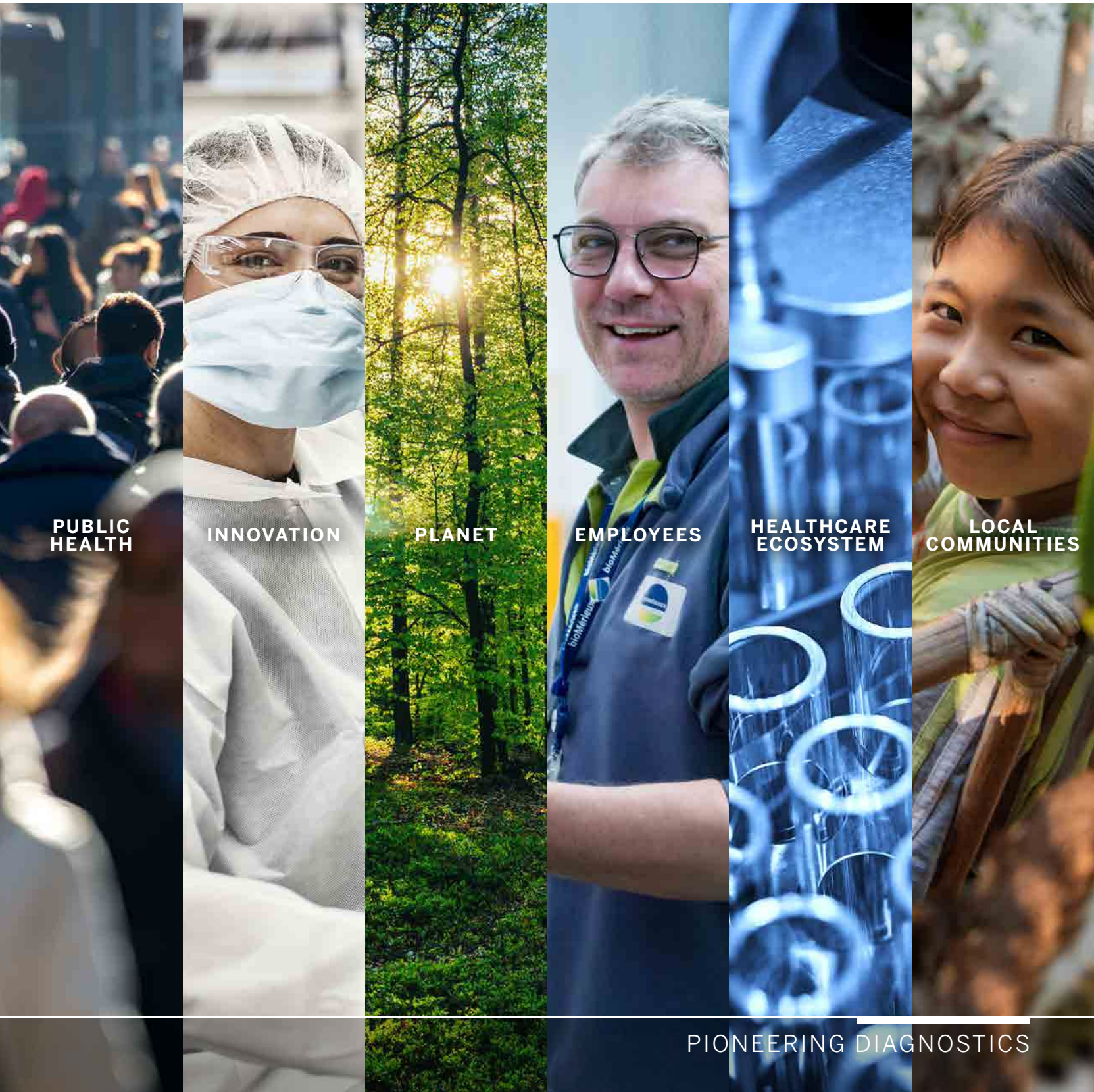
BIOMÉRIEUX

2021 ANNUAL REPORT



PIONEERING DIAGNOSTICS

bioMérieux headquarters in Marcy-l'Étoile (France).

SUMMARY

OUR COMPANY PURPOSE

WE HELP MAKE THE WORLD A HEALTHIER PLACE

Our dedication to public health is the thread that connects everything we do.

It connects us to our history - since 1963, we have been fulfilling the vision of the Mérieux family to **improve health**, while maintaining the values of **respect, accountability, transparency**, and **sharing**. Building on our strong legacy, we understand that our expertise in infectious diseases and our international presence give us a **special duty to act as a responsible corporate citizen**, serving the **greater good** and the **community**.

This commitment also connects us with our environment - infectious diseases are one of the major threats to human kind.
Their emergence and spread are dramatically accelerated by climate change and globalization. The risk of finding ourselves unarmed to face ultra-resistant bacteria is now a reality. Diagnostics is a game changer in this fight. By pioneering diagnostic solutions, we help clinicians **improve patient care** and we help industries **prevent contamination** of the food and pharmaceuticals they produce.

At bioMérieux we are convinced that, only by taking into account our **entire ecosystem** and the **public interest**, will we be able to succeed in building a **healthier world** and a more **inclusive society**.

We pioneer, develop and produce high quality *in vitro* diagnostics to **improve public health worldwide.**

We sustain a robust business model that allows us to **invest in innovation and create value.**

We implement environmentally-responsible actions to **preserve the planet** as a healthy place to live.

We support the **inclusion, well-being and development** of our team members, who all help save lives.

We foster transparent and ethical **dialogue with the healthcare** ecosystem to advance diagnostics.

We build long-term partnerships to increase our **positive impact on local communities** and provide our **support to the most vulnerable populations.**

We are bioMérieux.
We act for a positive impact.
We act for a healthier world.

EDITO

Once again, the past year has been extraordinary. In 2021, the COVID-19 pandemic continued to disrupt our lives and health systems, with the appearance of new variants and successive waves of infection. We were able to rely on the exemplary efforts of all the actors in the healthcare field to deal with the health emergency. I would like also to salute the remarkable commitment of the bioMérieux teams who showed resilience and solidarity in a fast-changing situation without losing sight of the core essence of our business: continuously innovating to provide diagnostic solutions for public health and consumer safety worldwide.

This pandemic has had an unprecedented impact on our business sector. Diagnostic testing has become part of the daily life of all the citizens on the planet. In addition to hospitals and laboratories, it has become accessible on the street corner, in physician's offices, pharmacies and even at home. This democratization is accompanied by a greater recognition of the value of diagnosis in the healthcare continuum, along with prevention and treatment.

In this context, we have the responsibility to innovate and make these innovations accessible. This year, we have invested nearly 12% of our sales in research and development to prepare future solutions and we have improved our production capacities. When we built new units in Salt Lake City (United States) or Suzhou (China) and when we enlarged our International Distribution Center in Saint-Vulbas (France), we made a long-term commitment to combating infectious diseases.

Our innovative, fast and reliable solutions aim to meet the needs of clinical pathologists, clinicians and patients. Beyond COVID-19, bioMérieux has made fighting antimicrobial resistance a major part of its strategy. We launched a mass spectrometry system, VITEK® MS PRIME, which revolutionizes routine microbial identification and adds to our already robust product lines. We have been committed to the fight against this silent pandemic for a long time. Here again, diagnostics have an essential role to play, particularly by supporting healthcare professionals in antimicrobial stewardship.

In response to crucial medical needs, we also marketed new tests in 2021, such as VIDAS® TB-IGRA to identify latent tuberculosis infection and NEPHROCLEAR™ CCL14 to predict persistent severe acute kidney injury. Our innovations also serve Industry, a quickly evolving sector. In the food segment, we have specifically developed our molecular biology solutions to enhance our product portfolio and address new markets. In the healthcare segment, we support quality control for gene and cell therapies that are so promising for the medicine of the future.

Contributing to improving global health is our Company purpose. Our social, societal and environmental goals are an integral part of our overall strategy. We will also continue to carry out numerous philanthropic activities: in addition to supporting the humanitarian activities of the Mérieux Foundation, we have initiated an endowment fund to reduce inequalities in education around the world. At bioMérieux, Corporate Social Responsibility (CSR) is a real ambition shared by every level of the organization.

Alexandre Mérieux
Chairman and CEO

PIONEERING DIAGNOSTICS TO ADDRESS PUBLIC HEALTH CHALLENGES

OUR RESOURCES AND STRENGTHS

INTERNATIONAL AND COMMITTED TEAMS

- Around 13,000 employees
- Operations in 44 countries
- Diversity, multiculturalism and inclusion
- Good social dialog

SOLID FINANCIAL FUNDAMENTALS

- Stable family shareholder structure
- Mutual trust with financial partners (investors and banks)
- Solid structural cash flow generation

SUSTAINED INVESTMENT IN INNOVATION

- Between 11 and 13% of sales
- 14 R&D centers

STRICT REQUIREMENTS FOR OUR OPERATIONS

- 15 bio-industrial sites
- Over 12,000 suppliers
- Policy of sustained investment
- Code of Conduct

A RESPONSIBLE ENVIRONMENTAL POLICY

- Careful, responsible consumption of natural resources and primary raw materials and optimization of waste production and recycling
- Greenhouse gas emission management
- Eco-design development and optimization of the life cycle of our products

A HUMAN-CENTERED AND SUPPORTIVE CORPORATE CULTURE

- Human-centered commitment
- Ties with local stakeholders

CLINICAL APPLICATIONS

Combating antimicrobial resistance • Fighting against sepsis • Managing the risk of epidemics due to emerging pathogens

OUR COMPANY PURPOSE

We help make the world a healthier place

INDUSTRIAL APPLICATIONS

Food and pharmaceutical product quality

OUR FUNDAMENTALS

A FAMILY-OWNED COMPANY WITH A LONG-TERM VISION

4 GENERATIONS

COMMITTED TO SERVING PUBLIC HEALTH

To address our customers' challenges

- **Clinical laboratories**
- **Hospital laboratories**
- **Physicians**
- **Blood banks**
- **Veterinarians**
- **Industrial control laboratories (food, pharmaceuticals and cosmetics)**

OUR VALUE CREATION

PROMOTING EMPLOYEE ACHIEVEMENTS AND WELL-BEING

- 19 hours of training/employee
- Training take-up rate: 93%
- 7.3% of internal promotions, or 869 employees
- Employee share ownership plans

ACHIEVING RESULTS THAT GUARANTEE INDEPENDENCE

(CAGR 2018-21)

- Sales +12%
- Net income +33%
- Free cash flow +45%
- Dividends +22%

INTERACTING WITH THE HEALTH ECOSYSTEM

- Extensive industrial know-how
- ISO 9001 certifications: 56 sites and subsidiaries in 2021 versus 55 in 2020
- ISO 13485 certifications: 15 sites and subsidiaries in 2021 as in 2020
- Health economics studies
- Responsible commitment to our suppliers and local procurement policy
- Expertise sharing with healthcare professionals
- Responsible personal data management
- Code of Conduct training for everyone

IMPROVING PUBLIC HEALTH WORLDWIDE

- Open innovation (joint research laboratories, public/private partnerships)
- Product quality and safety
- 76% of R&D expenditure dedicated to the fight against antimicrobial resistance

PRESERVING THE PLANET

- bioMérieux's GHG emissions reduction approach and targets have been recognized by the Science Based Targets initiative as meeting the levels required to achieve the goals of the Paris Climate Agreement and to keep global warming limited to 1.5 °C, the scientifically recognized threshold for avoiding the most serious consequences of climate change
- Ecodesign approach for products

ENSURING A POSITIVE EFFECT ON COMMUNITIES

- Nearly €6 million spent in 2021
- 4.1‰ of sales dedicated to sponsorship
- Employee and Company involvement in local communities
- Fair tax contribution

1897

After studying alongside Louis Pasteur, Marcel Mérieux creates Institut Mérieux

1937

Dr. Charles Mérieux takes over

1963

Alain Mérieux creates bioMérieux

2015

Alexandre Mérieux becomes Chief Executive Officer of bioMérieux and Chairman in 2017

BIOMÉRIEUX WORLDWIDE

bioMérieux's development strategy is based on an international, long-term vision to meet the healthcare challenges related to infectious diseases all over the world.
Our headquarters are based in Marcy-l'Étoile, France. Located in 44 countries, we serve more than 160 countries with the support of a large network of distributors.
We generate more than 93% of our sales outside France. bioMérieux is present on all continents through 15 major production sites, 14 R&D centers, subsidiaries and offices.
Almost 13,000 team members contribute to our public health mission while respecting the human-centered values upheld by the Mérieux family.

CONSOLIDATED SALES IN 2021

€3,376M

GROWTH

+10.5%

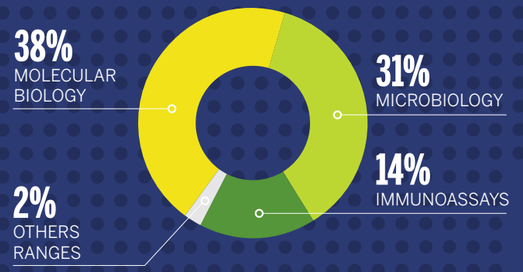
at constant exchange rates and scope

SALES BY APPLICATION

CLINICAL APPLICATIONS

85%

of consolidated sales



INDUSTRIAL APPLICATIONS

15%

of consolidated sales

SALES BY REGION

AMERICAS

€1,669M

49.4% of consolidated sales

EUROPE – MIDDLE EAST – AFRICA

€1,127M

33.4% of consolidated sales

ASIA PACIFIC

€580M

17.2% of consolidated sales

WHAT HAPPENED IN 2021

SINGAPORE · JANUARY

Opening of **the Regional Distribution Center (RDC),** dedicated to instruments and spare parts, which serves the entire Asia Pacific region.

WORLD · MARCH

Organization of the **Global Live Event**, which brought together bioMérieux employees from all over the world remotely.

FRANCE · JULY

Presentation of **the ARGENE® SARS-COV-2 R-GENE® PCR kit**, developed in Grenoble and Verniolle, at the *Grande Exposition du Fabriqué en France* held at the Palais de l'Élysée in Paris.

BRAZIL · NOVEMBER

Opening of new offices by our **bioMérieux Brazil subsidiary in Rio de Janeiro** where 170 team members work.

US · NOVEMBER

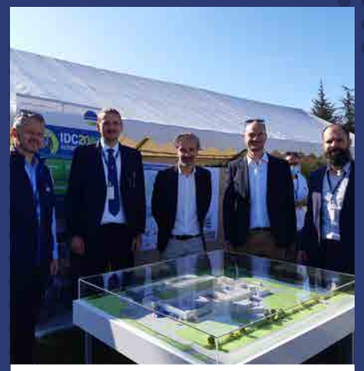
Opening of the "1201 Admin Building", bioMérieux **US new headquarters** in Salt Lake City, which accommodates 700 team members working for administrative and quality functions.

FINLAND · APRIL

Celebrating our **subsidiary's 40th anniversary** in Espoo, near Helsinki and the 20th anniversary of the bioMérieux "Nordic" region which also includes Denmark, Norway and Sweden.

CHINA · JULY

Organization of the **2021 Strategy Distributor Partners Meeting** in Shanghai, attended by approximately 100 distributors.



FRANCE · JULY

Launching the extension work of the **International Distribution Center (IDC),** located in Saint-Vulbas, which will increase its capacity by 50% to support our growth.

CHINA · DECEMBER

In Suzhou, continued **construction of our microbiology reagent production site** (photo) and completion of the construction of the new Hybiome site.

WORLD · DECEMBER

Celebrating the **30th anniversary of the Industrial Unit** through events organized on the sites (as here in Chile) and sports challenges for the benefit of L'Entreprise des Possibles.

NEW RESPONSES TO CHANGES IN THE HEALTH SECTOR

The COVID-19 pandemic has revealed the importance of diagnostic testing in the healthcare pathway to the general public. In only two years, technologies and uses have advanced with unprecedented speed, a prelude to future major trends. To meet patient medical needs and healthcare professional expectations, businesses are pursuing their efforts to increase the medical and economic value of their solutions.

