This 2020 France HealthTech Panorama – and I would like to thank all the participating companies and our partners Bpifrance, Euronext, EY and QBE for their insightful analyses – demonstrates that 2020 was unquestionably a year of unparalleled challenges. The health crisis revealed the importance and dynamism of the health innovation ecosystem.

We witnessed an unprecedented response from entrepreneurs, with more than a hundred medical innovations (in the fields of vaccines, therapeutics, diagnostics, medical devices and eHealth) rolled out to tackle the current and future needs raised by the health emergency. Once again, this demonstrates the remarkable agility, responsiveness and resilience of our ecosystem in providing solutions for patients and the health system.

One of the major lessons learned over this period is also the extraordinary value of working together. Barriers have fallen. Stakeholders from every sector of health innovation – major corporations, startups, private and public hospitals, digital specialists and health professionals, patients, experts and carers – have worked closely together to deliver effective solutions that meet immediate needs. This collaborative approach paves the way for immense progress for patients and our healthcare system.

This recognition of the major role that the industry needs to play, both to protect health and to create wealth for our country, must go hand in hand with a strong industrial policy in the area of health innovation.

Funding remains a major challenge if we are to fulfil our potential. Alongside the efforts of Bpifrance, various initiatives such as the Tibi scheme and the recent commitment from the French Insurance Federation are encouraging signs that will help boost the competitiveness of HealthTech companies. To consolidate these measures, attract international investors and encourage the technological diversity needed to tackle health challenges, the authorities must guarantee continued funding, from the upstream phase (R&D) to treatment in the health system; foster more efficient high-level expertise at all stages of innovation development; and simplify administrative and regulatory mechanisms.

As we look ahead to the upcoming Strategic Council for the Healthcare Industries, this is the driving force behind the proposals in the "Health Innovation Plan" – the result of recent collective efforts by the France Biotech committees and working groups. The health crisis has served as a brutal reminder that health and the economy are closely linked. This seismic shock must prompt us now more than ever to strengthen the bonds between two sectors which may outwardly appear to have different goals. By encouraging collaborative approaches, dialogue with authorities and transparency, we need to take this opportunity to contribute to the ambitions of the healthcare system of the future. It is up to us to work together to build a strong HealthTech sector!

Franck Mouthon, Chairman of France Biotech

"A salutary wake-up call to develop a strong HealthTech industry!"

"THIS RECOGNITION OF THE MAJOR ROLE THAT THE INDUSTRY NEEDS TO PLAY [...] MUST GO HAND IN HAND WITH A STRONG INDUSTRIAL POLICY IN THE AREA OF HEALTH INNOVATION."
"Make France Europe’s leading nation for health innovation"

The period we are currently living through has served as a timely reminder, if one was needed, of the key role and increasing importance of biotech companies – both in meeting patient needs, that goes without saying, but also from an economic viewpoint: estimates suggest that by 2030 they will be generating an annual turnover of €40 billion and will have created 130,000 additional jobs.

France has built up a solid ecosystem, capitalising on high-level training that has provided it with internationally recognised skills and expertise. To ensure the survival of these companies which have such a vital role to play in the current crisis, we have invested unprecedented resources in company support schemes such as the early repayment of the research tax credit and state-guaranteed loans.

But we also need to look to the future. As part of the Recovery Plan, more than €6 billion will be invested in medical infrastructure, and the fourth Investing in the Future Programme will contribute more than €20 billion over a four-year period to support research and innovation ecosystems. We are also focusing on strengthening the competitiveness of our industry: the Recovery Plan provides for a €20 billion reduction in production taxes and financial support to digitalise our production and relocate manufacturing facilities back to France.

We want to support funding for HealthTech companies and encourage innovation. This will be the focus of the latest Strategic Council for the Healthcare Industries (CSIS), which has been renewed for 2021. The objective of CSIS 2021 is clear: “To make France Europe’s leading nation for health innovation.” To achieve this aim, we will focus on developing basic research characterised by excellence and interdisciplinarity. We will work on strategies to drive innovation, especially by facilitating market access for companies but also by protecting innovations produced in France. We will emphasise the importance of training. The nine funds selected by the "Tibi" initiative in the healthcare sector will open up possibilities for long-term funding for innovative biotech or MedTech companies.

