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—infected 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 working toward our triple bottom line of society, planet and profit, will we be able to succeed in building a healthier world and a more inclusive society.

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

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.

We support the inclusion, well-being and development of our health partners 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.

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® TBI-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.
PIioneerIng 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 dialogue

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 centres

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 and development and optimization of the life cycle of our products

A human-centered and supportive corporate culture
- Human-centered commitment
- Ties with local stakeholders

Our fundamentals

Our purpose
- We help make the world a healthier place

Our applications

Clinical applications
- Combating antimicrobial resistance
- Fighting against stress
- Minimizing the risk of epidemics due to emerging pathogens

Industrial applications
- Food and pharmaceutical product quality

Our value creation

Promoting employee achievements and well-being
- 19 hours of training/employee
- Diversity, race: 93%
- 7.3% of internal promotions, or 969 employees
- Employees 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 13485 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
- 75% of R&D expenditure dedicated to the fight against antimicrobial resistance

Preserving the planet
- bioMérieux’s GHG emissions reduction approach and targets has 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
- Eco-design 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
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 150 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

85% of consolidated sales

CLINICAL APPLICATIONS

38% MOLECULAR BIOLOGY

31% MICROBIOLOGY

14% IMMUNOASSAYS

15% of consolidated sales

INDUSTRIAL APPLICATIONS

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.

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.

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.

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.

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.

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 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 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 28) 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 meet need for long-term needs.”

The COVID-19 pandemic has acted as a catalyst accelerating the education of the general public regarding the value of in vitro diagnostics. 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).

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According to a study published by The Lancet in early 2022, antibiotic resistance is thought to be directly responsible for 1.27 million deaths worldwide every year 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.

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). Antimicrobial stewardship (AMS) is one of the key ways to preserve antibiotic efficacy. AMS programs are hospital-based programs that use a series of interventions to optimize antibiotic use. 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, we 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 4 million of them do not survive.

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, providing rapid results and accurate identification of bacteria. Our comprehensive “Sepsis Management” range is dedicated to patient management throughout their care pathway.

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.

BACTERIAL RESISTANCE
THE KEY TO COMBATING
ANTIMICROBIAL RESISTANCE
AND SEPSIS

Methicillin-Resistant
Staphylococcus aureus (MRSA) infection

Methicillin-Sensitive
Staphylococcus aureus (MSSA) infection

$35,000
$16,000

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 (83%) and Germany (68%), lower in Sweden (55%) and significantly low in Italy (31%) 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.

STRENGTHENING OUR RAPID MICROBIOLOGY OFFERING

We have signed a exclusive distribution agreement in Europe with the American company Specimen Diagnostics for the SPECIFIC+ VITEK® MS PRIME, which allows clients 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+ VITEK® MS PRIME can meet the needs of hospitals of all sizes.

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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. Diagnostics is essential to identify the nature of the pathogens, 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.

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.

VITEK® MS PRIME TAKES
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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 offers greater efficiency and faster results, which are essential to combat antimicrobial resistance.

VITEK® MS PRIME is compatible with VITEK® 2 for antibiotics and MLA® 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.

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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 2020, 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 2022, 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 setting up in 7 other countries: Bangladesh, Bhutan, India, Indonesia, Nigeria, Sierra Leone and Vietnam.

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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 and up to 50% of critically ill patients. It is associated with a ten times higher in-hospital mortality rate and a higher rate of chronic kidney disease and dialysis in postoperative patients.

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 33% 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® D Dimer Exclusion®, an automated test used to exclude venous thromboembolic diseases, such as pulmonary embolism and deep vein thrombosis.

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.

In 2021, we supported a European Society of Intensive Care Medicine (ESICM) webinar on the information toolkit in 2021 composed of an educational manual, a monograph and infographics. 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 persistently severe acute kidney injury. Based on a large data set, this study, presented at the International Symposium on Intensive Care and Emergency Medicine (ISICEM), highlights the importance of early diagnosis in the management of patients at risk.

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 persistently severe acute kidney injury. Based on a large data set, this study, presented at the International Symposium on Intensive Care and Emergency Medicine (ISICEM), highlights the importance of early diagnosis in the management of patients at risk.