The health crisis has acted as a catalyst accelerating the education of the general public regarding the value of *in vitro* diagnostics in public health. While its importance was once poorly recognized, today it is an undisputed pillar of the care continuum. "*In only two years, we have achieved ten years of progress!*" states Mark Miller, Executive Vice-President and Chief Medical Officer at bioMérieux. This recognition is accompanied by a tremendous technological acceleration.

The pandemic has also generated new operating procedures for clinical testing and faster studies, without compromizing patient safety or product quality. The joint capital expenditure of governments and industry in research and production have made it possible to fund innovation while accelerating procedures and minimizing risks. Mark Miller is convinced that "*these developments are here for the long term. Everyone agrees that we will never go back.*"

Need for faster, reliable and usable results

The COVID-19 pandemic has confirmed the three major challenges of *in vitro* diagnostics. First, the speed and relevance of the information delivered by the tests: "*These two points are crucial. We must have results as quickly and reliably as possible, but this is not sufficient. It is also necessary that the information provided be usable in a concrete and immediate way to optimize patient care*", explains Mark Miller. The third challenge is that of decentralization. This consists of conducting tests as close as possible to patients.

Making sure that results are accessible and usable quickly is the precise goal of the solutions developed by bioMérieux. "*Good information that arrives too late is meaningless!*" adds Pierre Boulud, Chief Operating Officer, Clinical Operations at bioMérieux. "*This is the whole point of BIOFIRE® respiratory panels which give results in 45 minutes, or VITEK® MS PRIME, a very innovative instrument which make it possible to prioritize urgent samples.*"

The contribution of data and artificial intelligence

For even faster and more efficient solutions, the diagnostics world has widely invested in the data science and artificial intelligence fields. Data and the correct interpretation thereof are at the heart of the diagnostics of the future. It is a matter of managing the data generated by diagnostic solutions, combining them with other data and facilitating interpretation for laboratories and clinicians. bioMérieux, aware of the considerable field opened by these new technologies, already has connectivity tools and is accelerating its research in this field (*see page 22*).

The syndromic approach for dealing with the diversity of infections

In late 2021, in addition to COVID-19 and seasonal flu, severe, atypical and unpredictable respiratory viruses[1] have appeared, particularly in Asia, Europe and the United States. These unusual, even abnormal forms, emphasize the importance of the syndromic approach of our BIOFIRE® range (*see page 18*) because multiplex tests are the best response to know immediately what pathogen is affecting a patient presenting with respiratory symptoms.

Pierre Boulud goes on regarding COVID-19: "*Unfortunately, it is possible that this virus has become part of the health landscape, along with flu and several other respiratory viruses*. So the value of the syndromic approach is apparent. By diagnosing several pathogens in one step, our syndromic solutions best meet long-term needs.*"

Innovation at the heart of our priorities

For more than 55 years, we have been committed to innovation by mobilizing our key technologies — molecular biology, microbiology and immunoassays — in order to meet the expectations of clinical pathologists and physicians. The solutions that we developed enhance the medical and predictive value of our tests. They also optimize laboratory operational performance *(see page 24)*.

** Many respiratory viruses regularly circulate during the year: RSV, hMPV, Parainfluenza, etc. in addition to influenza (A and B).*

1. Increased Interseasonal Respiratory Syncytial Virus (RSV) Activity in Parts of the Southern United States, https://emergency.cdc.gov/han/2021/han00443.asp

Ujiie M, Tsuzuki S, Nakamoto T, Iwamoto N. Resurgence of Respiratory Syncytial Virus Infections during COVID-19 Pandemic, Tokyo, Japan. Emerg Infect Dis. 2021; 27(11): 2969-2970. https://doi.org/10.3201/eid2711.211565

INDUSTRIAL APPLICATIONS: FOR DIGITAL, PREDICTIVE AND PREVENTATIVE DIAGNOSTICS

The food and pharmaceutical industries are constantly evolving. Our diagnostic tests are used to guarantee the microbiological quality of raw materials, the production environment and products throughout the manufacturing process. As one of the leaders in industrial microbiology, we invest in innovative alternative technologies, in collaboration with these industries, in order to best tailor its solutions to their needs.

"*We have understood the full value of diagnostics in industry as well, especially upstream in order to predict and prevent contamination. In this context, the greatest challenge is to understand how to manage data!*" explains Yasha Mitrotti, Executive Vice-President, Industrial Microbiology, at bioMérieux.

For the food sector, we are developing predictive solutions to anticipate and therefore prevent the appearance of pathogens or problems altering the smell and taste of food. Promising markets include nutraceuticals (foods having a beneficial effect on the body), therapeutic cannabis (in the United States), alcoholic beverages, plant-based beverages and chocolate.

In the pharmaceutical field, buoyed by messenger RNA vaccines and personalized drugs, we are launching new products making it possible to digitize and automate environmental control. We are also supporting the expected revolution of the gene and cell therapy market with the development of diagnostic solutions adapted to the technical requirements thereof.

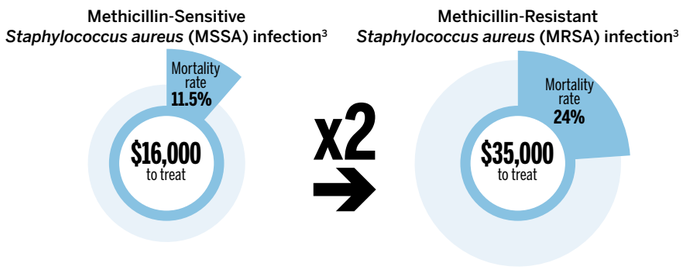
ANTIMICROBIAL STEWARDSHIP: THE KEY TO COMBATING BACTERIAL RESISTANCE AND SEPSIS

Antimicrobial resistance (AMR), particularly antibiotic resistance, is among the top 10 threats to human health worldwide according to the World Health Organization (WHO). At bioMérieux, the fight against antibiotic resistance is one of our priorities. Our comprehensive range of solutions supports clinicians in making medical decisions. They are crucial for the management of patients with suspected sepsis. An often-overlooked syndrome, sepsis is nevertheless one of the leading causes of death worldwide and its management is complicated by antibiotic resistance.

76%
of our R&D budget is spent on antimicrobial resistance

80%
of our turnover is related to the fight against antimicrobial resistance

According to a study published by The Lancet in early 2022[1], antibiotic resistance is thought to be directly responsible for 1.27 million deaths worldwide and is indirectly implicated in nearly 5 million. And, if nothing changes, AMR could even become one of the most significant causes of death by 2050, with 10 million deaths per year[2].
How did we get to this point? For decades, an increasing number of micro-organisms (bacteria, viruses, parasites…) have naturally acquired the ability to counteract drugs designed to kill them. The excessive and inappropriate use of antibiotics in humans, animals and agriculture has led to a dramatic increase in this phenomenon. Infections with antibiotic-resistant bacteria are more difficult and costly to treat. They lead to higher mortality rates in patients *(see diagram below)*[3].
Antimicrobial stewardship (AMS) is one of the main ways to preserve antibiotic efficacy. AMS programs are hospital-based programs that use a series of interventions to optimize antibiotic stewardship. Associated with infection control measures, they also help to prevent the spread of resistant micro-organisms in healthcare facilities.



Our diagnostic solutions are at the heart of AMS programs. Throughout patient management, they provide key information to clinicians to:

- identify the causative pathogen;
- determine the antibiotic resistance profile of a bacterium and select the most appropriate treatment, thereby limiting the use of broad-spectrum antibiotics and avoiding adverse side effects;
- monitor the patient's clinical progression in order to adjust the duration of treatment and stop it as soon as possible;
- detect and prevent the spread of multidrug-resistant bacteria or superbugs.

Antimicrobial resistance and sepsis, the same battle
Sepsis is a life-threatening organ dysfunction caused by an excessive immune response to a severe infection. Every year, 49 million people worldwide suffer from sepsis, and 11 million of them do not survive[4].

The fight against antibiotic resistance and the battle against sepsis are linked. The stakes are high: the death rate for patients with sepsis with resistant pathogens is twice as high as for those with non-resistant pathogens[5]. Diagnostics is essential to identify the nature of the pathogen, adapt treatment, monitor the patient's response and avoid progression, particularly to septic shock. If sepsis is suspected, antibiotic therapy should be administered as soon as possible. Any delay in starting treatment can have fatal consequences[6]. The problem is that prescribing broad-spectrum antibiotics as a first-line treatment contributes to the development of antibiotic resistance. Prescribing antibiotics immediately should be limited to the most critical patients (such as those in septic shock) or those with a high probability of being diagnosed with sepsis. The use of diagnostic tests allows the identification of the causative pathogen and the tailoring of antibiotic therapy for a more targeted treatment.
Our comprehensive "Sepsis Management" range is dedicated to patient management throughout their care pathway.

STRENGTHENING OUR RAPID MICROBIOLOGY OFFERING

We have signed a co-exclusive distribution agreement in Europe with the American company Specific Diagnostics for the SPECIFIC REVEAL® rapid antibiotic susceptibility testing (AST) system. This system, based on patented metabolomic signature technology, provides results for blood infections in 5 hours[7] on average directly from a positive blood culture. Coupled with our pathogen identification systems BIOFIRE® BCID2 or VITEK® MS PRIME, it allows clinicians to quickly optimize the antibiotic treatment, whether it is to use a more targeted and less expensive antibiotic, or to select a more appropriate molecule in the case of a multidrug-resistant infection. With its focused menu, small size and scalable configuration, SPECIFIC REVEAL® can meet the needs of hospitals of all sizes.

SEPSIS, THE GREAT UNKNOWN

Only 52% of adults surveyed in 5 European countries have heard of sepsis. This figure comes from a survey* commissioned by bioMérieux and The UK Sepsis Trust, an internationally-renowned charity whose aim is to help end preventable deaths from sepsis and improve the lives of survivors. This is the lowest awareness score compared to other pathologies cited in the survey. The study results were released on World Sepsis Day on 13 September 2021, and reveal that awareness varies considerably between countries: very high in the UK (82%) and Germany (83%), lower in Sweden (55%) and significantly lower in Italy (33%) and France (7%). Furthermore, the majority of adults surveyed consider that better access to basic information about sepsis and faster diagnostic tests are appropriate responses to sepsis and antibiotic resistance.

** Technical note can be found on our website: https://www.biomerieux.com/corp/en/journalists/press-releases/survey-5-european-countries-about-sepsis-demonstrates-lack-awareness-and-expectation-faster.html*

VITEK® MS PRIME TAKES MICRO-ORGANISM IDENTIFICATION TO THE NEXT LEVEL

The rapid identification of micro-organisms is an essential step in laboratory work. Over the past decade, MALDI-TOF* mass spectrometry has completely transformed microbiology, quickly providing essential information for clinicians to prescribe more effective antibiotic therapy.

In keeping with its pioneering spirit, bioMérieux integrated this technology into its portfolio, bringing the VITEK® MS system to market ten years ago.
CE marked in April 2021, VITEK® MS PRIME is the next generation of our mass spectrometry system.

This compact, automated instrument increases laboratory productivity with innovative features such as prioritization management for urgent tests and continuous load and go. Easy to maintain and with a robust database that is constantly being expanded with new pathogens and clinically relevant species, this new instrument allows for greater efficiency and faster results, which are essential to combat antimicrobial resistance.

VITEK® MS PRIME is compatible with VITEK® 2 for antibiograms and MYLA® software for data integration and analysis.

Introduced exclusively in 2021 at ECCMID**, the world's leading clinical microbiology conference, VITEK® MS PRIME has been marketed since the second half of 2021 in selected European, Asian and Latin American markets, with a rollout to the rest of the world, including the US, planned for 2022.

** Matrix-Assisted Laser Desorption Ionization Time of Flight.*
*** European Congress of Clinical Microbiology & Infectious Diseases.*

COMMITTED TO THE FLEMING FUND

bioMérieux has been involved for over two years with the Fleming Fund, a public program to fight antimicrobial resistance worldwide. As part of this partnership, our teams are equipping laboratories with diagnostic solutions in low-income countries.

In 2019, following a call for tender, bioMérieux was appointed as the lead partner in this UK public investment program, with the mission to equip resource-limited countries with tools to combat antimicrobial resistance. To receive support from the Fleming Fund, a country must meet at least two criteria: it must be classified as a low- and middle-income country and it must have a national action plan in place to combat antimicrobial resistance.

The objective is to equip a clinical laboratory and a veterinary reference laboratory in each country concerned with the VITEK® MS and VITEK® 2 systems for pathogens identification and antibiotic susceptibility testing, as well as the MYLA® software for data processing. By the end of 2021, despite constraints due to the health crisis, we have equipped 8 countries: Laos, Malawi, Nepal, Senegal, Swaziland, Tanzania, Zambia and Zimbabwe. We are currently delivering and/or setting up in 7 other countries: Bangladesh, Bhutan, India, Indonesia, Nigeria, Sierra Leone and Vietnam.

Our employees are supported by the teams of Mott MacDonald, the agency mandated by the Fleming Fund to implement the programs. For each project, bioMérieux sends two team members to the country concerned to commission the equipment in a reference laboratory and to train the local teams. On several occasions, our Lab Consultancy teams have also been involved to provide expertise in laboratory architecture and organization.

In addition to the installation of equipment, our mission also covers the support of reference laboratories in the use of our systems and the development of knowledge about antimicrobial resistance.

ACTIONS TO COMBAT ANTIMICROBIAL RESISTANCE ON THE AFRICAN CONTINENT

In Nigeria, as part of our agreement with the Nigeria Center for Disease Control (NCDC) signed in 2019, we also signed a collaboration agreement with the German service provider for sustainable development (GIZ) in 2021 to support the NCDC in the fight against antimicrobial resistance. The aim is to promote and implement antimicrobial stewardship programs. This is the first time bioMérieux has entered into this type of partnership in Africa under the guidance of the Africa Public Health and Public Affairs Department.

In Ivory Coast, as part of the memorandum of collaboration agreement signed with the Ivorian State in 2019, bioMérieux supported the activities of the ONE HEALTH 2021 national platform in particular in collaboration with the National Antibiotic Resistance Committee, the Ministry of Health, the WHO, the FAO and the NGO Breakthrough Action. We have participated in national awareness-raising activities on the proper use of antibiotics in the fields of human and veterinary health as well as the environment. We also participated in a television program to raise awareness about appropriate antibiotic use.

THE GLOBAL-PPS, AN EFFECTIVE TOOL FOR THE APPROPRIATE USE OF ANTIBIOTICS

bioMérieux supports the initiative *Global Point Prevalence Survey* (Global-PPS)* coordinated by Professor Herman Goossens and Dr Ann Versporten of the University of Antwerp (Belgium). Launched in 2015, it allows hospitals around the world to compare their antibiotic consumption and bacterial resistance rates. It thus helps to promote better antimicrobial stewardship (AMS) and to curb the spread of antimicrobial resistance.
Besides, a study[8] published in 2021 shows that the use of Global-PPS by hospitals in resource-limited countries is an effective tool for implementing locally adapted AMS programs: 69.3% of participating hospitals reported that at least one type of AMS intervention was driven by PPS results. In addition, the majority of hospitals performing PPS on a recurring basis saw an improvement in their indicators.

** bioMérieux is the exclusive private partner of the Global Point Prevalence Survey. The Company is funding the study, but has no role in study design, data selection, analysis or interpretation, or drafting of reports. The data are kept strictly confidential and are stored anonymously at the coordination center of the University of Antwerp.*

AWARENESS RAISING IS A PILLAR OF OUR STRATEGY

To mark World Sepsis Day (13 September) organized by the Global Sepsis Alliance and the WHO's World Antimicrobial Awareness Week (18 to 24 November 2021), we organized a number of awareness-raising activities for our team members and external stakeholders on these global health issues. This is reflected in the dissemination of numerous messages on the prevalence and means of prevention on our social networks or internal or external events thanks to the strong commitment of our subsidiaries.