We are also launching strategies to accelerate biomanufacturing and eHealth. The France biomanufacturing alliance (Alliance France Bioproduction) was recently set up with the aim of making France a European leader in biomanufacturing by 2030. In the area of eHealth, we also want to be a global leader. The French President recently inaugurated the PariSanté Campus, a dedicated site for digital health which will help strengthen the attractiveness and competitiveness of health innovation in France, with an investment of €400 million. The digitalisation of the health industry represents a unique opportunity to develop the future of medicine, a medicine that will be personalised, preventive, predictive and participatory. The challenge is threefold: we want to boost the efficacy of the health system, economic growth and health sovereignty.

This roadmap will shortly be laid down in an addendum to the contract with the healthcare industries and technologies sector. I would like to thank France Biotech for its commitment and its willingness to take the initiative in this area.
A word from the minister

"An innovative industry that creates value for patients and for the French health system"

The health crisis has highlighted the need to guarantee health security to ensure that patients in France have access to the treatments they need. In addition, and this has been one of the priorities of the French President since he came to office, France needs to pursue an ambitious policy to boost its attractiveness for innovation, becoming a country that produces and adopts the innovations of the future. We are committed and determined to make France the leading sovereign nation in Europe in terms of health innovation.

We are pursuing a policy that is more ambitious than anything attempted in decades, one that targets rapid access to innovation for patients while also contributing to France’s industrial policy, which plays such a vital role in national sovereignty. Industrial policy and innovation for patients have too often been seen as mutually exclusive, but I disagree. I want a strong industry, an industry that creates value for patients and for the French health system.

Several key initiatives have already been taken: the measures adopted by the 2018 Strategic Council for the Healthcare Industries (CSIS) have been implemented, with significant reductions in the time taken to grant clinical trial authorization, for the French National Authority for Health (HAS) to review medicinal products and for the French Economic Committee for Health Products (CEPS) to negotiate prices. We have adopted the reform of early access to drugs (the “ATU” or temporary authorisation for use reform), a procedure which needed to be simplified if it was to be effective. A framework agreement with the CEPS should lead to further progress in recognising both the therapeutic value of a drug and also the industrial value that it has the potential to create.

When it comes to evaluating medicinal products, I am in favour of a rigorous, pragmatic scientific review process. We will not compromise on the quality of the clinical data that we ask you to provide because we are convinced that this guarantees the quality of the treatment provided in our country, and because patient safety is crucial. We need to step up contacts between your companies and the authorities, so that there is a real mutual understanding. I am in favour of greater dialogue because we share the same aim, namely to improve the health of our fellow citizens!
We can learn a lot from the current crisis. First and foremost, it has reminded us that health is our most precious asset. When our health is affected, it is not only lives that are turned upside down, but entire economies and societies.

Health innovation is essential for our resilience and our sovereignty. It brings promise in three areas: better treatments for society and companies that are more competitive, which together will lead to a country that is better prepared for future challenges.

The challenge is huge, but we are lucky in France to have two major advantages: a flourishing HealthTech ecosystem that is agile and committed, and an outstanding academic research community capable of providing companies with the boost in creativity that will make all the difference.

Now more than ever, we need to unite these two pillars, and that is why the government is creating new links between companies and public laboratories. The Recovery Plan offers unprecedented support for employment in R&D, an area that has been severely affected by the crisis, by funding the secondment of private-sector employees in public laboratories for joint projects. It harnesses the fourth Investing in the Future Programme to stimulate the emergence of comprehensive, independent segments in growth industries such as digital health and biomanufacturing by offering support for the entire lifecycle from laboratory to market. It is increasing the innovation grants distributed under the DeepTech Plan, to facilitate groundbreaking innovations, technology transfer and scientific entrepreneurship.

Looking beyond the recovery, the Research Planning Act lays the foundations for stronger relations between academia and industry. It introduces opportunities and simplifies procedures so that ideas and people can move more easily from one to the other, especially on university campuses destined to become major innovation hubs.

The PariSanté Campus project due to be set up on the Val-de-Grâce site in Paris, as announced by the French President in December 2020, is a perfect example. By creating a single dedicated site for public professionals in training and research, major corporations, SMEs, mid-caps, startups and investors in the area of health data production and use, and providing conditions that are conducive for the emergence of synergies, PariSanté Campus will help position France as a global player in digital health and the future of medicine.

