,174	27,254,290	27,780,984
Plants, machinery and equipment	11,076	20,749	21,638
Furniture and motor vehicles	855,485	864,288	1,158,434
Leasing	0	0	0
Assets in course of construction and payments on account	338,354	257,108	404,226
Financial fixed assets	0	0	0
Current assets	39,607,950	37,266,442	35,195,301
Stock and orders-in-progress	1,725,267	2,050,254	1,580,511
Stock	52,550	52,550	334,259
Orders in progress (projects in progress)	1,672,717	1,997,704	1,246,252
Debtors due in one year or less	6,460,973	4,980,089	2,474,229
Trade receivables	4,798,077	3,213,713	2,366,953
Other debtors	1,662,896	1,766,376	107,276
Investments	2,469,216	2,480,371	2,480,371
Cash and bank balances	27,432,971	26,588,798	26,748,907
Prepayments an accrued income	1,519,524	1,166,930	1,911,283
Total assets	67,316,380	65,662,877	64,560,583

Liabilities	2022	2021	2020
Capital and reserves	31,021,400	30,636,875	28,964,857
Funds of the foundation	345,712	345,712	345,712
Revaluation surpluses	11,891,000	11,891,000	11,891,000
Earmarked funds	6,657,011	6,137,497	6,223,548
Profit (loss) brought forward	11,088,169	11,131,763	9,282,301
Capital grant	1,039,509	1,130,903	1,222,296
Provisions	251,636	286,503	387,467
Provisions for liabilities and charges	251,636	286,503	387,467
Provisions for pensions and similar obligations	434	28,051	103,025
Other provisions	251,202	258,452	284,442
Debts	36,043,344	34,739,499	35,208,259
Creditors due in over one year	6,706,820	7,426,845	8,192,185
Financial debts	6,706,820	7,426,845	8,192,185
Creditors due in one year or less	27,286,641	25,157,775	25,228,926
Creditors becoming due within one year	720,025	765,340	763,911
Trade payables	4,103,982	3,240,702	2,650,432
Received advanced payments (project funding)	16,692,797	17,069,499	17,924,805
Debts in reference to taxes, salaries and social contributions	5,309,038	3,871,496	3,751,586
Various debts	460,800	210,738	138,192
Accruals and deferred Income	2,049,882	2,154,879	1,787,148
Total liabilities	67,316,380	65,662,877	64,560,583



Our institutional partners and global alliances

- Institutional capacity building supported by DGD
- Institutional capacity building supported by Flanders
- Alliance for Education in International Public Health and Tropical Medicine

Latin America

- | | |
|---|-----|
| 1. Post-Graduate Medical School, Universidad Mayor de San Simon (UMSS), Cochabamba, Bolivia | ○ |
| 2. Instituto Nacional de Higiene, Epidemiología y Microbiología (INHEM), Havana, Cuba | ○ ● |
| 3. Instituto Pedro Kouri (IPK), Havana, Cuba | ○ ● |
| 4. Institute of Public Health, Pontificia Universidad Católica del Ecuador (PUCE), Quito, Ecuador | ○ |
| 5. Instituto de Medicina Tropical "Alexander von Humboldt" (IMTAvH), Universidad Cayetano Herredia, Lima, Peru | ○ ● |

Africa

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| 6. Laboratoire de Référence des Mycobactéries (LRM), Cotonou, Benin | ○ ● |
| 7. Centre de Recherche en Reproduction Humaine et en Démographie's (CERRHUD), Cotonou, Benin | ○ ● |
| 8. Clinical Research Unit of Nanoro (CRUN), including Centre Muraz, Burkina Faso | ○ ● |
| 9. Institut National de Recherche Biomédicale (INRB), Ministère de la Santé Publique, Kinshasa, DRC | ○ ● |
| 10. Programme National de Lutte contre la Trypanosomiase Humaine (PNLTHA), Kinshasa, DRC | ○ ● |
| 11. École de Santé Publique (ESP), Université de Lubumbashi, Lubumbashi, DRC | ○ ● |
| 12. Centre de Recherche Sanitaire de Kimpese (CRSK), Kimpese, DRC | ○ ● |
| 13. College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia | ○ ● |
| 14. Jimma University, Jimma, Ethiopia | ○ ● |
| 15. Armauer Hansen Research Institute (AHRI), Addis Abeba, Ethiopia | ○ ● |
| 16. Ethiopian Institute for Public Health (EPIH), Addis Abeba, Ethiopia | ○ ● |
| 17. Centre National de Formation et Recherche de Maferinyah, Guinea | ○ ● |
| 18. Centre d'excellence africain pour la prévention et le contrôle des maladies transmissibles (CEA-PCMT), Conakry, Guinea | ○ ● |
| 19. École Nationale de Santé Publique (ENSP) Rabat, Morocco | ○ |
| 20. Instituto Nacional de Saúde (INS), Maputo, Mozambique | ○ ● |
| 21. Serviço Provincial de Saúde de Tete (SPS), Tete, Mozambique | ● |
| 22. Rwanda Biomedical Centre (RBC), Kigali, Rwanda | ○ ● |
| 23. Centre Hospitalier Universitaire de Kigali, University of Rwanda (UR/CHUK), Kigali, Rwanda | ○ ● |
| 24. School of Public Health, University of Western Cape (UWC), Cape Town, South Africa | ○ ● |
| 25. Department of Veterinary Tropical Diseases (DVRD), University of Pretoria (DVTD), Pretoria, South Africa | ○ ● |
| 26. School of Public Health (SPH - MUCHS), Makerere University College of Health Sciences, Kampala, Uganda | ○ |

Asia

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| 27. National Institute of Public Health (NIPH), Phnom Penh, Cambodia | ○ ● |
| 28. Institute of Public Health (IPH), Bangalore, India | ○ |
| 29. Center for Tropical Medicine, Faculty of Medicine, Gadjah Mada University, Yogyakarta, Indonesia | ○ |
| 30. National Health Research Council (NHRC), Kathmandu, Nepal | ○ ● |
| 31. BP Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal | ○ ● |
| 32. National Institute of Malariaology, Parasitology and Entomology (NIMPE), Hanoi, Vietnam | ○ ● |



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