1. *Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis, The Lancet. 2022; S0140-6736(21)02724-0.*
2. *Tackling drug-resistant infections globally: Final report and recommendations. The Review on Antimicrobial Resistance, chaired by Jim O'Neill, May 2016.*
3. *Filice GA, et al. Excess Costs and Utilization Associated with Methicillin Resistance for Patients with Staphylococcus aureus Infection. Infection Control & Hospital Epidemiology. 2010; 31:365-373, accessed on 02/08/2022.*
4. *Global Report on the Epidemiology and Burden of Sepsis. Current evidence, identifying gaps and future directions. https://apps.who.int/iris/bitstream/handle/10665/334216/9789240010789-eng.pdf*
5. *Hanberger H, et al. Increased mortality associated with methicillin-resistant Staphylococcus aureus (MRSA) infection in the intensive care unit: results from the EPIC II study. International Journal of Antimicrobial Agents. 2011; 38(4):331-5.*
6. *Kumar A, et al. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. Crit Care Med. 2006; 34(6):1589-1596.*
7. *Tibbetts R, et al. Antimicrobial susceptibility testing directly from positive blood culture with the Reveal Rapid AST System: clinical results for Gram-negative pathogens. Abstract 8813, ECCMID 2020 and in review.*
8. *Pauwels I, et al. Assessing the impact of the Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS) on hospital antimicrobial stewardship programs: results of a worldwide survey. Antimicrobial Resistance and Infection Control, 2021; 10(1):138.*

EDUCATIONAL RESOURCES WITH FREE ACCESS

Our Medical Affairs Department develops numerous communication tools to improve awareness and knowledge of antimicrobial resistance and sepsis among the general public, healthcare professionals and our team members.

In 2021, we issued a selection of publications on the contribution of diagnostics in the implementation of AMS programs in hospitals ("*Evidence-based diagnostics for antimicrobial stewardship*") for our clients.

We renewed our cooperation agreement with the Center for Infectious Disease Research and Policy (CIDRAP) and sponsored a webinar in Africa on the role of diagnostics in antimicrobial stewardship.

We provided an educational grant for an online course on antimicrobial stewardship organized by the British Society for Antimicrobial Chemotherapy (BSAC) for healthcare professionals.

The Educational Support section on our website www.biomerieux.com has been enhanced with:

- three new thematic tutorials on AMR, AMS and sepsis, bringing our tutorials on these topics to nine;
- the release of an online podcast "*Strategies to tackle AMR*";
- a new educational manual on the "*Use of Procalcitonin to support Antimicrobial Stewardship - A selection of clinical cases*", the 7th in our collection dedicated to AMR/AMS.

TESTS DESIGNED FOR EMERGENCY SITUATIONS

In medical emergency situations, every minute counts. bioMérieux has developed a wide range of tests that meet the specific needs of emergency practitioners and resuscitators for the management of infectious diseases, including sepsis, and non-infectious diseases, such as cardiovascular diseases or acute kidney injury (AKI) that frequently affect hospitalized patients. These diagnostic tools help clinicians to quickly assess the potential causes of the patient's condition and adapt their management.

DETECTION OF RENAL STRESS

CE marked in February 2021, our VIDAS® NEPHROCHECK® test detects renal stress before renal damage is proven. It is used in conjunction with clinical assessment to help predict the risk of moderate to severe AKI in critically ill patients. This test is based on the detection of 2 innovative urinary biomarkers: TIMP-2 (tissue inhibitor of metallo-proteinases-2) and IGFBP-7 (insulin-like growth factor binding protein 7).

PREDICTION OF PERSISTENT SEVERE AKI

Developed through our partnership with Baxter International Inc, a global player in acute care, the NEPHROCLEAR™ CCL14 test is the only test to predict persistent severe acute kidney injury and aid in clinical decision-making and care pathways. CE marked in October 2021, it will be gradually marketed in Western Europe during 2022.

AKI EACH YEAR WORLDWIDE[1]:

13.3 million cases

with **1.7** million deaths

Acute kidney injury (AKI)
AKI is characterized by a sudden deterioration in kidney function, often following surgery, trauma or infection.
This complication affects 7-18% of hospitalized patients[1] and up to 50% of critically ill patients[2]. It is associated with a ten times higher in-hospital mortality rate and a higher rate of chronic kidney disease and dialysis in post-operative patients[3].

Diagnostic tests to assess the risk of AKI at an early stage are all the more important as early preventive treatment can limit the progression of the severity of the kidney damage. Conversely, any delay in detection can potentially lead to irreversible consequences for the kidney and the patient.

Acute cardiovascular diseases
According to the WHO, cardiovascular diseases are the leading cause of death in the world. An estimated 17.7 million deaths are attributable to cardiovascular diseases, which accounts for 31% of all deaths worldwide.
For many years, we have been active in the diagnosis of acute cardiovascular diseases such as acute myocardial infarction, heart failure and pulmonary embolism through a wide range of immunoassays:

- VIDAS® High sensitivity Troponin I, a tool to help diagnose myocardial infarction and determine 30-day risk stratification to optimize the management of acute coronary syndrome;
- VIDAS® NT-proBNP2, an automated quantitative test that helps in the diagnosis of heart failure;
- VIDAS® D-Dimer Exclusion™ II, an automated test used to exclude venous thromboembolic diseases, such as pulmonary embolism and deep vein thrombosis.

DEMONSTRATING THE VALUE OF EARLY DIAGNOSTICS

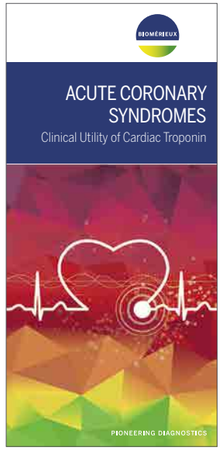
In collaboration with Premier Applied Sciences® and Baxter, bioMérieux conducted a retrospective study demonstrating for the first time the increased resource utilization and costs associated with persistent severe acute kidney injury. Based on a large data set, this study, presented at the International Symposium on Intensive Care and Emergency Medicine (ISICEM)[4], highlights the importance of early diagnosis in the management of patients at risk.

RAISING AWARENESS AMONG CLINICIANS, AN ESSENTIAL STEP AGAINST AKI

In 2020, bioMérieux conducted a survey of clinicians in intensive care, cardiology, internal medicine, nephrology and emergency departments in France, Germany, Italy, Spain, the United Kingdom and the United States.
The results highlight the great variation in clinicians' knowledge of AKI.
This study was the subject of a presentation at the 3rd World Summit of the American Association of Kidney Patients (AAKP). The results will be published in a second phase and will feed into an awareness-raising campaign.
In addition, to contribute to a better management of acute kidney injury, we have deployed an educational medical information toolkit in 2021 composed of an educational manual, a monograph and infographics.
The Educational Support section of our website www.biomerieux.com also provides access to webinars and symposia on AKI. In 2021, we supported a European Society of Intensive Care Medicine (ESICM) webinar on the role of AKI biomarkers in clinical practice and an International Vicenza Course symposium on the need to improve awareness of AKI among healthcare professionals.

AKI/COVID-19: INCREASED RISK OF DEATH

We conducted a study with Premier Applied Sciences® and the University of Chicago on the impact of AKI in patients with COVID-19. The results were presented at the European Society of Intensive Care Medicine (ESICM) Congress: of 208,000 COVID-19 patients hospitalized in the US, 30% developed AKI and this rate rose to 52% for those admitted to the intensive care unit. When AKI and COVID-19 are combined, the risk of admission to the intensive care unit is 3.7 times greater and the risk of death is 5 times greater. The impact on the healthcare system is significant: length of stay, hospitalization costs, risk of hospital readmission and dialysis are increased.



Our collection of educational manuals for laboratories and clinicians has been expanded with a booklet on the topic: "*Acute coronary syndromes: clinical utility of cardiac troponin*".
A section on "Cardiac Emergencies" has been created in the Educational Support section of our website www.biomerieux.com

1. Lewington AJ, Cerdá J, Mehta RL. Raising awareness of acute kidney injury: a global perspective of a silent killer. Kidney Int. 2013; 84(3): 457-467.
2. Mandelbaum T, Scott DJ, Lee J, et al. Outcome of critically ill patients with acute kidney injury using the AKIN criteria. Crit Care Med. 2011; 39(12):2659-2664.
3. Hobson C, Ozrazgat-Baslanti T, Kuxhausen A, et al. Cost and mortality associated with postoperative acute kidney injury. Ann Surg. 2014; 00:1-8.
4. https://posters.isicem.org/category/C6_0/posters/P128

THE SYNDROMIC APPROACH: ADDRESSING THE COMPLEXITY OF INFECTIOUS DISEASES

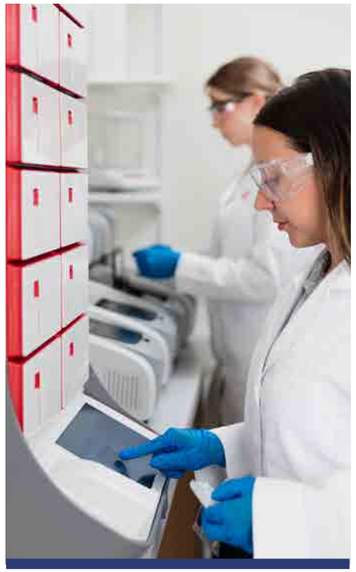
A syndromic diagnosis relies on a single test to simultaneously identify the micro-organisms most frequently responsible for an infection in a given clinical syndrome. bioMérieux is a pioneer and leader in this field thanks to its multiplex PCR* technology integrated into the BIOFIRE® FILMARRAY® platform and its associated panels.

In most patients, the initial symptoms of an infection – fever, diarrhea, cough, headache, etc. – are not specific to its cause. The traditional diagnostic strategy is to perform several successive or simultaneous tests until a positive test result is obtained.

Syndromic diagnostics revolutionizes this practice. By targeting several possible pathogens in a single test, it saves time and efficiency in the diagnosis of the disease, allowing the patient to be treated more quickly and more specifically; a medical benefit that is all the more valuable in cases of critical infections.

The BIOFIRE® FILMARRAY® platform integrates sample preparation, amplification and pathogen detection in a closed and fully-automated system. It enables the simultaneous detection of bacteria, viruses, fungi and parasites that can cause an infectious disease in 45 to 65 minutes, where several traditional tests can take days or even weeks. The amount of usable information generated by a syndromic diagnostic test is much greater, allowing for more personalized therapeutic decisions. Our range covers the following major syndromes: upper respiratory tract infections, pneumonia, sepsis, gastrointestinal infections and meningitis/encephalitis.

In the face of the COVID-19 pandemic, the syndromic approach has proven to be a useful tool in combating overcrowding in emergency departments by reducing waiting times for results. More generally, syndromic diagnostic is also an appropriate response to the increasing complexity of infectious medicine practice in the face of the emergence and spread of new pathogens throughout the world.



** Polymerase Chain Reaction.*

DE NOVO FDA CLEARANCE FOR THE BIOFIRE® RESPIRATORY PANEL 2.1

In March 2021, our BIOFIRE® Respiratory Panel 2.1 (RP2. 1) received *De Novo* authorization from the US Food and Drug Administration (FDA), becoming the first SARS-CoV-2 diagnostic test approved by the FDA after going through the normal approval process, outside of Emergency Use Authorization (EUA).

In addition to the COVID-19 virus, this panel detects 21 viral and bacterial pathogens, the most common in patients with acute upper respiratory tract infections, in approximately 45 minutes.

This test works with the fully-automated FILMARRAY® 2.0 or FILMARRAY® TORCH systems, with a sample preparation time of only 2 minutes.

BIOFIRE BECOMES BIOMÉRIEUX

Acquired in 2014, our US subsidiary BioFire Diagnostics Inc. which developed the BIOFIRE® FILMARRAY® technology, has adopted the bioMérieux name as of January 2022. BIOFIRE® remains the range that encompasses all of bioMérieux's syndromic offerings. The names of the products remain unchanged.

3P® RANGE, A NEW DIGITAL AND AUTOMATED OFFER FOR THE PHARMACEUTICAL INDUSTRY

In the highly-regulated field of sterile drug manufacturing, monitoring the production environment is essential. bioMérieux is renewing its diagnostic ranges with a complete and innovative solution that enables the digitalization and automation of environmental control.

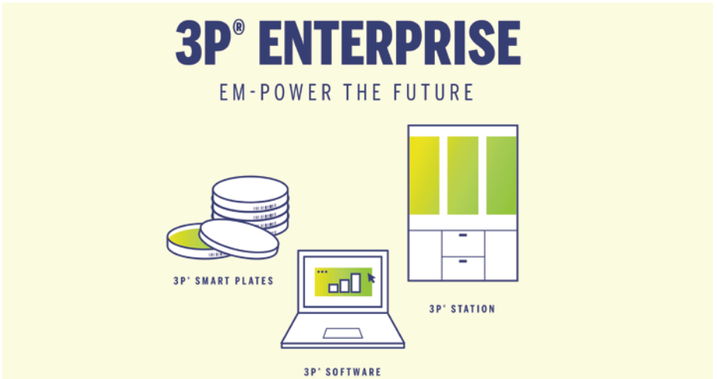
Environmental monitoring in the pharmaceutical industry is used to ensure the absence of contaminating micro-organisms in sterile areas or the cleanliness of non-sterile areas.

This activity involves a lot of handling of Petri plates, which are used for culturing micro-organisms such as bacteria, fungi or yeast. It also requires manual incubation, counting and identification of colonies for several hundred million dishes per year. The digitalization of these workflows will be a challenge for the industrial microbiology sector in the years to come. The culture media plates will remain at the heart of microbiological practice but will be surrounded by a flow of digital information.

Digitalization makes it possible to safeguard each stage by limiting the risk of error. It also increases the intelligence of the tests: thanks to the analysis of computer data, the potential for predicting and/or anticipating the risk of contamination will be developed.

A customized global solution

In 2021, bioMérieux continued the launch of its 3P® range, which began at the end of 2020. This new digital automated offer adapts to the specific context of each production site to guarantee optimal performance and robustness. It is the result of several years of investment and commitment by our teams to support our customers in the pharmaceutical sector in the transformation of their practices.



The 3P® ENTERPRISE range consists of three building blocks that connect with the laboratory information management system (LIMS):

- 3P® SMART plates dedicated to secure and digitalize environmental control, which offer improved quality of culture media;
- the 3P® CONNECT software suite;
- the 3P® STATION incubation and digitized plate reading platform, which is in the final stages of development for a planned launch in 2022.

At bioMérieux, we take our role as a partner to heart by implementing a comprehensive range of services to support our customers in changing their environmental monitoring processes.

Having proven its microbiological performance, our technological innovation reached a major milestone in 2021 with the production of 80% of the volume of 3P® SMART plates used by our customers. These plates have been redesigned to be incubated and read by an electronic device within their lab information system. New features have been added, such as secure lid opening and a side label for scanning.

PREDICTIVE DIAGNOSTICS, AN INNOVATIVE APPROACH IN THE AGRI-FOOD SECTOR

At the crossroads of microbiology, bioinformatics and data science, predictive diagnostics makes it possible to anticipate the risks of contamination. This innovative approach deployed by bioMérieux meets the growing safety and quality needs of the agri-food industry.

FOOD-BORNE DISEASES FACTS*:

200 different types of diseases
600 million people affected per year
420,000 deaths per year

** https://www.who.int/news-room/fact-sheets/detail/food-safety*

Traditionally, our agri-food customers use diagnostic tests to monitor the production environment and product quality throughout the manufacturing process. The challenge is to detect and identify any micro-organisms that are harmful to the safety of the consumer, or that may affect the taste or smell – and therefore the quality – of products.

Since 2020, we have launched a new global, innovative and customized approach to anticipate these contamination risks: predictive diagnostics. This method is in line with the "New Era of Smarter Food Safety" initiative presented by the Food and Drug Administration (FDA) in 2020, laying the foundations for end-to-end food traceability in the food industry.

Our teams work alongside our customers to implement tailor-made solutions in response to their needs. We are moving from a detection/correction logic to a prediction/prevention logic for contamination on production sites.