This ambition is within reach, and this panorama of the HealthTech industry shows that we are already well on the way to achieving it.
"Global trade boosting growth of the French biotech ecosystem"

The health industry is a heavyweight in our country’s exports: medicines and medical devices currently account for nearly €100 Bn in turnover, 40% of that on the export market, and the pharmaceutical industry represents our fourth highest trade surplus. This French ecosystem thrives because of its open approach to global trade. The challenges facing industry, exports and health are all closely intertwined. More so than in other sectors, our economic diplomacy in the area of healthcare, our health diplomacy and our health sovereignty form a tightly woven, mutually supportive web, as clearly illustrated by the pandemic we are currently experiencing.

In this respect we can draw two major lessons from the current crisis. First, our French health ecosystem proved to be highly resilient when faced with unprecedented levels of pressure, especially on hospitals, and exports of medical equipment withstood the crisis better than others. This reflects the quality and competitiveness of what France has to offer. Second, the crisis revealed shortcomings in some of our value chains, especially in the field of health, and therefore the need to guarantee – in some cases even to “rebuild” – our health sovereignty.

In view of these observations, we are more determined than ever to support companies in the health sector as they seek to develop at international level. Under the export section of the France Recovery Plan, we have introduced specific measures to meet their needs. With the personal exporter account and a "Live Health Info" map, companies will have access to sector-by-sector information, updated in real time, to help them identify export opportunities. We are also supporting companies in their prospecting efforts, with an "export recovery grant" that will cover up to 50% of support services at international level. The grant can be used to cover expenses incurred by SMEs and mid-caps for participation in international trade fairs like MEDICA in Düsseldorf.

We are also encouraging companies to harness young talent, by offering a €5,000 VIE booster grant in connection with the VIE international internship programme for companies wishing to recruit international interns, and with the planned introduction of a dedicated VIE sector for the health industry. At the same time we are boosting the public funding solutions available for our exporters, especially prospecting insurance, which provides guarantees for companies looking to develop export business in an economic climate still beset by uncertainty. Finally, we are aware of the importance of attracting more talent to French biotech companies. Our ambition is twofold: we want to bring French talent back to France, and we want to attract foreign talent to support the challenges raised by the rapid growth of HealthTech. A series of specific, unprecedented measures will be taken in this area in spring. This strategy will be boosted by our efforts to promote France internationally, and in particular our healthcare sector, by providing new visibility for French companies.

Together with the regions and all the stakeholders in Team France Export, the government is determined to make sure that our biotech and health companies take full advantage of the export measures in France’s Recovery Plan. I hope that 2021 will be a year of optimism, hope and, of course, success!
SUMMARY
8 The sector in France and HealthTech funding

THE HEALTHTECH INDUSTRY IN FRANCE
# 1.1 French HealthTech companies
14 Companies, startup dynamic and profile of entrepreneurs
16 A sector growing in maturity and economic strength
17 HealthTech, an industry with an international outlook
19 HealthTech, an industry that generates direct and indirect employment
21 Major efforts in R&D

# 1.2 Technologies developed by the French HealthTech industry
22 Varied technologies and application areas
23 Innovation potential that meets crucial medical needs
24 Collaborative international research
26 Focus on biotech companies
27 Focus on MedTech companies
29 Focus on eHealth companies
30 3 questions for… Maximilien Levesque, co-founder and CEO of Aqemia

THE IMPACT OF COVID-19
32 How the pandemic reminds us that health is a vital asset
33 Focus on clinical trials/Production and marketing
34 Partnerships
35 The impact of COVID-19 on HealthTech funding
36 The French HealthTech industry committed to tackling COVID-19
37 The Health Innovation Coalition: a response to the health crisis
38 Bpifrance, a key player in HealthTech funding. By Bpifrance
41 COVID-19, a game changer in terms of liability for company directors? By QBE

FUNDING OF HEALTHTECH IN FRANCE AND AT GLOBAL LEVEL
# 3.1 WORLD
46 2020: health takes centre stage. By EY
50 3 questions for… Frédéric Cren, Chief Executive Officer and co-founder of Inventiva