DETECTION OF RENAL STRESS

CE marked in February 2021, our VIDAS® NEPHROCLEAR® 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-proteinase 2) and NGAL (visician-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® CEL14 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.
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, chills, 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

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.

Environmental monitoring in the pharmaceutical field is now an automated digital approach. 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 digitize 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/facts-sheets/detail/food-safety](https://www.who.int/news-room/facts-sheets/detail/food-safety)

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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 help 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 performance of production sites.

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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 readily 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. 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 an 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 that 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 Mittot, 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 is 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 databases for microbiologists. It collects data from the hospital to monitor diagnostic effectiveness, the quality of laboratory results and healthcare 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.

BIOPRED® 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 solutions transform the diagnostic system as a software suite – but rather 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.
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.

A European project to demonstrate the value of diagnostics

Launched in 2019, VALUE is a unique Pan-European project that aims to provide scientific evidence of the medical, technological and economic value of the new diagnostics for a more reasonable use of antibiotics. Led by a public-private research consortium of 26 partners, the project is fully funded by the European Commission. VALUE includes two clinical trials, one of which is co-led by bioMérieux, called ADOQUA (Advanced Diagnostics for EnhanceD Quality of Antibiotic prescription in respiratory Tract infections in Emergency rooms). It uses our BIOFIRE® Respiratory 2.1 plus and bioMérieux® Prosieves 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 8,200 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 to 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 to predict the risks of neurological complications. Specifically, the performance of biomarkers on the first day is comparable.

The REALISM research program was undertaken with BRIDGTEST 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). The objective of this program, which is comparable, 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.

Roof of concept for IPP was achieved in 2020. An observational study funded by EIT-Health is underway to demonstrate the performance of this test in patients with sepsis: IMPACTC (Immune Profiling of ICU Patients to address Chronic critical ill and ensure healthy ageing). This test thus makes it possible to explore the cellular immunity route to T-cells, which complements the protection provided by antibodies. The VIDAS® COV-ID STALMINATION™ test was made available in mid-December 2021 for research purposes prior to automation on Vidas® 3 in 2022.

Antimicrobial resistance: funding to meet the challenge

9 million euros is the amount of public funding obtained by the ARISE 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 resistances. Coordinated by the SME Antabio, it brings together bioMérieux, the Hospices Civils de Lyon and Toulouse School of Economics. 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.

Toward a new test to characterize the immune response

In 2021, bioMérieux published a major article in Critical Care Medicine on the results of the REALISM (RealAnimation Low Immune Status Markers) project aimed at improving the management of patients admitted to the Intensive Care Unit (ICU) following severe 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.

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

** Research Use Only.

Innovation, The Driving Force Behind Our Response to Public Health Challenges

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 EPFISE® SARS-CoV-2, a cloud-based software application for epidemiological monitoring of SARS-CoV-2 variants based on sequencing data.
- A study conducted in France, under the aegis of HCL, shows how the 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® T-BRAF test for the diagnosis of latent tuberculosis infections launched at the beginning of this year, 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 to T-cells, which complements the protection provided by antibodies. The Vidas® COVID-19 STALMINATION™ test was made available in mid-December 2021 for research purposes prior to automation on Vidas® 3 in 2022.
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 every 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, 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 29)
- **BACT/ALERT®**, an automated blood culture system for monitoring the risk of bacterial contamination of cell cultures.
- **SCARNO®**, 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.
- **ENDOX<sub>NEXT®</sub>**, for testing the presence of endotoxins (toxins located in the outer membrane of certain Gram negative bacteria) in injectable drugs.

**PROMISING PARTNERSHIP WITH ACCELLX IN ASIA PACIFIC**

Since May 2021, bioMérieux has been the exclusive distributor of Accellx solutions in four countries: China, Japan, Australia and South Korea. This American 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 (O&I) 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 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 of transplantation. In France, our Joint Research Laboratory with the Hospital Civil de Lyon works on a related topic targeting adult patients.

**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 Phyxsys GmbH in 2019. Phyxsys is a German company acquired by bioMérieux 11 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 ENDOX<sub>NEXT®</sub> 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.

“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.”

“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 possible and feasible or because it is the way we are used to doing it? 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).

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 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 2020.