Predictive diagnostics is based on the mapping of all the micro-organisms (microbiome) present in an industrial unit, through the analysis of data from the entire production chain. This mapping is achieved through a good understanding of the customer's specific needs, and is based on expertise in molecular biology, metagenomics, and predictive computer models. It also requires significant research and development capabilities. By identifying recurring problems, diagnostics helps the industry to make decisions to prevent risks. Already useful for ensuring product and consumer safety, diagnostic testing is also proving to be an effective way of improving the performance of production sites.

OUR PRODUCT LAUNCHES IN 2021

IN THE CLINICAL FIELD

FEBRUARY

CE marking of the **VIDAS® NEPHROCHECK®** test, which detects renal stress in patients and identifies the risk of acute kidney injury (AKI).

MARCH

FDA *De Novo* authorization for the **BIOFIRE® Respiratory Panel 2.1 (RP2.1)**, which is capable of detecting 22 viral and bacterial pathogens, including SARS-CoV-2.

CE marking of **VIDAS® TB-IGRA**, a fully automated test for the diagnosis of latent tuberculosis infections.

APRIL

CE marking of immunoassays **VIDAS® DENGUE NS1 Ag**, **VIDAS® Anti-DENGUE Ig** and **VIDAS® Anti-DENGUE IgG** for the diagnosis of dengue.

CE marking of the new mass spectrometry identification system **VITEK® MS PRIME**, for routine microbial identification in minutes (*see p. 13*).

MAY

CE marking of the new generation of the semi-quantitative serological test **VIDAS® SARS-COV-2 IgG II.** It allows a semi-quantitative interpretation of antibody levels in individuals who have been exposed to SARS-CoV-2.

JUNE

Launch of **EPISEQ® SARS-COV-2**, a software solution to assist laboratories in the identification of SARS-CoV-2 variants from sequencing data.

OCTOBER

CE marking of **NEPHROCLEAR™ CCL14**, to predict persistent severe acute kidney injury (AKI). This test is distributed and marketed in partnership with the American company Baxter.

DECEMBER

Launch of **VIDAS® COVID STIMULATION**, for Research Use Only (RUO), to identify COVID-19 specific T cells after infection or vaccination.

IN THE INDUSTRIAL SECTOR

SEPTEMBER

Launch of the **GENE-UP® NUTRAPLEX™ PRO** test, developed in partnership with HERBALIFE NUTRITION, which simultaneously detects *Escherichia coli*, *Salmonella* spp. and *Staphylococcus aureus* from a single enriched medium and a single PCR test within 24 hours.

DATA ARE REVOLUTIONIZING DIAGNOSTICS

With the increasing automation and digitalization of diagnostic solutions, data management is becoming a major issue in diagnostics. Since the beginning of the COVID-19 pandemic, data have shown their importance in making health decisions at the international, national, local and even individual level.
The development of data science and digital tools will make information more rapidly available to lab professionals and clinicians while facilitating result interpretation. In the wake of these technological and medical innovations, the entire economic model of the *in vitro* diagnostics industry is evolving.
At bioMérieux, optimizing data is a strategic development focus.

Biology is one of the medical specialties that provides the most data. The challenge for the next few years is to collect, compile, consolidate and analyze the data produced by automated systems, and to aggregate them with that generated by laboratories and healthcare systems. One of our priorities is to succeed in transforming massive, often heterogeneous and complex data into information that can be easily interpreted and quickly used by clinicians to improve patient care. The development of mobile applications and digital platforms is a step towards better transmission of information to lab professionals and clinicians.

"IT solutions and associated data should be seen as unique opportunities to improve the quality of diagnostic tests and increase medical value. bioMérieux's strategy is to harness the considerable potential of diagnostic data to support the fight against infectious diseases", explained Pierre Boulud, Chief Operating Officer, Clinical Operations at bioMérieux.

Artificial intelligence (AI) is one of the avenues of innovation in the healthcare field, particularly for medical diagnosis and imaging. It facilitates data processing as well as the calculation of algorithms through machine learning or automatic learning. The *in vitro* diagnostics sector is already experimenting with it successfully. AI technologies are used, for example, in the calculation engines of some of our diagnostic systems, or to speed up genomic sequencing to obtain very precise information on the pathogens suspected of causing the transmission of disease or infection.

In the context of the fight against antibiotic resistance, our ambition is to offer data analysis and decision-making software solutions (Business intelligence), both in the laboratory and outside the laboratory. The ultimate objective is to facilitate the implementation of antimicrobial stewardship (AMS) within health establishments, and on the other hand to help clinicians to prescribe appropriate antibiotics.

In the field of industrial diagnostics, data are also at the heart of innovation. "*We have always provided a lot of information to our customers with our diagnostic instruments. Today, the analysis of data from our solutions, coupled with data generated by our customers' production sites, completely change our approach. We are moving from diagnosing the detection of existing contamination to predictive diagnostics to anticipate contamination before it occurs*", adds Yasha Mitrotti, Executive Vice-President, Industrial Microbiology at bioMérieux.

This is a real departure from the norm. The advent of digital and data in the world of diagnostics are accompanied by a change in the business model – a diagnostic system is not marketed as a software suite – but rather by a change in our business. In both clinical and industrial diagnostics, our teams are being strengthened by integrating new skills in computer science, biomathematics and data science to invent the diagnostics of tomorrow.

BIOMÉRIEUX VISION SUITE, BIOMÉRIEUX'S DIGITAL RESPONSE

BIOMÉRIEUX VISION Suite brings together all the software solutions that translate laboratory and hospital data into relevant and usable information for clinicians. These solutions integrate international standards and put them in perspective with data to provide usable results and reports to microbiologists, physicians, the healthcare facility's AMS committee and national surveillance networks. By providing a comprehensive suite of software solutions and services, BIOMÉRIEUX VISION Suite supports our customers in making the right decisions at the right time, for the benefit of the patient.

Optimizing laboratory workflow
Our MYLA® solution facilitates laboratory workflow while improving efficiency and quality. This software is the central point of microbiological data collection in the laboratory. It provides high-speed communication between the instruments, the laboratory information system (LIS) and clinicians.
At the same time, our VILINK® connected environment allows for remote and preventive maintenance of our instruments and considerably maximizes their availability.

Increasing efficiency through analysis and dashboards
Our MYLA® Lab Analytics solution generates retrospective dashboards for microbiologists. It collects data from the hospital to monitor diagnosis effectiveness, the quality of laboratory results and oversees health economics reports that demonstrate the medical and economic value of diagnostics.

Towards national and international surveillance
Our EPISEQ® platform helps our customers integrate new DNA sequencing technologies (next generation sequencing - NGS). In 2021, bioMérieux launched EPISEQ® SARS-COV-2, which facilitates the identification of SARS-CoV-2 variants.
BIOFIRE® Syndromic Trends and CLARION®, available in the United States, compile epidemiological data that help public health authorities track the emergence and spread of pathogens in real time to adapt global responses.

ARTIFICIAL INTELLIGENCE FOR FUTURE INNOVATIONS

By using data already available from multiple sources (laboratory instruments, patient records), our MYLA® middleware includes an intelligent and customizable engine to track antimicrobial resistance recommendations and offer a selection of antibiotics. The combination of laboratory, patient and pharmacy data will allow us to go further with our CLARION® solution, a clinical decision support software (CDSS) to help clinicians and pharmacists make better use of antibiotics and treatments, based on machine learning and artificial intelligence.

INNOVATION, THE DRIVING FORCE BEHIND OUR RESPONSE TO PUBLIC HEALTH CHALLENGES

In a bold and open-minded spirit, our teams are constantly innovating to improve pathogen detection and identification, the speed of results and data analysis. Our approach is based on a combination of internal R&D programs, international multidisciplinary collaborations with public and private players, and strategic acquisitions that strengthen our offer with new technologies. Flashback to several flagship research projects.

INNOVATION AT BIOMÉRIEUX

14 R&D centers
3 joint research laboratories
93 patent applications in 2021
570 patent families in the portfolio
11.5% of sales reinvested in R&D in 2021

A EUROPEAN PROJECT TO DEMONSTRATE THE VALUE OF DIAGNOSTICS

Launched in 2019, VALUE-Dx is a unique Pan-European project that aims to provide scientific evidence of the medical, technological and economic value of the *in vitro* diagnostics for a more reasonable use of antibiotics. Led by a public-private research consortium of 26 partners, the project is half funded by the European Commission. VALUE-Dx includes two clinical trials, one of which is co-led by bioMérieux, called ADEQUATE (Advanced Diagnostics for Enhanced Quality of Antibiotic prescription in respiratory Tract infections in Emergency rooms). It uses our BIOFIRE® Respiratory 2.1 *plus* and BIOFIRE® Pneumonia panels to demonstrate the impact of syndromic diagnostic tests for the management of severe respiratory infections in the emergency room. The aim of this clinical trial is to enroll 2,500 patients, including 900 children, at 13 hospital sites in Europe.

IMPROVING THE ASSESSMENT OF HEAD INJURIES IN EMERGENCY DEPARTMENTS

This is the objective of the BRAINI project (Blood biomarkers to improve management of mild traumatic BRAIN Injury), coordinated by bioMérieux, and launched under the aegis of EIT-Health* in 2019. In 2021, the recruitment of nearly 1,600 patients was finalized. This clinical study aims to evaluate the performance of an automated immunoassay measuring two specific brain biomarkers released into the bloodstream after a head injury. The aim is to avoid the systematic use of brain medical imaging scans (X-ray scanner - CT Scans) after a mild head injury and to predict the risks of neurological complications.

In 2021, the partners behind BRAINI submitted a complementary project. Its aim is to determine more specifically the performance of biomarkers on the most vulnerable patient populations (children and the elderly, especially patients with neurodegenerative disease). This BRAINI 2 project was also selected for co-funding by the EIT-Health* for a 3-year period and started in January 2022, with the support of new additional partners.

In this research project, we count on the expertise of Banyan Biomarkers®. This American company, which specializes in the development of blood tests to help diagnose head injuries, was acquired by bioMérieux in the summer of 2021.

** European Institute of Innovation and Technology for Health, an independent body co-funded by EIT, a European Union body that supports innovation in health.*

TOWARDS A NEW TEST TO CHARACTERIZE THE IMMUNE RESPONSE

What if, thanks to a simple test, clinicians could identify intensive care patients whose immune system is not able to fight infections and adapt their care and restore a balanced response? This avenue was opened up by the identification of specific biomarkers in the REALISM study which bioMérieux participated in.

In 2021, bioMérieux published a major article in Critical Care Medicine[1] on the results of the REALISM (REAnimation Low Immune Status Markers) project aimed at improving the management of patients admitted to the Intensive Care Unit (ICU) following sepsis, major surgery or severe trauma. This is the first time that a study has been carried out on different populations of patients in intensive care, but whose state of immunity after a severe attack is comparable.

The REALISM research program was undertaken with BIOASTER between 2016 and 2019 by bioMérieux, the École Supérieure de Physique et Chimie Industrielles de la Ville de Paris (ESPCI), GSK and the Hospices Civils de Lyon (HCL). It made it possible to measure various markers to characterize the immune status of these patients in intensive care and follow their immune response over time. On the basis of these results, bioMérieux's objective is to develop a panel of immune status biomarkers (Immune Profiling Panel - IPP) on the BIOFIRE® FILMARRAY® platform to stratify patients and identify those at risk of secondary infections and/or death, with a view to treating them with immunotherapy.

Proof of concept for IPP was achieved in 2020[2]. An observational study funded by EIT-Health is underway to demonstrate the performance of this test in patients with sepsis: IMPACCT (IMmune Profiling of ICU Patients to address Chronic Critical illness and ensure healThy ageing).

ANTIMICROBIAL RESISTANCE: FUNDING TO MEET THE CHALLENGE

9 million euros is the amount of public funding obtained by the ARPEGE project (total budget of 17 million euros over 4 years). Combining preventive, diagnostic, therapeutic and economic approaches for the first time, this consortium aims to provide a multidisciplinary solution to the problem of antimicrobial resistance. Coordinated by the SME Antabio, it brings together bioMérieux, the Hospices Civils de Lyon and Toulouse School of Economics.

1. Fabienne Venet et al. Immune Profiling Demonstrates a Common Immune Signature of Delayed Acquired Immunodeficiency in Patients With Various Etiologies of Severe Injury, Crit Care Med. 2021 Nov 10.
2. Tawfik DM et al. Immune Profiling Panel: A Proof-of-Concept Study of a New Multiplex Molecular Tool to Assess the Immune Status of Critically Ill Patients. J Infect Dis. 2020 Jul 21; 222(Suppl 2):S84-S95.
3. Jonathan Lopez et al. Early nasal type I IFN immunity against SARS-CoV-2 is compromised in patients with autoantibodies against type I IFNs, Journal of Experimental Medicine, august 6, 2021.

OUR R&D TEAMS COMMITTED TO THE FIGHT AGAINST COVID-19

Over the past two years, the COVID-19 pandemic has highlighted our ability to respond quickly and effectively to global health challenges. Thanks to the agility and commitment of our teams, we are able to provide six complementary molecular biology tests and three serological tests measuring the presence of specific antibodies in people who have been infected with the coronavirus. Recent highlights in innovation related to the fight against COVID-19 include:

- In 2021, our range of tests was strengthened by the launch of EPISEQ® SARS-COV-2, a cloud-based software application for epidemiological monitoring of SARS-CoV-2 variants based on sequencing data.
- A study[3] conducted in France, under the aegis of HCL, shows how our BIOFIRE® FILMARRAY® multiplex PCR system could be used to measure type I interferon in nasal samples to help identify patients at risk of transmitting the COVID-19 virus and those at risk of developing a severe form of the disease.
- Based on the model of the VIDAS® TB-IGRA test for the diagnosis of latent tuberculosis infections launched at the beginning of 2021, our research teams have developed a gamma interferon assay after stimulation of whole blood with SARS-CoV-2 specific peptides. This test thus makes it possible to explore the cellular immunity route via T cells, which complements the protection provided by antibodies. The VIDAS® COVID STIMULATION (RUO)** test was made available in mid-December 2021 for research purposes prior to automation on VIDAS® 3 in 2022.

*** Research Use Only.*

CONTROLLING "LIVING" DRUGS QUALITY, A CHALLENGE FOR THE FUTURE

Cellular and gene therapies will revolutionize medicine in the coming decades. These new types of medicines, derived from human genes, tissues or cells from the patient's own body or from a donor, require highly complex quality control. bioMérieux is developing diagnostic solutions that are perfectly adapted to these challenges to guarantee patient safety.

Cell and gene therapies act pharmacologically, immunologically or metabolically to restore, correct or modify physiological functions to treat diseases. They currently represent a very promising option to treat certain diseases and injuries. For the time being, these therapies are reserved for a few rare diseases and certain types of cancer to treat critically ill patients, but the market is developing extremely rapidly.

There are, for example, more than a thousand clinical trials underway targeting different types of cancer around the world. The marketing of treatments for hematological cancers started in 2017 with the first CAR-T therapy. Since then, five new CAR-T therapies have been placed on the market. The flow of R&D in this field is colossal, so much so that these treatments are expected to represent 20% of the value of the global pharmaceutical market within 15 years according to estimates.

The manufacturing of cell and gene therapies is very complex, while releasing the product as quickly as possible is essential for the life of the patient. Quality control throughout the production process is much more demanding and riskier than for traditional drugs, especially as tests must be carried out on very small samples. Furthermore, as these therapies cannot be sterilized, control of the aseptic production environment is even more vital.

bioMérieux, whose offer covers all phases of quality control production, works in partnership with pharmaceutical manufacturers to provide them with diagnostic solutions adapted to these new constraints. The challenge is to reduce microbiological control time by developing automated rapid solutions. They need to be available either close to the patient or at production sites in a new kind of industrial unit.