# 3.2 EUROPE
51 Europe: outperforming during the crisis. By EY
59 Euronext: the leading listing venue for HealthTech companies in Europe. By Euronext
64 3 questions for… Louis de Lillers, CEO of CorWave

# 3.3 FRANCE
65 HealthTech funding in France. By EY
66 Venture capital in France, a funding source still buoyant in 2020. By EY
67 Listed company refinancing: growing recourse to debt. By EY
68 Funding, a chief concern for entrepreneurs
72 Research Tax Credit and Innovative Young Company (JEI) status: attractive schemes for HealthTech companies

APPENDICES
74 Steering committee
75 Partners
76 Contributors
77 Health competitiveness clusters
80 Corporate survey participants

Each year, France Biotech produces the France HealthTech Panorama, a report drawn up on the basis of a dedicated survey and publications by companies in the sector. It does not provide an exhaustive picture. The information was collected from 5 October to 30 November 2020 on the basis of 405 companies. The companies included in the survey meet the following criteria:
➤ Their core business is in the area of life sciences and their registered office is in France;
➤ Their research and development spending represents at least 15% of their total costs;
➤ They have fewer than 250 employees.
In addition to the data from the questionnaire, a detailed analysis was compiled from other sectoral and financial studies, as well as previous publications and reports by France Biotech, cited in this report.
The survey was carried out in partnership with Bpifrance, EY, Euronext and QBE.
The French HealthTech industry is a dynamic sector providing highly skilled jobs. The success of these startups paves the way for state-of-the-art treatments and innovative solutions for patients. In the long term, over and above the benefits for public health, the growth of these companies should strengthen France’s industrial fabric and generate significant economic value through French mid-caps and exports. By encouraging the emergence of new industry leaders, France will consolidate its international position and its scientific and technological excellence, while protecting its health sovereignty, especially when it comes to highly innovative products with significant added value.

How the pandemic reminds us that health is a vital asset

The French HealthTech industry is a dynamic, diverse and increasingly coordinated sector, composed of startups that are mostly spin-offs from public research. More than 2,000 French HealthTech companies, including 750 biotech, 1,100 MedTech and 200 eHealth companies. More than 60 new biotech companies each year. High growth in the number of eHealth companies spanning biotechnology, medical devices and digital technologies.

The sector is growing in maturity and economic value. Growing proportion of mid-caps. The sector has doubled its turnover in five years. The e-Health industry represents an additional growth driver.

It is an outward-looking sector, with the United States and Europe as its main markets. Innovations that target domestic and international markets. Market access for these innovations remains complex and requires upstream support for companies.

HealthTech is an industry that provides jobs. The HealthTech industry represents 50,000 direct and indirect jobs, and by 2030 could generate an additional 130,000 jobs in France. Because of the highly technical nature of the sector and the need for specific skills, HealthTech is part of a flourishing ecosystem of experts and suppliers. 85% of HealthTech firms outsource services, thereby generating a significant number of indirect jobs. Highly promising prospects for employment: 84% of HealthTech companies are intending to recruit in 2021, mainly for R&D positions.
5. R&D, a key activity for companies

Excellence of French research: 52% of HealthTech companies are spin-offs from public or academic research (two-thirds of biotech companies). More than 35,000 patents filed by French HealthTech companies. Companies spend more on R&D than anything else, and half of the workforce is employed in R&D. Spending on R&D has doubled in 5 years. Research is collaborative and international. Most agreements are concluded with European partners (academic partners or research institutions) and are collaborative R&D agreements.

6. Patients and the health system: what drives entrepreneurs

78% of entrepreneurs are doctors, researchers or scientists. More than 4,000 medical innovations in development or brought to market, including 1,900 biotechnology products, 2,200 medical devices and 400 digital health products.