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 900 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 CO2 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 in 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 Pamitha forest, located near Athens.

This is the share of electricity produced and used by the La Balme site (France) thanks to the 5,000 m² of photovoltaic panels installed on the site.
bioMérieux is committed to a cross-cutting eco-design approach. The principle? Involve all 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.

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.

In France, in 2021, we commissioned a specially designed shuttle for the daily transport of refrigerated products between our sites in Marcy l’Etoile and Cadomias in the Lyon region. This shuttle, operated by our service provider TFMO, consists of a lower CO₂ emission tractor and a refrigerated trailer powered by a 100% electric motor.

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 CO₂ 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 CO₂, 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 reducing CO₂ 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 are part and parcel of the cultural transformation and commitment of our teams.
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 while encouraging adaptability.

We established external partnerships with specialized providers like Health Advocate in the US and Ethical 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 team members’ 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.

To continuously help our team members focus on their psycho-social well-being and support them through this critical period and beyond, we focus on enhancing team member engagement. 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 Ethical 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.

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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

Team members’ adaptability.

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.

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.

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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.

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 “Fearless” 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 chairs to improve the teleworking conditions of its 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.

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 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 develop 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, lift 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.

Joining bioMérieux means choosing an innovative company with an international dimension, committed to public health and diversity, 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.

We support them despite the COVID-19 situation.

THE COMMITMENT OF OUR TEAMS IS CENTRAL TO OUR APPROACH TO GATHER THEIR FEELINGS AND EXPECTATIONS ABOUT THEIR PROFESSIONAL LIFE AT BMERIEUX, 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 ANDeto-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.

Biomerieux is expanding

At the end of 2021, the ISO 45001:2018 certification had been achieved at 80% of our industrial sites, allowing us to move towards a 100% certification rate. This is the result of the efforts made by our managers and teams, who have undergone training in the standards to ensure compliance with the requirements of this new standard.

The ISO 45001:2018 standard, also known as OSHAS 18001, is an international standard for occupational health and safety management systems. It provides a framework for employers to improve the safety and health of their workers.

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.

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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 to discussion groups on the topics identified.

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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.
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 Université, 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 pathogens/diagnostic methods for bioMérieux: AMR/AMS, blood culture, 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 25).

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 functions 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.

The training is one of Mérieux Université’s 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.

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.

It is an opportunity for bioMérieux team members and managers to benefit from Mérieux Université’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.

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 extensive 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 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.

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.

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

- Sepsis Alliance: creation of a digital platform aiming 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 25).
- 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.

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.

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

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 charters. This includes the following core principles:

- Clarity of purpose
- Integrity and respect
- 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% 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 diagnostics 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 (see below) and the overhaul of the RHHN² to simplify and accelerate the entry of innovative products onto the French market.

² Formerly known as the list of innovative products (‘liste d’efficacité d’innovation’).

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 GDME, with whom we have been working for a long time, is our notified body. Our IVDR certification process was launched in 2020 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 BDS.

Recently, Europe has taken legislative measures to progressively roll out this new regulatory framework to ensure that the market is satisfied with the current range of diagnostic devices. This industry is crucial to MedTech Europe, as 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.

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.

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 Communist Good organized on May 27 and 28, 2021 by TSE and the municipality. He spoke at a round table on the financing of innovations in health and the common good.

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).

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.

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85% 87.5%

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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.

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 services, regardless of the pandemic situation in all countries where we operate.

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.

* NPS = % promoters - % detractors.
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.

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.

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.
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): donations 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 de 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.
- **Cara** (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.

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 crab’s 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.
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.

The Fondation Christophe et Rodolphe Mérieux is an independent family 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.

Since 2019, the Mérieux Foundation has been the reference shareholder of Institut Mérieux, holding one third of its shares.

In order to dedicate most of its resources to supporting the actions of the Fondation Christophe et Rodolphe Mérieux, the Mérieux Foundation has been the reference shareholder of Institut Mérieux, holding one third of its shares. It has been the reference shareholder of the Institut Pasteur of Dakar.

The Mérieux Foundation has been involved in supporting the Fondation Christophe et Rodolphe Mérieux in financing its projects, the Fondation Christophe et Rodolphe Mérieux being a founding member of the Fondation Pasteur de Dakar.