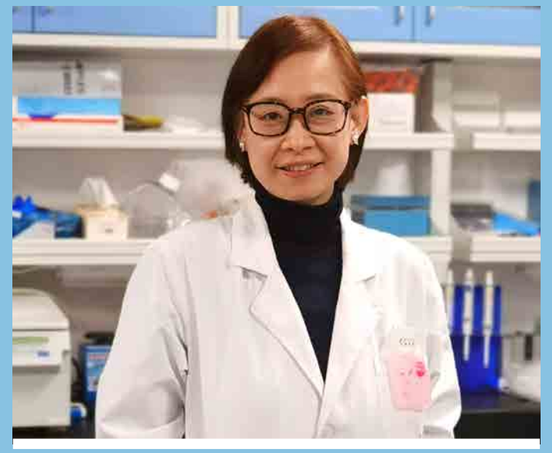
We are developing and adapting existing solutions to control cell quality and the production environment to meet these new scientific challenges:

- 3P® range for production environment monitoring *(see page 19)*.
- BACT/ALERT®, an automated blood culture system for monitoring the risk of bacterial contamination of cell cultures.
- SCANRDI®, a scanning cytometry instrument for rapid drug monitoring.
- BIOFIRE® MYCOPLASMA, an innovative, rapid and very easy-to-use test to detect mycoplasma, bacteria that may be present in biopharmaceutical products.
- ENDOZYME® II GO, for testing the presence of endotoxins (toxins located in the outer membrane of certain Gram-negative bacteria) in injectable drugs.

PROMISING PARTNERSHIP WITH ACCELLIX IN ASIA PACIFIC

Since May 2021, bioMérieux has been the exclusive distributor of Accellix solutions in four countries: China, Japan, Australia and South Korea. This American Israeli company has developed a platform that meets the critical quality control requirements of players in the cell and gene therapy industry. Its technology allows complex tests to be performed to ensure cell quality during the manufacture of the treatment, from initial raw material to final product. It helps laboratories automate their quality control workflow and uncover the true phenotype of the sample while reducing the number of manipulations and the time required to obtain the result.

WHAT OUR RESEARCHERS SAY...



Jill Liang, PhD works in bioMérieux Open Innovation and Partnership (OI&P) team. She is the Laboratory Manager of the Shanghai Children's Medical Center Joint Research Laboratory (China).

Jill Liang began her career in cancer research and joined bioMérieux in 2014 as Laboratory Manager of the Fudan Joint Research Laboratory, in partnership with a cancer hospital. In 2019, this Unit was transferred to Shanghai Children's Medical Center (SCMC) to be dedicated to infectious diseases. Its purpose is to identify and evaluate host and pathogen biomarkers under critical care conditions.

The research team is currently working on the Immune Profiling Panel project to explore the host immune status of critical care patients, including those with severe pneumonia, sepsis, as well as patients undergoing immunotherapy or transplantation. In France, our Joint Research Laboratory with the Hospices Civils de Lyon works on a related topic targeting adult patients.

"Healthcare changes dramatically because of new medical knowledge or new technologies. In such a competitive market, innovation is crucial for bioMérieux to keep up with today's fast-changing healthcare environment and the broadly diverse needs of different healthcare settings. I believe innovation is owned not only by R&D but rather by everyone at every level in the organization. Innovation emerges from collaboration between different kinds of partners, with the aim of building a better world together. I think it is meaningful to identify novel diagnostic tests beneficial for pediatric healthcare and help save lives."

Alice Hellwig, PhD, is a biochemist and Director of the Endotoxin Center of Excellence at bioMérieux in Bernried (Germany)

After 12 years experience in the diagnostics industry for the pharmaceutical sector, Alice Hellwig was appointed General Manager of Hyglos GmbH in 2019. Hyglos is a German company acquired by bioMérieux 3 years before. Since 2020, Alice has been the Director of our Endotoxin Center of Excellence.

This center has a unique and recognized expertise in the development and production of recombinant protein-based reagents used for the detection of endotoxins in pharmaceutical quality control. This site develops the ENDONEXT® range of products using an innovative approach based on a recombinant enzyme. It is an alternative to traditional methods which use the blood of horseshoe crabs.

"The pharmaceutical and diagnostic industries are rapidly evolving. In this context, innovation is key to provide the best possible solutions to support the efficacy of new therapies and to ensure patient safety. This is why innovation is a priority at bioMérieux. For me, it is even more of a mindset. We look beyond what is usual practice and we step out of what is convenient in order to question ourselves: are we doing it this way because it is the best way or because it's the way we are used to? When human health is at stake, we especially need to invest in the future and ensure we are doing everything technically possible to provide the best solutions. bioMérieux provides an excellent environment for innovation and its open-minded culture is extremely supportive of innovation."

“THE ENVIRONMENTAL PROTECTION IS BEING ADDRESSED THROUGHOUT THE ORGANIZATION”

As a world leader in the field of diagnostics, we are aware of the consequences of environmental changes on health. Contributing to the protection of the planet is one of the five pillars of our Corporate Social Responsibility (CSR).

Pierre Charbonnier
Executive Vice-President, Global Quality, Manufacturing & Supply Chain

Why is it important for companies to do what they can for the planet?

No one today can ignore the challenge of protecting the planet! This has become a real concern for all business stakeholders, who have the ability to influence their ecosystem. bioMérieux is one of the leaders in *in vitro* diagnostics; as such, we have a responsibility to set an example. That is why the environment is a pillar of our CSR strategy. This issue is a unifying factor that motivates all our teams. Moreover, many of our employees are also ambassadors for respect for the environment at their workplace and in their daily lives.

How do you implement bioMérieux’s environmental ambition?

The environment has long been a priority at each of our industrial sites, but it’s true that formalizing our CSR ambition has helped us to develop our governance with a strong commitment from the Executive Committee. Several of its members participate in the Health, Safety and Environment Committee at a global level, chaired by Alexandre Mérieux.
We have also set up a Climate Committee and an Eco-design Committee, which validate and monitor the implementation of the roadmaps by involving the major bioMérieux functions that are essential to their deployment. The environmental protection is therefore addressed at all levels of the organization.

How do you translate this environmental commitment into tangible actions?

Our commitment to the environment is reflected in investments and achievements that impact on the way we operate. For example, we have installed photovoltaic panels on many sites to produce cleaner energy, we are developing maritime transport to reduce our carbon impact, and we are developing new, more environment-friendly packaging. We engage our stakeholders in our approach and we are working with our suppliers to involve them in reducing our environmental footprint.
Our objectives are clear and validated by third parties. Our actions have been recognized by several independent players *(see page 54)*.

OUR TARGETS VALIDATED BY INDEPENDENT EXPERTS

In October 2021, bioMérieux had its CO_2 emission reduction targets approved by the Science Based Targets initiative (SBTi) as consistent with the levels required to meet the Paris Agreement. This means that our targets for greenhouse gas emissions from our operations (Scopes 1 and 2) are in line with the reductions needed to keep global warming to 1.5 °C. It also demonstrates that our actions to engage our external partners (Scope 3) in the process are consistent with SBTi’s expectations.

OUR COMMITMENTS TO PROTECT THE PLANET

The eco-responsible actions we are taking aim to reduce the footprint of our activity on the planet and make our living environment healthier. Our environmental objectives focus on the following three pillars:

- Align with a decarbonization trajectory consistent with the Paris Agreement to combat global warming, reducing our carbon footprint from energy use by 50% by 2030*.
- Promote eco-design and optimize the life cycle of our products.
- Reduce our environmental footprint by 2025** by reducing waste (-50%), by recycling waste (85%), by reducing our water (-45%) and energy consumption (-50%).

** In comparison with 2019. ** Data related to turnover, compared to 2015.*

TEAM MEMBERS MADE AWARE OF CLIMATE ISSUES

Fun and collaborative! The Climate Fresk is an initiative supported by the association of the same name. It consists of a workshop to raise awareness of global warming.
The principle? To find cause and effect links between themes linked to the environmental crisis to understand the essential issues of climate change, to become aware of the central role of human beings in these issues and to take action.
This tool is gradually being deployed within bioMérieux. It allows us to create a common culture in which we can rely on to think concretely about how we can act and contribute to mitigating climate change.

“The Climate Fresk is a very good tool to initiate discussion on what we can do personally or at work to reduce our carbon footprint. Our goal is to involve the 500 Supply Chain team members in the 40 countries where they are present by the end of 2022 because their decisions, and in particular the method used to transport goods, have a direct impact on bioMérieux’s CO_2 emissions.”

Anaïs Brau
Microbiology Supply Chain Category Manager, trained to lead Climate Fresk workshops.

80% OF OUR MAIN INDUSTRIAL SITES ARE ISO 14001 CERTIFIED

In 2021, the sites at Durham, Lombard and St. Louis in the United States achieved initial certification of their environmental management systems. This was already achieved for our seven sites in France as well as our sites in Spain (Tres Cantos) and Italy (Florence).

Every year, volunteer teams take part in World Cleanup Day, an event organized by the NGO Let’s do it World. This operation aims to fight pollution by engaging citizens in clean-ups. In the photo, bioMérieux employees in Greece contributed to the clean up of the Parnitha forest, located near Athens.

20%

This is the share of electricity produced and used by the La Balme site (France) thanks to the 5,000 m^2 of photovoltaic panels installed on the site.

ECO-DESIGN TO REDUCE OUR ENVIRONMENTAL IMPACT

bioMérieux is committed to a cross-cutting eco-design approach. The principle? Involve all of the company's functions to optimize the life cycle of products and thus reduce their impact on the environment.

Applicable to new projects as well as to products already on the market, eco-design is carried out at the highest level of the organization, as part of our CSR strategy. Some 30 representatives cover the Company's main functions in our various regions, both for clinical and industrial activities, to guarantee and monitor the implementation of action plans.
A procedure has been established to integrate eco-design into all new product developments. In addition, we have set up a training program to raise awareness of this approach among all our team members.

Our current actions focus on different areas:

- packaging and logistics: use of recycled and recyclable bubble wrap, replacement of plastic adhesive with paper adhesive, reduction of packaging sizes…;
- product shelf life: stability studies to extend shelf life to be consistent with shipping time;
- product preservation: studies to extend the possible non-refrigeration time without impacting on their effectiveness to facilitate their transport and limit the use of ice packs and polystyrene;
- the electricity consumption of systems: development of a standby feature for certain appliances;
- using local suppliers, to reduce the environmental impact of material sourcing.

Our eco-design initiatives and progress also generate a direct benefit for our customers: by providing them with systems that consume less energy and products that are easier to use and require less packaging. The entire value chain is benefiting.

VIDAS®, PILOT RANGE OF AN ECO-DESIGNED PACKAGING PROJECT

In 2021, our teams have actively planned to replace white cardboard boxes with brown cardboard boxes in the VIDAS® reagent production line from the beginning of 2022. Thanks to this eco-packaging, wood fibers no longer need to be chemically bleached or coated with pigments. Solvent-based inks are replaced by water-based inks, and the varnish is removed. In addition, the packaging is optimized: by reducing the thickness and size of the flaps, 36 tons of cardboard will be saved per year. These brown boxes will be extended to other ranges.

4,000

This is the number of over-packed parcels saved in France in 2021 by replacing individually refrigerated boxes with refrigerated transportation. This represents a saving of approximately 17 tons of cold packs, 21 tons of dry ice and 2 tons of expanded polystyrene. These are all products that are not manufactured, not transported and, therefore, avoid waste. The impact on our customers is immediate, with an average reduction of 4kg of waste per delivery, without any change in the delivery.

THE SUPPLY CHAIN MOBILIZED TO REDUCE OUR CARBON FOOTPRINT

Deliveries of raw materials and consumables to our sites, transport of products from our factories to our warehouses and end customers… transport represents between 15 and 20% of our CO_2 emissions. bioMérieux Supply Chain teams around the world are implementing initiatives to reduce the environmental impact.

The way we choose to transport our goods is crucial to the environment. The impact of air transport accounts for 85% of the carbon footprint associated with the transport of our finished products. This is why alternative solutions such as sea freight, which emits 10 times less CO_2, have become one of the priorities of our Supply Chain.

Although in the context of a health crisis air transport is the most efficient way to deliver products in an emergency, our teams have managed to open new sea routes, including a major one via the Atlantic Ocean to export the BIOFIRE® range of solutions manufactured in the US.

Carbon impact is now an essential decision criterion when launching new projects or managing existing ones with the aim of minimizing CO_2 emissions. The Supply Chain studies and leads logistics network projects integrating this dimension in all regions, and it is also closely involved in our actions in terms of eco-design. In the next few years, we hope to eliminate certain technical constraints on our finished products to make them eligible for maritime transport and thus reduce the need for air transport. These efforts include, for example, increasing the shelf life of products and cold chain management (*see opposite*).

At the same time, each local logistics team has a project to reduce the carbon footprint, in proportion to the size of the sites. These considerations contribute to the cultural transformation and commitment of our teams.

45%

of the transport of our finished products from our production sites to our subsidiaries was by sea in 2021, compared to almost 0% in 2015.
For our reagents transported to our subsidiaries in 2021, switching from air freight to maritime transport means approximatively 55,000 tons of CO_2 avoided.

NEW SENSORS FOR GREENER TRANSPORTATION

Temperature control is crucial to preserving the quality of diagnostic tests during delivery. We have implemented new temperature sensor technology on our worldwide shipments from France and the US. This state-of-the-art equipment, developed by the Finnish start-up Logmore, offers considerable time and energy savings. Very easy to use and delivering data in less than 10 seconds, these sensors have reduced the workload of the Quality teams by 25%. Most importantly, they are four times lighter than other sensors on the market and reusable, saving the equivalent of 2,000 smartphones per year in electronic components.

In France, in 2021, we commissioned a specially designed shuttle for the daily transport of refrigerated products between our sites in Marcy-l'Étoile and Craponne in the Lyon region. This shuttle, operated by our service provider TFMO, consists of a low CO_2 emission tractor and a refrigerated trailer powered by a 100% electric motor.

TEAM MEMBERS' HEALTH AND WELL-BEING ARE AT THE CORE OF OUR PRIORITIES

We focus on the safety and security of our teams in all aspects of work while promoting their physical and psychological health, and well-being. This is even more important given that the COVID-19 pandemic disrupted our ways of working, social interactions and travel habits.

To support our teams, we initiated work-from-home policies during the most critical periods of the COVID-19 pandemic, which evolved into a global hybrid working guideline. These new rules focus on enhancing team member engagement through in-person and digital collaboration while encouraging flexibility and healthy work-life integration. We anticipate that this global guideline will help reinforce a culture of trust and develop team members' adaptability.

Our leadership teams implemented global and regional COVID-19 crisis taskforces to monitor situations as a part of our commitment to protecting the health of our team members and keeping them regularly informed. Of course we supplied Personal Protective Equipment (PPE) such as masks and gloves to support teams as they performed essential duties on-site and in the field at hospitals and laboratories.

COVID-19 had an impact, not only physically on our society, but also psychologically. Therefore, we established external partnerships with specialized providers like Health Advocate in the US and Eutelmed in other countries. These platforms allow team members and their families to have on-demand access to psychologists and psychological assistance through free consultations. Internally, we provided free educational workshops and sessions focused on topics such as "Work/Life Balance", "Remote Working & Communication", "Time Management" and "Yoga & Mindfulness". Moreover, many practical exercises (meditation, breathing techniques, yoga, stretching, etc.) are provided to all team members through an internal digital portal.

The pandemic continues to impact our work environment, but we remain focused on ensuring our teams' health and well-being. We are grateful for our team members' resilience and recognize the key role they play daily in improving public health worldwide.

"The pandemic has impacted each of us in some way. We recognized that many of our team members were feeling isolated or were facing difficulties with remote work. We made a point to think about the psychological impacts and show that it is 'ok to not be ok.' Our aim is to continuously help our team members focus on their psycho-social well-being and support them through this critical period and beyond."

Tamela Smith
Vice-President, Employee Engagement

OUR PEOPLE FOCUS RECOGNIZED WORLDWIDE

The excellence of our Human Resources processes and the importance we put on our team members' well-being at work have been recognized with renowned certifications and awards.
This is a testament to our human-centered culture and strengthens bioMérieux's attractiveness to candidates.