7. Innovations that will transform patient treatment, the care pathway and the health system as a whole

<table>
<thead>
<tr>
<th>BIOTECH</th>
<th>AIM OF THE PRODUCTS</th>
<th>35%</th>
<th>Eradicating disease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>26%</td>
<td>Improving life expectancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12%</td>
<td>Prevention</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEDTECH</th>
<th>AIM OF THE PRODUCTS</th>
<th>28%</th>
<th>Early detection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20%</td>
<td>Avoiding complications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12%</td>
<td>Improving life expectancy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EHEALTH</th>
<th>AIM OF THE PRODUCTS</th>
<th>42%</th>
<th>Improving treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>Optimising the care pathway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14%</td>
<td>Early diagnosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14%</td>
<td>Optimising R&amp;D</td>
</tr>
</tbody>
</table>

8. Health and medical innovation, key trends in 2020

Although the industry has been affected by the crisis, its agility, innovative culture and resilience have enabled it to adapt. Impact on the entire business development chain. R&D is the area that has been most affected by the health crisis. Three-quarters of companies experienced major delays or had their clinical programmes suspended in the first half of 2020. Delays expected in companies’ clinical deal flow. Contribution of digital health in 2020

- 2020 was characterised by inventive digital health solutions in areas such as health system optimisation, patient flow management, patient monitoring and teleconsultation.
FUNDING: HEALTH WAS A TOP PRIORITY IN 2020

**WORLD**

€39.1 Bn
raised through venture capital and
IPOs by European and
US companies in 2020, an increase
of 15% compared with 2019.

€52.06 Bn
raised through IPOs on the
Nasdaq from 2010 to 2020, including €15.5 Bn in 2020
compared with €8.1 Bn in 2019.

**EUROPE**

€11.3 Bn
raised in 2020, including
€5.9 Bn in venture capital in the
7 leading European countries (1)

20% increase in venture
capital raised compared with 2019.
With 9 transactions worth
more than €100 M in 2020
as opposed to 5 in 2019.

France in 2nd place in Europe
In cumulative capital raised from
2018 to 2020, behind the United
Kingdom.

(1) Belgium, France, Germany, Netherlands,
Sweden, Switzerland, United Kingdom.

**FRANCE**

€1.5 Bn raised in 2020
in capital by French
HealthTech companies.

€886 M
raised in venture capital,
the leading source of
HealthTech funding in France.

€836 M
of debt (140% more than 2019)
raised by listed
HealthTech companies in 2020
compared with €475 M
in capital refinancing.

STRONG GOVERNMENT SUPPORT

- Support for companies with
  state-guaranteed loans.
- **Increase in innovation funding:**
  €420 M for health in 2020, nearly
three times more than in 2019.
- **New programmes introduced to
  support R&D projects:** vaccines
  and therapies with strong
government support for clinical
  trials in France.
- **Funding for increased production
  capabilities or relocation for**
curative and preventive therapies
and also for molecules used in
COVID-19 treatment that were in
short supply.
- **Innovation capital:**
  €126 M invested in 2020 in
  32 transactions.
- **Health is one of the key sectors of
  the Recovery Plan launched in
  2020, which supports**
  industrialisation and relocation to
  promote national sovereignty.
Euronext, Europe’s leading stock exchange for health

Markets supporting HealthTech funding: a health crisis, but not a financial one

Throughout the COVID-19 crisis, stock markets have continued to play a key role in HealthTech funding, firstly by withstanding volatility and record trading volumes, which has enabled high turnover of managed assets – aimed at listed biotech/ MedTech companies –, and then by allowing companies to raise the funds needed to pursue clinical and industrial development. Over the entire year 2020, Euronext saw 6 IPOs, mainly in northern Europe (raising €363 million), and nearly 400 secondary transactions to raise funds, raising nearly €2 billion.

Raising funds in Europe and also from US and Asian investors

The leading European HealthTech companies also have profiles that naturally encourage them to extend their industrial and financial coverage to the US and Asia. From this perspective, a Euronext listing offers access to a wide range of investors worldwide, which in 2020 led to several successful Europe/ US dual listings. Inventiva (which specialises in NASH) and Nanobiotix (nanotechnologies for cancer treatment) raised €71 million and €81 million respectively from their dual listing in the United States, after securing funding of a total of €300 million for the two companies following their IPOs on Euronext.
With 135 respondent HealthTech companies, or 33% of the panel, the Greater Paris region has the highest concentration of companies. Auvergne Rhône-Alpes is increasingly represented; 17% of the companies are based in this region, with the majority in Lyon and Grenoble. In third place, Occitanie and PACA are also well represented, with a total of 16% of the sample for the two regions. Finally, with 14% of respondent companies, the Grand-Ouest, which comprises Brittany and the Pays de la Loire, is also one of the country’s most dynamic HealthTech regions.
THE HEALTHTECH INDUSTRY IN FRANCE
Companies, startup dynamic and profile of entrepreneurs

French HealthTech is characterised by a high concentration of companies, mostly VSEs, with dynamic growth in startups.