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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

**THE EXECUTIVE COMMITTEE**

**THE BOARD OF DIRECTORS**

as of December 31, 2021

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Alexandre Mérieux</td>
<td>Chairman and Chief Executive Officer</td>
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<td>Frédéric Besérine</td>
<td>Director representing employees</td>
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<tr>
<td>Marie-Paule Kiény</td>
<td>Independent director</td>
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<td>Chief Operating Officer, Clinical Operations</td>
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<tr>
<td>Guillaume Bouhours</td>
<td>Chief Financial Officer, Executive Vice-President, Purchasing &amp; Information Systems</td>
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<tr>
<td>Valérie Leyléd</td>
<td>Executive Vice-President, Human Resources and Communication</td>
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<tr>
<td>Pierre Charbonnier</td>
<td>Executive Vice-President, Global Quality, Manufacturing &amp; Supply Chain</td>
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<tr>
<td>François Lacoste</td>
<td>Executive Vice-President, R&amp;D</td>
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<tr>
<td>Yasha Mihrotti</td>
<td>Executive Vice-President, Industrial Microbiology</td>
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<tr>
<td>Esther Wick</td>
<td>Executive Vice-President, Legal Affairs, Intellectual Property and Compliance</td>
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(a) Strategy Committee. — (b) Audit Committee. — (c) Human Resources and CSR Committee
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.

SALES
(in millions of euros)

2019 2020 2021
2,675 3,118 3,376

Capital expenditure
(in millions of euros)

2019 2020 2021
77 82 80

2019 2020 2021
196 196 210

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

2019 2020 2021
389 611 801

Change in financial position
(in millions of euros)

2019 2020 2021
2,255 2,481 3,377

Free cash flow 2
(in millions of euros)

2019 2020 2021
150 328 541

R&D expenses
(in millions of euros)

2019 2020 2021
374 399 409

Headcount 3
as of December 31

2019 2020 2021
12,000 12,700 13,000

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-Tradeable® 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, bioMérieux became a constituent of the Euro STOXX Healthcare index.

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.

2021 ANNUAL REPORT
Non-financial rating agencies have been evaluating the CSR performance of bioMérieux and have included it in their socially responsible capital expenditure indices.

Our Main Non-Financial Indicators

<table>
<thead>
<tr>
<th>Share of women in management positions</th>
<th>Waste generation in relation to sales</th>
<th>GHG emissions in thousands of tCO₂e</th>
<th>Total energy consumption in relation to sales</th>
<th>Percentage of energy consumption from renewable sources</th>
<th>Water consumption in relation to sales</th>
</tr>
</thead>
</table>

1. Scope 1 and 2 greenhouse gas emissions.

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.

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.

<table>
<thead>
<tr>
<th>Index</th>
<th>Rating</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>FTSE4Good</td>
<td>85/100</td>
<td>July 2021</td>
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<tr>
<td>Gala Research</td>
<td>Score D</td>
<td>November 2021</td>
</tr>
<tr>
<td>CDP Disclosure Insight</td>
<td>Score D</td>
<td>December 2020</td>
</tr>
<tr>
<td>Vigeo Eiris</td>
<td>Score C</td>
<td>October 2021</td>
</tr>
<tr>
<td>EcoVadis</td>
<td>Score 75-300 - Platinum - Top 1% of all assessed companies</td>
<td>May 2021</td>
</tr>
<tr>
<td>Global Challenges Index</td>
<td>Score 97/120</td>
<td>November 2020</td>
</tr>
<tr>
<td>Gender Equality Index</td>
<td>Score 59/100</td>
<td>March 2022</td>
</tr>
<tr>
<td>Dow Jones Sustainability Index</td>
<td>Score 97/120</td>
<td>November 2021</td>
</tr>
<tr>
<td>Feminization of the governing bodies of the SBF 120</td>
<td>Score 55</td>
<td>October 2021</td>
</tr>
</tbody>
</table>

1. Score 85/100 in 2020；2. Score 81/100 in 2020；3. In 2025 vs 2015, per million euros；4. Direct report to the Executive Committee with a Global Corporate mission (international projects are handled at all levels of the Company and on all continents)；5. Sales realized through the distributors network.