- In 2021, again, we received **Top Employer** certifications in all the countries where we applied. bioMérieux is now certified in 13 countries (Belgium, Brazil, China, Egypt, France, Germany, Italy, Ivory Coast, Kenya, Poland, South Africa, Spain and the United States) and 2 regions (Africa and Europe).
- With the certifications earned by Argentina, Chile and Colombia, and the renewed ones in Brazil and Mexico, the entire Latin America region is now certified **Great Place To Work®**.
- In France, we won the **Humpact 2021 Grand Prize** in the "People with Disabilities" category. This award is delivered by the extra-financial rating agency Humpact and recognizes our work in favor of inclusion and our socially responsible practices.

DIVERSITY AND INCLUSION

At bioMérieux, we value the differences of our team members, our partners and our customers. We are committed to creating a culture where all feel respected, supported and included.
We aim to raise awareness of diversity among our team members and managers, which is considered as an economic performance driver. Actions that support this vision consider the characteristics of the countries in which the Company operates and implements processes to measure changes in this area.

Gender and international diversity in leadership are two of our main inclusion focus areas. The aim is to increase the opportunity for everyone and create more equity in our workplace. In addition, the employment of people with disabilities is one of our priorities. Policies and programs are implemented in all our countries based on local regulations. For example, in 2021 the US Diversity Taskforce sponsored a virtual "Safe Space" intended to support team members with disabilities.
In France – where more than 30% of our team members work – the employment rate of people with disabilities is constantly rising and exceeds the legal minimum of 6% required.

MAKING EACH TEAM MEMBER A STAKEHOLDER IN HIS OR HER OWN SAFETY

bioMérieux is committed to ensuring the health and safety of its team members and their quality of life at work on a daily basis. Our challenge is to reduce work-related injuries at all our sites and subsidiaries. Our levers for action: compliance with safety rules, prevention and team involvement.

Having achieved and exceeded our Health Safety Environment (HSE) objectives formalized in our 2020 Vision, we have set ourselves new ambitious objectives by 2025:

- a 50% reduction in the lost-time accident frequency rate compared to 2020, i.e., a rate of less than or equal to 0.6;
- a 50% decrease in the frequency rate of total recordable accidents at work (with and without lost time) compared to 2020, i.e., a rate less than or equal to 1.2.

In 2021, the lost-time accident frequency rate was 1.3 and the total recordable accident frequency rate was 2.6.

To achieve our 2025 objectives, we are deploying a new approach aimed at making each team member a key player in his or her own safety, with the support of their line manager. This approach is supported by a training program for bioMérieux sites and department managers, entitled "HSE Leadership", and conducted in partnership with the Global Executive Education Club (CEDEP). It aims to raise awareness of the human factor in prevention and to deploy an inclusive health and safety culture at all levels of the company.

More broadly, training is a key part of our HSE strategy. Several programs have been set up for all our team members:

- safety leadership training for managers;
- health and safety training for each newcomer, tailored to their activity and workstation;
- professional authorizations for the team members concerned (electrician, klift operator, hot work operations, working at heights);
- HSE and ISO 14001/ISO 45001 internal auditor training;
- training courses on specific topics (transport of dangerous goods, biological risk, chemical risk, muscular warm-ups before physical activities, second intervention team member, First Aid at work, etc.);
- car safety training for team members who have to travel to our customers by car.

A MOBILE APP TO PREVENT ACCIDENTS

Since 2021, an app dedicated to safety has been available to team members on their work mobile phone. As part of the "NearMiss" system (feedback on dangerous situations and conditions), they are encouraged to report directly on this app any event that could lead to an accident or environmental damage.

PROMOTING ERGONOMICS AT WORK

In France, a webinar on office ergonomics and safety was organized in 2021, followed by a presentation on-site. bioMérieux has also made a commitment to contribute financially to the purchase of ergonomic office chairs to improve the teleworking conditions of French team members.

A KEY CERTIFICATION FOR OUR SITES

80% of our industrial sites are ISO 45001 certified. This standard certifies that we comply with the requirements of an occupational health and safety management system. In 2021, the Durham, Lombard and St. Louis sites in the US achieved initial ISO 45001 certification.

ATTRACTING AND RETAINING TALENT

Because our industry is competitive and candidates' aspirations are changing, talent management is an essential part of our Human Resources policy. bioMérieux designs and implements measures to encourage new talent to join us and to allow our team members to develop their professional lives.

Joining bioMérieux means choosing an innovative company with an international dimension, committed to public health and driven by a human-centered culture. To promote our values and our business, we develop targeted employer branding campaigns. This includes, for example, close links with the major schools and universities to bring us closer to young people before they enter the job market, and also to their former graduates.

Once the talents have been integrated into our teams, we encourage their growth and development through training and internal mobility. As part of a continuous improvement approach, we decided to upgrade our performance and development management system in 2021 – progressively from 2022 onwards – whose objectives are to develop a culture of feedback, to evaluate performance and to increase the frequency of exchanges between team member and manager.

The commitment of our teams is central to our approach. To gather their feelings and expectations about their professional life at bioMérieux, we conducted several surveys in 2021, which were translated into action plans. In France, various themes were addressed, such as parenthood, HR communication, new recruits, gender equality and quality of life at work. In the United States and Asia Pacific, the surveys focused on team members commitment and led to discussion groups on the topics identified.

417

interns and work-study students were welcomed worldwide in 2021. We take our role in training young people to heart and have continued to support them despite the COVID-19 situation.

NEW EMPLOYEE SHARE OWNERSHIP PLAN

To involve team members in bioMérieux's performance, a global employee share ownership plan was launched in May 2021. It follows on from the highly successful plan launched in 2019. All eligible employees residing in countries that allow this scheme were able to purchase existing bioMérieux shares at a discounted market price of the share and receive a matching contribution. As a result, more than 49% of eligible team members subscribed.

BIOMÉRIEUX, BEST EMPLOYER ACCORDING TO OUR TEAM MEMBERS

We were awarded first place in the Glassdoor Best Employers 2022 in France. This award testifies to the commitment of our team members to bioMérieux as the selection of the winning companies is based exclusively on the opinions shared spontaneously and anonymously by employees on the collaborative website Glassdoor, which specializes in job searches.

A WEBSITE FOR NEWCOMERS TO FRANCE

We have created a website dedicated to new team members to facilitate their integration. They can find details of their integration process, information on our corporate culture and useful HR information when they take up their position.

OUR SELF-HELP PLATFORM IS EXPANDING

Launched in 2018, our platform "Enjoy & Share" has been expanded in 2021 to include a module called "Mutual Aid".
It connects employees who live close to each other to exchange services. In addition, employees can take advantage of the following features: classified ads, language exchanges for children of employees, exchange of accommodation for holidays.

PROMOTING SKILLS DEVELOPMENT THROUGH TRAINING

We are committed to the development of our team members, particularly through training. Our Learning and Development Department supports them by offering the benefit of a rich training catalogue. It also develops tailor-made programs to meet the needs of the various business lines on our sites and in our subsidiaries in close partnership with Mérieux Universté, the Corporate University of Institut Mérieux.
We are also developing the use of digital tools to facilitate access to training. The entire bioMérieux training catalogue is available online, via our intranet, anywhere in the world; on the same platform, our team members can access e-learning modules, virtual classes, videos and other educational content, or register for face-to-face sessions.

HEALTH E-LEARNING FOR ALL

All team members have access to training and videos to develop their medical knowledge on key health topics. In 2021, the Training and Medical Education Department within Global Medical Affairs, in close collaboration with the medical advisors, has developed 11 training courses that can be accessed online.
The topics mainly cover strategic pathologies/diagnostic methods for bioMérieux: AMR/AMS, blood culture, sepsis, acute kidney injury, procalcitonin, tuberculosis and dengue. Other more general training courses are also available: introduction to Medical Affairs, the basics of Evidence-based medicine (EBM) and Scientific Literature Review, Health Economics and Outcomes Research (HEOR) and Global Point Prevalence Survey (Global-PPS – *see page 15*).

NEW ACADEMIES

After the Supply Chain Academy and the Finance Academy, new career paths were launched: the Customer Service Academy for the Customer Service teams was launched in 2021; the R&D Academy, launched in 2021, will be deployed in 2022, as well as the Sales Academy, for the Sales teams in the fields of clinical and industrial operations.
These tailor-made development routes are designed in consultation with the various functions, on a global scale. The aim is to develop the skills of the team members in the function concerned and thus increase collective performance.

PRIORITY IS GIVEN TO INTERNAL MOBILITY

bioMérieux provides conditions conducive to the development and internal mobility of its teams, in particular through training and specific support plans. For example, in 2021, over 7% of team members were promoted internally.

IN 2021:

233,476 hours of training
19 hours of training on average per employee
93% training completion rate

MÉRIEUX UNIVERSITÉ, THE CORPORATE UNIVERSITY OF INSTITUT MÉRIEUX

The Corporate University disseminates the values and managerial culture of our Group to all employees of its various companies. Mérieux Université develops and delivers cross-functional training in management and leadership, behavioral skills, and also offers individual and team coaching. bioMérieux represents a very large part of its activity.

In 2021, two-thirds of Mérieux Université synchronous training courses were conducted remotely. Moreover, thanks to partnerships with leading digital platforms such as Coursera, CrossKnowledge, CornerStone as well as GameLearn, the e-learning offer has been considerably enriched and has been widely acclaimed. Nearly 2,900 days of training were completed in this way.

Fit for the Future is one of Mérieux Université flagship programs. This training has taken place every year since 2014. In 2021, it brought together 36 talents from bioMérieux, Mérieux NutriSciences, ABL and Transgene over a period of 6 months.

The program, led by Mérieux Université and the Global Executive Education Club (CEDEP), allows to:

- reflect and work on the Group's future challenges;
- develop soft skills necessary to make decisions in a complex environment;
- learning to manage emotional intelligence;
- strengthen customer centricity.

Participants work in small groups on a strategic project. They are coached by a Global Leader and present their work to the Executive Committee at the end of the program.

#KEEPLEARNING, AN *À LA CARTE* PROGRAM

Launched in 2020, #KeepLearning is a global, common and cross-functional initiative, open to all Institut Mérieux entities. It offers everyone the opportunity to take part in a continuous learning process on topical and inspirational subjects related to the professional world, through various digital channels (videos, webinars, etc.). Six sessions were organized in 2021 on the following topics: AMR/AMS, give constructive feedback, remote communication, agile mindset, decide in uncertainty, hard conversations.

**"It is an opportunity for bioMérieux team members and managers to benefit from Mérieux University's programs: the training, coaching and team support offered throughout the world reflect the values of Institut Mérieux Group.
These are all opportunities to share with colleagues from other Group entities and thus strengthen the feeling of belonging while developing their skills."**

Amandine Leterrier
Vice-President Learning & Development

5,961
days of training (excluding e-learning) were provided by Mérieux Université for bioMérieux in 2021

“IT IS ABSOLUTELY ESSENTIAL THAT CHARITIES WORK WITH COMMERCIAL ORGANIZATIONS”

Healthcare companies and patient organizations have much to share in their efforts to advance health. In 2021, we initiated a collaboration with The UK Sepsis Trust, an internationally renowned charity committed to fight against sepsis and improve outcomes for sepsis survivors. Mark Miller and Ron Daniels share their views on the importance of such a partnership and their expectations.

Mark Miller
Executive Vice-President,
Chief Medical Officer at bioMérieux

Ron Daniels
BEM, Chief Executive and Founder of
The UK Sepsis Trust

Why did bioMérieux decide to set up dialogue and joint actions with patients?

Mark Miller: Patients are at the heart of our activities since they are the beneficiaries of our products and innovative solutions. Therefore, it makes sense to include them in our decision-making. This is an industry-wide trend in healthcare to assimilate the patients’ insights into certain internal strategic activities in order to increase the beneficial impact on their health.

Ron Daniels: It is absolutely essential that charities work with commercial organizations like bioMérieux to design clinical systems and healthcare solutions. Most importantly, it ensures healthcare is delivered in the right way at the right time with the patient at its focus.

What does bioMérieux expect from patients? And vice versa?

MM: We can benefit mutually in 3 ways: sensitization of patients to the importance of “diagnostics” in their healthcare, sharing of patients’ insights internally to improve our products and solutions, and sensitization of all bioMérieux employees to the positive impact of their work on patients’ health in concrete terms.

RD: The UK Sepsis Trust is very proud to be working with bioMérieux. It is a two-way street where each part listens to the other and understands the other’s needs. And through an effective true partnership like this, then we can drive progress.

What are bioMérieux and The UK Sepsis Trust working on together?

MM: Specifically related to sepsis, we were very busy in 2021. We jointly commissioned a survey to measure the perception and beliefs of European citizens on Antimicrobial Resistance (AMR), sepsis and the value of diagnostics.

RD: This was the first time a study on a such scale had been done across 5 European countries. It provided us with some fascinating learning about awareness and attitudes to sepsis, AMR and *in vitro* diagnostics. Now that we have that knowledge we can track progress over time by repeated surveys. We can also use it to design strategic directions for our campaigns to heighten public awareness. And we are now going to move forward to the policy level to try and influence governments to do more.

MOVING FORWARD WITH PATIENTS

In September 2020, bioMérieux launched a global initiative to enhance patient value with a double objective: raising awareness of the role of *in vitro* diagnostics among patient organizations; including and valuing patient experience in our ongoing endeavors to develop innovative solutions.

Caring about patients has been in bioMérieux’s DNA since its founding. Today, the voice of patients and their associations is becoming more and more important, supported by legislation that strengthens their rights worldwide and by digital technologies that make their communication easier.

This extremely supportive context invites us to work even more for and with patients and their representatives as well through three main pillars:

- developing educational collaborations with patient associations on the role of *in vitro* diagnostics in countries where we are present;
- involving patients in the definition of bioMérieux’s product development process and innovation strategy;
- highlighting the voice of the patients in our internal and external communications, and keeping bioMérieux team members informed about what we do with and for patients.

In 2021, we established several partnerships with patient organizations to support joint actions.

- Sepsis Alliance: creation of a digital platform aimed at connecting sepsis survivors with resources and a healthcare community.
- The UK Sepsis Trust: conducting a European survey about the knowledge of *in vitro* diagnostics, antibiotic resistance and sepsis *(see page 13)*.
- Instituto Latino Americano de Sepse – ILAS: creation of the project “*Rehabilita Sepse*”, a dedicated website for the clinic sepsis diagnosis and support for the long-term care of sepsis survivors.
- France Sepsis Association: supporting the creation of the French chapter of the Global Sepsis Alliance through various actions (support in building the association’s website, production of an educational video on sepsis, making of a documentary on sepsis for a specialized channel in Morocco).
- Health First Europe: active support of the creation of the first pan-European patient group against antimicrobial resistance, coordinated by Health First Europe.

A PATIENT VALUE CHARTER TO GUARANTEE OUR ETHICS

To ensure that our interactions with patient organizations are consistent with our high ethical standards, all team members interacting with patients and patient organizations commit to respect our charter.
This includes the following core principles:

- Clarity of purpose
- Respect for laws, regulations and bioMérieux policies and procedures
- Integrity and respect
- Independence
- Transparency
- Fair and balanced information
- Confidentiality

This patient value charter is freely available on our corporate website
https://www.biomerieux.com/corp/en/our-responsibility/healthcare-ecosystem/patient-relations.html

(RE)COMMUNICATING THE VALUE OF *IN VITRO* DIAGNOSTICS TO DECISION MAKERS

While 70%[1] of medical decisions are based on the results of *in vitro* diagnostic tests, *in vitro* diagnostics has long remained a shadowy part of medicine. Even if the situation has now largely progressed, it is still essential to lobby health authorities to recognize the value of diagnostics, both to improve care and control health expenditure.
The Public and Government Affairs function was created at bioMérieux three years ago. Working closely with government decision makers, its mission is to recognize both the economic and medical value for *in vitro* diagnostics on key topics such as diagnostic innovation and antibiotic resistance. Our Public and Government Affairs Charter describes this function's missions and commitments to ensure fairness and transparency in our exchanges with public authorities.

OUR COMMITMENTS TO THE PROFESSION

bioMérieux is very active in professional healthcare organizations. For example, we are a member of MedTech Europe, the European association of the medical technology industry (medical devices and *in vitro* diagnostics) and of SIDIV, in France, the French *in vitro* diagnostic industry association. In this regard, we are interacting with the healthcare ecosystem and working to influence change on important issues such as the new European regulation on CE marking IVDR *(see below)* and the overhaul of the RIHN*, to simplify and accelerate the entry of innovative products onto the French market.