Number of HealthTech companies surveyed for the Panorama

Biotech company launches and liquidations

France has an extensive web of innovative companies in the health industry (biotechnology, medical devices and diagnostics, eHealth, etc.). The panel of participating companies has almost doubled in 5 years, reaching a total of 405 companies in 2020. The sector has a strong startup dynamic, with around 60 new companies launched each year. The number of launches has been on the rise for the past ten years (+41%), while the number of liquidations has fallen (-55%).

Source: INSEE; verif.com. 2013 France Biotech Panorama
The French HealthTech ecosystem is characterised by a large number of startups. 61% of companies are VSEs (very small entities) with fewer than 10 employees. This figure is similar to the situation 5 years ago (60% of VSEs in 2015). But in 2020, there were 15 companies with more than 100 employees, compared with just 5 in 2015, reflecting the gradual development of companies to the status of mid-caps.

Profile of company directors

- 80% of company directors founded their company
- Average age 50
- 78% of founders are scientists or doctors
- 58% are first-time company directors
- 17% of company directors are women (21% in biotech companies compared with 8% in MedTech companies)

Source: France Biotech, 397 companies. December 2020

Source: France Biotech, 405 companies. December 2020
A sector growing in maturity and economic strength

As a sector that creates value, French HealthTech is growing in maturity and has enormous economic potential.

Age of companies (years)

| 0 to 5 | 2015 | 39% | 2020 | 43% |
| 6 to 9 | 2015 | 31% | 2020 | 24% |
| 10 or over | 2015 | 30% | 2020 | 33% |

Out of the 405 respondent companies, the majority (43%) are startups launched less than 5 years ago, with an average of 11 employees. The more mature companies, set up more than 10 years ago, represent a third of the panel and 49% of jobs generated by the industry. The average age of companies is 8 years. Over the past 5 years, the sector has seen a significant increase in the number of companies set up, leading to a rise in the number of startups launched less than 5 years ago. This trend has been partly driven by companies in the field of digital health. 71% of eHealth startups were set up less than 5 years ago.

The proportion of companies aged 10 years or over, mainly biotech companies, has also increased, representing a third of the panel in 2020. The sector is therefore growing in maturity, while maintaining a strong startup dynamic.

Turnover of French HealthTech companies in the survey

Innovative HealthTech companies in the sample generated nearly €800 million in overall turnover in 2019, more than twice the figure of five years ago. This represented an average turnover of €2.2 M per company in 2019. This turnover may partly be attributed to MedTech companies (medical devices and diagnostics), half of which already have products on the market, and also to eHealth companies. Since drugs and biopharmaceuticals require longer development cycles than those for medical devices (10 to 15 years as opposed to 3 to 5 years for MedTech), biotech companies are still only generating very low turnovers. Most of their revenue comes from partnerships with industry.

According to research conducted by the Boston Consulting Group and France Biotech in 2017, the French HealthTech industry could be generating an overall turnover of more than €40 billion by 2030.*

HealthTech, an industry with an international outlook

In terms of both target markets and international presence, French HealthTech companies have determinedly global ambitions.

International subsidiaries

Health products and technologies are aimed at global markets. Even though most HealthTech companies are still VSEs, they have international ambitions, often at a very early stage in their development. Around a fifth of companies have one or more subsidiaries abroad. For MedTech companies this proportion is higher (a quarter of companies), and half of MedTech companies already have products on the market.

Distribution of subsidiaries abroad (% of subsidiaries)

Top 5 countries for setting up a subsidiary abroad

Of the various countries in which companies choose to set up a subsidiary, the United States – the world’s largest pharmaceutical market – remains the favourite destination (42% of subsidiaries). The world’s second largest market, Europe, accounts for 32% of the subsidiaries of French companies, with the United Kingdom (8) and Belgium (6) being the countries of choice. 11% of subsidiaries are set up in Asia, mainly China, which has 7 subsidiaries.
Half of HealthTech companies already have products on the market. This proportion is higher for eHealth companies (81%), which generally have quicker market access. Because of their business model, only 28% of biotech companies currently have products on the market. Most are either research products or services. Very few biopharmaceuticals have already been brought to market.

The domestic market is favoured by HealthTech companies. But international markets are particularly attractive for biotech and MedTech companies, three-quarters of which also have products on foreign markets. Conversely, eHealth primarily targets the domestic market, and only 22% of companies have products on foreign markets.

In contrast to the top destination for subsidiaries, Europe remains the primary target market for HealthTech companies, ahead of North America. But the United States is once again the leading country targeted, with Germany coming in second place. Although their markets may seem smaller, Belgium and Switzerland are also attractive destinations for France's HealthTech companies in their sales strategies in Europe. Japan, the world’s third largest market, is the main Asian market targeted. With a growing presence in China, some HealthTech companies have ambitious designs on this vast emerging market, although access remains complex.
HealthTech, an industry that generates direct and indirect employment

French HealthTech companies represented a total of nearly 50,000 direct and indirect jobs in 2020, the vast majority of which were highly qualified. Virtually all the companies intend to recruit new staff in 2021.

Number of direct and indirect jobs in the French HealthTech industry

With more than 50,000 direct and indirect jobs in 2020, HealthTech could generate an additional 130,000 jobs over the next decade. The sector also creates highly qualified jobs, especially in R&D (42% of jobs) and production (20%), positions which require highly specific, advanced skills and expertise (skills in biomanufacturing, for example).

Qualifications of staff

The majority of staff (57%) have at least a Master’s degree, and nearly a quarter have a PhD.

Gender parity

HeathTech companies are nearly at gender parity, with an average of 55% men and 45% women.

A few figures

- 30% of companies have PhD students under the CIFRE co-funding scheme in their teams.
- 1 company in 3 has recruited recent PhD graduates (an average of 3 per company).
- 43% of HealthTech companies use apprenticeship contracts.
- Use of the VIE international internship programme is still relatively rare: just 5% of companies have a VIE intern in their teams.
- 26% of HealthTech companies have staff with disabilities in their workforce.
Good prospects for employment in HealthTech in 2021

Do you intend to recruit new staff in 2021?

Despite the difficult economic context, HealthTech companies are demonstrating their resilience to the crisis. **84% of HealthTech companies intend to recruit new staff in 2021**, with an average of 5 jobs per company. In the short term, the most sought-after positions are in R&D (36% of jobs), production (19%) and support functions (18%).

Source: France Biotech, 360 companies, December 2020

In 2021, **73%** of companies intend to recruit apprentices and **13%** VIE interns.

Outsourcing, a characteristic of the sector

The HealthTech ecosystem is composed of multiple research and production companies that support companies in developing and producing their products.

Among companies outsourcing some of their business processes, **the most frequently outsourced functions are in R&D**, which is outsourced at least in part by three-quarters of the companies, followed by support functions (HR, accounting, etc.) and production. HealthTech companies are part of a flourishing ecosystem composed of CROs (contract research organisations) and CDMOs (contract development and manufacturing organisations) with specific expertise in research, development and production in the area of drugs, biopharmaceuticals and medical devices.

Source: France Biotech, 274 companies, December 2020
Major efforts in R&D

HealthTech companies are mostly spin-offs from public research. They are highly innovative – more than half of their spending is on R&D and they have filed more than 30,000 patents.

Source of R&D

Public and academic research plays a vital role in the establishment and development of the HealthTech industry. More than half of companies (52%) were spin-offs from public research. For biotech companies, this number is even higher (two-thirds), whereas three-quarters of eHealth companies developed their R&D from in-house research.

Amounts invested in R&D by companies in the sample

Innovative companies in the field of health invested more than €800 M in research and development in 2019 – almost twice as much as the total amount invested in 2014. The R&D budget is the biggest expense item for companies, accounting for 58% of their total expenditure on average. Companies invest an average of €3 M each year in this area, but once they embark on clinical development the amount can soon reach tens of millions of euros. Nearly half of all staff in the companies work in research and development.

Geographical distribution of patent applications

 Intellectual property is one of the key strengths and challenges of the HealthTech industry. 70% of companies overall and 83% of biotech companies have protected discoveries by filing national and international patents since inception. A total of 6,817 patents have been filed by the companies in the sample (an average of 24 patents per company). The HealthTech sector as a whole has filed more than 30,000 patents, more than half (56%) outside Europe. Intellectual property protection takes place at an early stage; 53% of companies set up less than 5 years ago have filed at least one patent.