** French acronym to designate the list of innovative procedures not classified for reimbursement purposes.*

IVDR*: A NEW REGULATION IN EUROPE

The new European regulation governing the CE marking of *in vitro* diagnostic medical devices aims to ensure the smooth operation of the European market for these products and to provide a high level of health protection for patients and users. It also sets high quality and safety standards for these devices. The regulation will come into force in May 2022.

The number of so-called "self-certified" devices will decrease, and manufacturers will have to rely increasingly on the help of notified bodies to obtain the CE marking for their products according to this new regulation. The GMED, with whom we have been working for a long time, is our notified body. Our IVDR certification process was launched in 2021 with the submission of numerous references representative of our entire portfolio of *in vitro* diagnostic devices. After obtaining our first IVDR certification, bioMérieux will proceed with a series of successive submissions to ensure the compliance of all its products.

bioMérieux teams are committed to following the requirements set out in this regulation to ensure that all our products are available on the market.

Our subsidiaries BioFire and Astute Medical are also working on their plans for transition to IVDR with the notified body BSI.

Recently, Europe has taken legislative measures to progressively roll out this new regulatory framework to ensure that the market is supplied with the current range of diagnostic devices. The industry, in particular MedTech Europe, a professional organization in which bioMérieux is heavily involved, welcomes this decision. Nevertheless, they consider it essential that regulators address the critical issues of bringing innovative solutions to market and setting up the necessary infrastructure to obtain the new certification.

** In Vitro Diagnostic Medical Device Regulation (EU) 2017/746.*

PARTNERSHIP IN FRANCE WITH TOULOUSE SCHOOL OF ECONOMICS (TSE)

Since the end of 2020, we have been supporting TSE, one of the most prestigious business schools in the world to encourage and promote basic and applied research on emerging issues in the field of health economics. This research focuses on the following two themes:

- antimicrobial resistance and the market failure to innovate in antibiotics and health-related products;
- economic evaluation of the value of innovative diagnostic technologies.

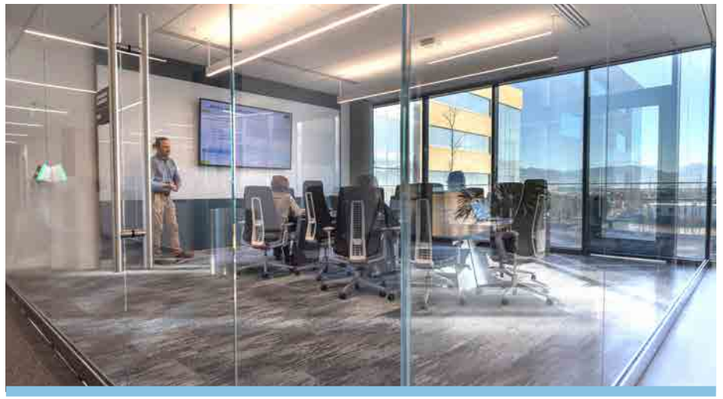
In addition to this partnership, Alexandre Mérieux, bioMérieux's Chairman and CEO, attended the Summit of the Common Good organized on May 27 and 28, 2021 by TSE and Challenges magazine. He spoke at a round table on the financing of innovations in health and the common good.

100%
of our General Managers will have undergone specific Public Affairs training by 2022. Launched at the end of 2021, this training aims to equip them with the knowledge needed to engage in ethical and transparent dialogue with their local authorities.

1. The Lewin Group: "The value of diagnostics, innovation, adoption and dissemination into health care", 2005. This figure refers to all diagnostic tools: in vitro diagnostic tests and medical imaging examinations.

WORKING ETHICALLY

At bioMérieux, we apply internal rules and procedures to protect ourselves from the risks associated with international business and to provide employees with the necessary tools to manage these risks. We are also taking steps to secure our network of partners around the world.



Our Ethics and Compliance program reminds us that business must be conducted in compliance with laws and regulations, as well as with bioMérieux's values and culture. Training team members in business ethics is a key element of this program, as part of a risk prevention approach.

In 2021, ethics and compliance priorities focused on:

- strengthening the prevention of corruption and bribery, in line with the new requirements of the Sapin II law;
- securing our distribution network and other intermediaries;
- relations with health professionals;
- export regulations;
- the European General Data Protection Regulation (GDPR).

85 team members worldwide are personal data protection representatives

87.5% average completion rate of data protection training in 2021

RISK ASSESSMENT WITH TEAM MEMBERS

In accordance with the requirements of the Sapin II law in force in France, we assess the risks associated with our business in relation to corruption and bribery.
In this regard, in 2021 we conducted a survey among all team members to improve their level of knowledge of ethics and compliance rules. The results were used to develop an action plan that will be implemented over the next three years.

CREATION OF A TRADE COMPLIANCE DEPARTMENT

To optimize our processes, the compliance management of our import-export activity is now handled by a single department, as opposed to two previously. The Trade Compliance Department, integrated into the Ethics and Compliance Department, is responsible for establishing, promoting and monitoring import and export regulations in accordance with international laws and our Code of Conduct.

PERSONAL DATA MANAGEMENT

In the course of our business, we manage several groups of people for whom we process personal data: employees, patients, as well as the administrative data of our customers, suppliers, distributors and partner healthcare professionals. As part of our personal data management program, we appointed a Data Privacy Officer in the United States, in 2021, responsible for addressing new regulations in certain States. Our employee data protection policy has been updated and distributed in a document translated into 16 languages. We have also implemented a new module for managing access rights to personal data allowing all our stakeholders to retrieve requests for the right to rectify, modify and be forgotten.

CUSTOMER SATISFACTION OVER 96%

Within our healthcare ecosystem, our customers play a key role, and the quality of the customer relationship is paramount. Despite the COVID-19 pandemic, our teams have remained focused on our customers, both in person and remotely, to ensure continuity of service. These efforts have been rewarded with a very high satisfaction rate.

DIALOGUE WITH OUR KEY INDUSTRIAL ACCOUNTS

bioMérieux provides a permanent dialogue with its customers to discuss changes and challenges in their markets. In 2021, for example, the Industry teams organized two major symposiums with their strategic key accounts: the first on the theme of sustainable development in the agri-food sector, the second on major topics of interest to the pharmaceutical industry, namely SARS-CoV-2 and gene and cell therapies.

With a view to transparency and a desire for continuous improvement, in 2021 we conducted a satisfaction survey among our clinical and industrial customers. This survey reflects our focus on customers, from measuring satisfaction to translating it into collective action on a daily basis: developing our diagnostic solutions, managing our customer service and supply chain, and being transparent and responsible in our communications.
The survey, conducted from April to August among 5,700 customers in 43 countries, revealed a satisfaction rate of 96.7%. This figure is up by more than two points compared to the survey conducted in 2018.

On the other hand, the Net Promoter Score (NPS)*, which measures the recommendation rate of our customers and is directly associated with their loyalty, stood at 47, up four points compared to 2018. This means that our customers are recommending bioMérieux solutions.

These results are a testament to our excellent customer focus. Indeed, our customer-facing employees (Sales, Marketing, Customer Service, Logistics) work closely with all internal departments (Production, Quality, Finance…) to improve the experience of acquiring and using our solutions on a daily basis. This cross-functional, customer-focused approach enabled us to ensure continuity of service in 2021 despite the constraints of the health situation, while at the same time ensuring numerous product launches and innovating in our training and remote support solutions, regardless of the pandemic situation in all countries where we operate.

** NPS = % promoters - % detractors.*

WHAT OUR CUSTOMERS SAY…

UNIVERSITY GENERAL HOSPITAL OF HERAKLION (GREECE)

This 750-bed Medical Center is the largest hospital facility in Crete and one of the largest public hospitals in the country. It provides secondary and tertiary healthcare in a wide range of clinical specialties, diagnostic and laboratory tests.

This hospital is equipped with a complete bioMérieux range of solutions including antibiotic sensibility testing (AST), identification and blood culture systems, syndromic testing and a data management system. The latest installation is the fully automated BACT/ALERT® VIRTUO® system, in 2021, to provide rapid results and improve septic patient management.

“bioMérieux provides comprehensive diagnostic platforms tailored to the everyday needs of a reference clinical microbiology lab, in a cost-effective way. Thanks to our partnership, we participate in research projects and clinical protocols to evaluate the impact of new diagnostic technologies on infection control, antimicrobial stewardship and patient care. This will strengthen the value of diagnostics and answer medical needs in our institution.”

Professor Georgios Chamilos,
Head of Clinical Microbiology Lab

ISIGNY SAINTE-MÈRE (FRANCE)

Isigny Sainte-Mère is an independent dairy cooperative founded in 1909 in Normandy, France. It markets more than 100 products (butters, creams, cheeses, baby milk…) that are sold all over the world through traditional outlets like hypermarkets and supermarkets, as well as high street bakeries or patisseries.

For over 20 years, bioMérieux has been working with this French cooperative to ensure the safety and hygiene of their dairy products. Isigny Sainte-Mère recently asked us to improve the detection of *Cronobacter* with GENE-UP® and in less than a year, we were able to release a new more robust and more efficient test that did not exist on the market.

“To me, the relationship with bioMérieux can be defined as a win-win partnership where bioMérieux brings its expertise. It is important to build more than just a supplier-customer relationship in order to be able to create something new that will serve the public interest. We both are people-oriented. Working together to ensure the well-being of so many people is something really satisfying.”

Daniel Delahaye,
CEO, Isigny Sainte-Mère

SUPPORTING PEOPLE MADE VULNERABLE DUE TO THE HEALTH CRISIS

In line with our commitment as a responsible and humanitarian company, we have re-allocated half of our 2020 dividend for the 2019 financial year to philanthropic actions in order to help vulnerable or frail people who have been severely impacted by the crisis caused by the COVID-19 pandemic. €22 million was donated in the form of exceptional sponsorship to support solidarity actions in the countries where we operate. Here are some of the projects bioMérieux supported in 2021 worldwide.

IN AFRICA

SOUTH AFRICA - Bethany Home

This association aims to create a protective environment for abused women and their children, provide them with psychological and physical rehabilitation and help them reintegrate into society. Our support will help these women and their children by providing them with a safe haven and a place of rehabilitation.

IN LATIN AMERICA

CHILE - Un Techo Para Chile

This foundation works to build fair, humane and inclusive cities where families have access to a decent living space. Our support will help more than 50,000 people in very precarious situations to have access to housing.

IN ASIA

SOUTH EAST ASIA - Children of the Mekong

The aim of this association is to educate, train and support children and young people to improve their living conditions, their professional integration and to enable them to develop intellectually, emotionally and morally. We are supporting action plans run by this association in Cambodia, Laos, Myanmar, Philippines, Thailand and Vietnam.

IN THE UNITED STATES

SAN DIEGO - Mama's Kitchen

This community organization works to ensure that everyone has access to healthy, balanced food. Our support funds the purchase of food containers for more than 12,000 meals prepared, packaged and delivered weekly by Mama's Kitchen to San Diego's poorest residents.

IN EUROPE

FRANCE - Ma Chance Moi Aussi

This association supports children in need of educational support to give them the ability to succeed in their life. In 2021, we enabled a new group of children from a primary school near Lyon to be supported outside of school hours.

ITALY - ANFFAS

The National Association of Families of Mentally and Relationally Disabled Persons promotes initiatives in favor of social solidarity, care, scientific research, training and protection of civil rights. Our support contributed to the renovation of a building in the center of Florence, the upgrading of the existing swimming pool and the improvement of accessibility. In November 2021, Mr Alain Mérieux, Chairman of Institut Mérieux, met with ANFFAS teams on site in Florence.

OTHER ACTIONS RELATED TO COVID-19

Apart from the exceptional donations, bioMérieux contributed in May 2021 to a solidarity campaign alongside French companies to supply **India** with oxygen equipment to cope with a large-scale epidemic peak.

We also provided financial assistance in 2021 to **Brazil** to combat the food crisis in the wake of the health crisis.

BIOMÉRIEUX ENDOWMENT FUND FOR EDUCATION

In December 2021, the bioMérieux Endowment Fund officially launched its activities. With a budget of 20 million euros, it is part of our ongoing exceptional donations program carried out in 2020. Its mission: to reduce inequalities through and within education worldwide.

This fund finances projects dedicated to young people, with the aim of giving them confidence in themselves and the desire and means to move forward. Our employees are real stakeholders in the Fund's actions: they have been invited to share the issues relating to education in their area and to get involved, on a voluntary basis, in various forms (project leader, coordinator, occasional volunteer or ambassador).

As of the end of 2021, the bioMérieux Endowment Fund has initiated support for 6 projects in 8 countries.

- **Ma Chance Moi Aussi** (France): extra-curricular support for 12 children in a primary school near Lyon to help them progress.
- **The Walking Classroom** (US): donation of 40 teaching materials kits to teachers in North Carolina, Illinois, Missouri and Utah who are involved in developing children's learning in motion.
- **Arca do Saver** (Brazil): support for the Prudente favela in São Paulo to increase its capacity to accommodate up to 180 children.
- **Unicef** (Kenya): supporting a Nairobi neighborhood to train children, parents, teachers and local authority representatives.

Our teams in Kenya engage with Unicef as part of bioMérieux Endowment Fund program.

- **Care** (India): support from the state of Uttar Pradesh to train its officials, teachers and parents.
- **Children of the Mekong** (Philippines, Thailand and Vietnam): support for nurseries and pre-schools that take in children from refugees, ethnic minorities or disadvantaged neighborhoods.

A PARTNERSHIP TO ENCOURAGE BIODIVERSITY

In 2021, as part of our efforts to promote biodiversity conservation, we partnered with the Ligue de Protection des Oiseaux (LPO) for three years. In particular, we contribute to the financing of the conservation program for the bearded vulture, an endangered species of vulture. In addition, we are working with local LPO branches to promote biodiversity awareness at all our sites in Spain, France and Italy, through the design of our green spaces.

453

days of leave were donated by our employees in 2021 to L'Entreprise des Possibles. This donation, which was 100% matched by bioMérieux, enabled the payment of 280,000 euros to the group, which helps the homeless and the most vulnerable.

DONATIONS AROUND THE WORLD

As part of its philanthropic commitments, bioMérieux is involved in local solidarity actions near its sites and subsidiaries. In concrete terms, we are committed to local communities and participate in social and cultural initiatives in partnership with associations and non-governmental organizations (NGOs).

In 2021, for example:

- in the United States, our teams organized a collection in St. Louis for the benefit of the Hazelwood Police Officers Benevolent Association's "Families in Need" program, and another in Durham for the benefit of the Eno River Association, which acts to protect the environment;
- our Central European subsidiaries – Austria, Czech Republic, Germany, Hungary, Poland and Switzerland – ran a book appeal which resulted in 1,435 books being donated to local charities;
- in Japan, our employees took part in a challenge combining running and beach cleaning with the aim of preserving the horseshoe crabs' natural environment. This species is under threat due to the use of its blood for quality control in vaccine production;
- in France, our Marcy-l'Étoile Campus, near Lyon, in a bid to bring culture into the company, hosted an exhibition by the Musée des Confluences.

ENGAGING OUR SUPPLIERS AND DISTRIBUTORS

Because our purpose is to increase our positive impact by building healthier, more resilient communities, our responsibility extends across our entire value chain (all the way from purchasing to distribution).

Since 2018, we have strengthened the evaluation of our suppliers by adding CSR criteria in the selection process and we monitor the social and environmental performance of our strategic partners. We rely on the EcoVadis rating agency to assess their CSR performance. In 2021, 367 suppliers were rated, representing 50% of purchasing expenditure (compared to 202 suppliers representing more than 34% of purchasing expenditure in 2020). Of these, 307 suppliers met or exceeded the minimum expected score. Action plans were requested from 42 suppliers who did not meet the minimum score. The average score of our suppliers in 2021 is 57.2 on 100 (+0.8 point compared to 2020), compared to an EcoVadis average of 43.9.

In 2021, a new training course on the Responsible Purchasing Guide was launched for our purchasing teams. The deployment of our SPM tool (Supplier Performance Management) continued, enabling improved management of supplier performance, bearing in mind that CSR criteria account for a minimum of 10% of the final score.

86%

of our distributors have been assessed for CSR performance and competence in 2021.

TWO FAMILY FOUNDATIONS TO INCREASE ACCESS TO DIAGNOSTICS IN LOW- AND MIDDLE-INCOME COUNTRIES

We dedicate a significant portion of our charitable giving to support the actions of the Fondation Christophe et Rodolphe Mérieux and the Mérieux Foundation. These two independent family foundations share the same public health mission: combat infectious diseases, increase access to diagnostics and sustainably improve the health and quality of life of vulnerable populations.

Inauguration of a container factory for the production of food supplements in Madagascar.

The Fondation Christophe et Rodolphe Mérieux is an independent family-run foundation under the aegis of the Institut de France. Since 2005 it has been the reference shareholder of Institut Mérieux, holding one third of its shares.
In order to dedicate most of its resources to financing its projects, the Fondation Christophe et Rodolphe Mérieux relies on the staff of the Mérieux Foundation, entrusting to them some operational activities on the ground, in particular for projects in support of mothers and children.

Since its founding in 1967 by Dr Charles Mérieux, the Mérieux Foundation, an independent family foundation recognized as being of public interest since 1976, has been fighting against infectious diseases in resource-limited countries. Its objective is to strengthen laboratory diagnostic capabilities, which are often lacking in many countries suffering from repeated epidemics. Its actions favor diagnosis as an essential part of patient care, and also as an essential tool for monitoring and controlling infectious diseases.

Inauguration of the Youssouf Issabré maternity in Mali.

Inauguration of the Rodolphe Mérieux Laboratory of Tunis, in the presence of Mr Alain Mérieux.

Actions to combat COVID-19
Historically closely involved with local players in combating the fight against infectious diseases, the Mérieux Foundation was mobilized from the first warning signs of the COVID-19 epidemic to provide appropriate assistance for the countries with limited resources in which it works. The Foundation has made the fight against COVID-19 a priority, by the distribution of diagnostic tests, by conducting a study in hospitals, by launching or expanding projects and by supporting local health authorities.
In order to develop these actions and with the aim of strengthening its presence in the most affected countries, the Mérieux Foundation has benefited in 2020 from a significant and additional payment derived from bioMérieux dividends. This exceptional payment has helped to define and implement four project families, both in the emergency response and in the long-term reinforcement:

- construction and renovation of infrastructure;
- provision of additional equipment for Rodolphe Mérieux Laboratories and other partner laboratories on the ground;
- training development/sharing of knowledge;
- research activities around COVID-19.

2021 BIOMÉRIEUX'S DONATIONS

€2,000,000
to the Fondation Christophe et Rodolphe Mérieux

€701,000
to the Mérieux Foundation

Other important projects achieved in 2021 thanks to bioMérieux's support

- The Rodolphe Mérieux Laboratory in Goma (Democratic Republic of Congo) has demonstrated its scientific relevance and its excellent geographical positioning, particularly in the fight against COVID-19 and in monitoring the Ebola threat.
- The Rodolphe Mérieux Laboratory of Tunis (Tunisia) was inaugurated in the Institut Pasteur of Tunis.
- Construction of the Rodolphe Mérieux Laboratory in Casablanca (Morocco) has begun.
- The diaTROPiX platform, of which Mérieux Foundation is a founding member, has been inaugurated. Its objective is to produce quality rapid tests for the diagnosis of COVID-19 and neglected tropical diseases at affordable prices for resource-limited countries in Africa.
- The first edition of the Afro-ACDx course, co-organized with the Institut Pasteur of Dakar, was held in Senegal in November: it is the very first advanced course on diagnostics for Francophone Africa.
- The container factory for the production of food supplements NUTRISUD, financed by the Fondation Christophe et Rodolphe Mérieux to fight against malnutrition in the south of Madagascar in partnership with NUTRISET, has started its activity.
- The Youssouf Issabré maternity hospital in Sirakoro (Mali) was inaugurated in November. This facility will allow women and their newborns to be cared for in the best possible conditions.

THE BOARD OF DIRECTORS

as of December 31, 2021

bioMérieux is governed by a Board of Directors comprised of nine members, including five independent directors and one director representing employees.

MAIN SKILL SETS OF BOARD MEMBERS

The Board of Directors benefits from the varied, complementary skills of the individuals who comprise it:

- Management of major groups/listed companies
- International environment
- Strategy and M&A
- Health sector
- Finance/Audit
- CSR
- Digitalization

Alexandre Mérieux
Chairman and Chief Executive Officer [a]

Philippe Archinard
Non-independent director
[a] [b]

Jean-Luc Bélingard
Non-independent director
[a] [c]

Frédéric Besème
Director representing employees [a]

Harold Boël
Independent director [a] [b]

Marie-Hélène Habert-Dassault
Independent director [a] [c]

Marie-Paule Kieny
Independent director [a]

Agnès Lemarchand
Independent director [a] [b]

Fanny Letier
Independent director [a] [c]

(a) Strategy Committee. — (b) Audit Committee. — (c) Human Resources and CSR Committee

THE EXECUTIVE COMMITTEE

as of December 31, 2021

THE EXECUTIVE COMMITTEE IS RESPONSIBLE FOR IMPLEMENTING THE COMPANY'S GENERAL STRATEGY VALIDATED BY THE BOARD OF DIRECTORS.

The committee is responsible for overseeing strategic projects, deciding on priorities and implementing the necessary resources within the Company's various departments, such as deciding on significant capital expenditure. It also reviews the Company's operations as well as its regulatory and quality management, financial position, sales and headcount and monitors the Group's most important projects.
The Executive Committee meets every month.

Alexandre Mérieux
Chairman and Chief Executive Officer

Pierre Boulud
Chief Operating Officer, Clinical Operations

Guillaume Bouhours
Chief Financial Officer, Executive Vice-President, Purchasing & Information Systems

Pierre Charbonnier
Executive Vice-President, Global Quality, Manufacturing & Supply Chain

François Lacoste
Executive Vice-President, R&D

Valérie Leyldé
Executive Vice-President Human Resources and Communication

Mark Miller
Executive Vice-President, Chief Medical Officer

Yasha Mitrotti
Executive Vice-President, Industrial Microbiology

Esther Wick
Executive Vice-President, Legal Affairs, Intellectual Property and Compliance

FINANCIAL INDICATORS

In 2021, bioMérieux delivered a remarkable performance within a volatile environment marked again by evolution of the pandemic. Non-COVID related business showed a solid performance, and we strengthened our leadership in syndromic testing.
In the continuing uncertainty of the global environment, bioMérieux is well positioned to address public health challenges.

2,675
2019

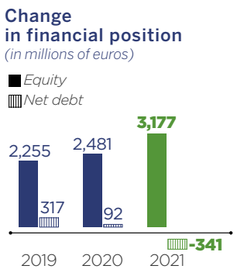
3,118
2020

3,376
2021

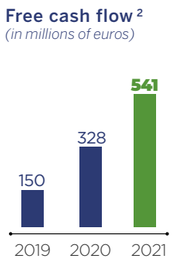
SALES
(in millions of euros)

Contributive operating income before non-recurring items [1]
(in millions of euros)

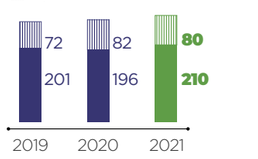
Change in financial position
(in millions of euros)



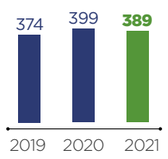
Free cash flow [2]
(in millions of euros)



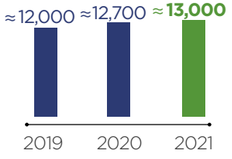
Capital expenditure
(in millions of euros)



R&D expenses
(in millions of euros)



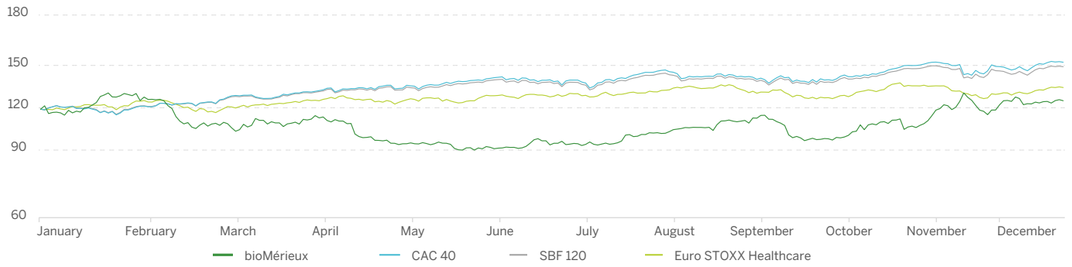
Headcount
as of December 31 [3]



1 The contributive operating income before non-recurring items corresponds to the operational income excluding non-recurring items related to the integration of BioFire, and accounting entries related to the allocation of its acquisition cost.
2 Cash flow prior to the acquisition of companies, treasury shares, divested businesses and dividends.
3 In full-time equivalent, including temporary employees.

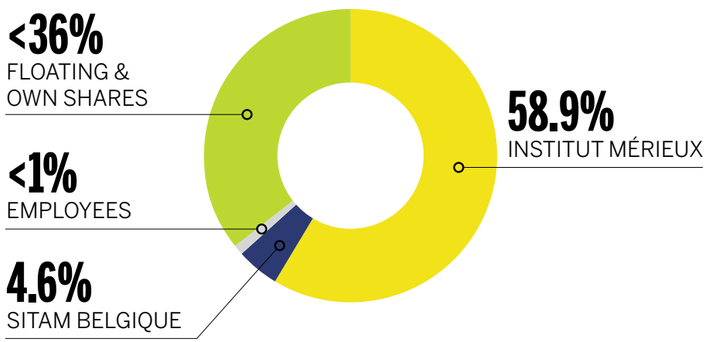
BIOMÉRIEUX SHARE

CHANGE IN BIOMÉRIEUX SHARE PRICE DURING 2021*



** in euros compared with benchmark indices.*

BREAKDOWN OF CAPITAL
As of December 31, 2021



THE BIOMÉRIEUX SHARE

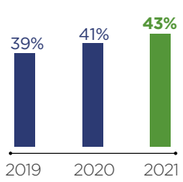
bioMérieux shares have been traded publicly since July 6, 2004 in the CAC Mid 60®, SBF 120®, CAC Mid & Small®, CAC All-tradable® and CAC All-Share® French market indices. In addition, bioMérieux has been included in new indices since 2017, specifically MSCI France Index and STOXX® Europe 600. The Company's shares are listed on compartment "A" of the Euronext market and are eligible for deferred settlement service (*Service de Règlement Différé* – SRD).

bioMérieux's social, corporate and environmental commitment has been recognized for a number of years by non-financial rating agencies.

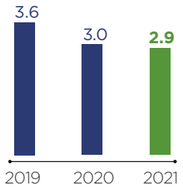
At the end of December 2021, the closing price for the bioMérieux share was €124.90 (€115.40 at the end of December 2020), and bioMérieux's market capitalization was €14.8 billion. In 2021, 34,838,855 of the Company's shares were traded on Euronext compared with 34,971,950 in 2020.

OUR MAIN NON-FINANCIAL INDICATORS

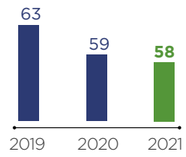
Share of women in management positions



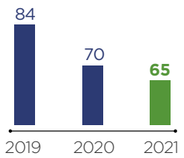
Waste generation
in relation to sales
(Metric tons per million euros)



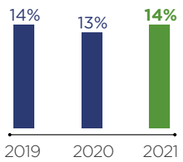
GHG emissions[1]
(in thousands of tCO_2e)



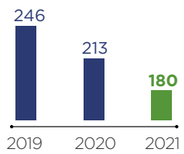
Total energy consumption
in relation to sales
(MWh per million euros)



Percentage of energy consumption from renewable sources



Water consumption
(all sources)
in relation to sales
(m^3 per million euros)



1. Scopes 1 and 2 greenhouse gas emissions.

OUR MAIN INDEXES AND LABELS

Non-financial rating agencies have been evaluating the CSR performance of bioMérieux and have included it in their socially responsible capital expenditure indices.

FTSE4Good	**FTSE4Good**	**July 2021** Included in FTSE4Good Index Renewal of certificate of inclusion	=	
Gaïa Rating	**Gaïa Research**	**November 2021** Score 85/100	↗	81/100 in 2020
CDP	**CDP Disclosure Insight Action**	**December 2020** Score C	↗	Score D in 2019
V.E	**Vigeo Eiris**	**October 2021** Ranked no. 1 in our sector - Top 6% of all assessed companies	=	
EcoVadis	**EcoVadis**	**May 2021** Score 75/100 - Platinum - Top 1% of all assessed companies	=	
Global Challenges Index	**Global Challenges Index**	**November 2020** Included in Global Challenges Index		
Index Egalité	**Gender Equality Index**	**March 2022** Score 93/100	=	
Dow Jones Sustainability Indexes	**Dow Jones Sustainability Index**	**November 2021** Entry in the World & the European DJSI	NEW	
Liberté • Égalité • Fraternité RÉPUBLIQUE FRANÇAISE	**Feminization of the governing bodies of the SBF 120**	**October 2021** Rank: 37/120	↗	Rank: 97/120 in 2020

OUR MAIN CSR COMMITMENTS

Building on the long-term vision of the Mérieux family, each year, bioMérieux renews its commitment to the United Nations Global Compact and works toward the United Nations Sustainable Development Goals (SDGs). The Company's contribution consists first and foremost in serving the needs of patients, throughout their healthcare experience by providing *in vitro* diagnostic solutions to fight against infectious diseases.
Corporate Social Responsibility (CSR) is driven by the Executive Committee, which monitors the implementation of ambitions and progress performed on a quarterly basis. The CSR policy and non-financial risks are shared with the Audit Committee and the Board of Directors every year. The CSR Department leads the CSR Committee, which includes all the Company's departments. This committee handles the operational rollout of the CSR strategy, taking a cooperative approach to setting CSR objectives and then embracing them at all levels of the Company and on all continents.

HEALTH

Antimicrobial Resistance (AMR) & Stewardship (AMS)

+30%
of patient results[(1)] supporting AMS by 2025

≥80%
of referenced antibiotics addressed by our **AST solutions**[(2)]

PLANET

Carbon & environment footprint

-50%
GHG absolute emissions in 2030 vs 2019 Scopes 1&2

-45%
water consumption[(3)]

-50%
energy consumption[(3)]

-50%
waste generation[(3)]

HEALTHCARE ECOSYSTEM

Stakeholder dialogue

Collaboration projects with patient associations
x2 by 2025

Materiality assessment updated every
3 years

EMPLOYEES

Safety, Diversity & Inclusion

Lost Day Incident Rate
÷2 to 0.6
in 2025
vs 1.2 in 2020

Corporate leadership team in 2025[(4)]

>40%
women

>35%
international

EXTENDED COMPANY

Partners & Communities

≥1%
of net income Group share dedicated to Philanthropy (Endowment fund excluded)

Distributors covering
55%
of sales[(5)], trained on CSR by 2025

(1) 2019 estimation: 183 million results.
(2) At least 80% based on EUCAST list and 90% based on CLSI cat A, B, U list.
(3) In 2025 vs 2015, per million € of sales.
(4) Direct reports to the Executive Committee with a Global Corporate mission (international profiles are defined as non-French).
(5) Sales realized through the distributors network.

SUSTAINABLE DEVELOPMENT GOALS

bioMérieux CSR strategy gives priority to issues that support the 5 following UN Sustainable Development Goals (SDGs):

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- GREECE
- HUNGARY
- INDIA
- ITALY
- IVORY COAST
- JAPAN
- KENYA
- KOREA
- MALAYSIA
- MEXICO
- NORWAY
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- THE NETHERLANDS
- TURKEY
- UNITED ARAB EMIRATES
- UNITED KINGDOM
- USA
- VIETNAM