Source: France Biotech, 400 companies, December 2020

Source: France Biotech, 284 companies, December 2020

Source: France Biotech, 263 companies, December 2020
Varied technologies and application areas

The majority of companies in the survey are biotechnology companies, followed by MedTech companies. eHealth and bioinformatics are continuing to grow year on year.

Types of companies under study

Biotech companies represent nearly half the sample in the survey, followed by companies developing medical devices and diagnostics (a quarter of companies). eHealth continues to grow, with around 60 companies in the sample (16%, up from 13% in 2019).

Source: France Biotech, 405 companies, December 2020

Business areas of the panel

The French HealthTech industry is highly varied in its fields of application, although two-thirds of companies are developing therapeutic products and solutions for use in humans. Innovative medical devices, whether purely MedTech or diagnostic products or devices incorporating artificial intelligence, are also strongly represented and are increasing year on year. Bioinformatics, which also includes software, is now one of the top three business areas of the companies in the survey. This reflects the growth in these technologies, which are used both as products and services in their own right and to support research by biotech companies.

Source: France Biotech, 403 companies, multiple choice questions, December 2020
Innovation potential that meets crucial medical needs

Over and above the dynamic growth, job creation and economic potential of HealthTech, the sector is currently developing more than 4,000 biotech products and medical and digital innovations to meet medical and logistical needs.

Number of products in development and marketed by French HealthTech and product aims

With an average portfolio of 2 to 3 products per company, the HealthTech pipeline is gaining strength, reflecting the companies’ growing maturity. The remarkable diversity of the assets developed by these companies represents a major pool of innovation potential.

The aim of most of the products is to make significant progress in terms of treatment and optimisation of the patient care pathway, thereby improving the health system as a whole. A third of biotech products are curative treatments aimed at eradicating a disease. These include gene and cellular therapies, antiviral treatments and small molecules. A quarter of products aim to improve life expectancy (immunotherapies, antibodies, etc.) and 12% offer preventive solutions (prophylactic vaccines, etc.).

A third of the medical devices developed by MedTech companies are already on the market; the aims of these products include early diagnosis (in vitro diagnostics, imaging, etc.), avoiding the complications associated with some diseases (20% of products) and improving life expectancy.

Most eHealth solutions are already on the market, thanks to a shorter development cycle. These solutions have a variety of applications; their aim is to improve patient treatment, optimise the care pathway and facilitate earlier diagnosis. (see the eHealth section).
Collaborative international research

Public research institutions and universities are the leading partners for innovative French companies. Most collaboration agreements are in the area of R&D. Research is conducted on an international basis, with most cooperation taking place with European and US partners.

With 71% of companies engaged in ongoing partnerships, collaboration is an integral part of the HealthTech business model. More than half of these partnerships are with academic teams, public research teams or foundations. Since companies’ R&D primarily comes from academia, most companies continue working in cooperation with the public sphere when it comes to technology transfer (asset purchases and licensing) or developing R&D collaboration. Partnerships with industry players such as pharmaceutical laboratories or MedTech manufacturers are also very frequent and represent a third of all collaboration. They are mainly set up for advanced clinical phases, although laboratories are increasingly also involved in upstream research, for example in the case of consortia involving public research teams and biotech companies. Most agreements concluded by HealthTech companies are in the area of R&D, representing three-quarters of partnerships, while licensing deals for assets account for 13% of agreements.
Geographical origins of international partnerships (% of agreements)

- **North America**: 35%
- **Europe**: 47%
- **Asia**: 8%
- **Others**: 10%

Source: France Biotech, 121 companies, December 2020

**Top 5 nationalities of partners**

1. **United States**: 82
2. **Germany**: 34
3. **UK**: 17
4. **Switzerland**: 17
5. **Belgium**: 12

Source: France Biotech, 121 companies, December 2020

A third of partnerships are concluded with foreign stakeholders. European research teams and companies are among the leading partners of French companies, closely followed by those from North America. In terms of numbers of agreements, the United States comes in first place, followed by France’s close neighbours in Europe: Germany, the United Kingdom, Switzerland and Belgium. The countries most represented in partnerships are also those with a strong research dynamic, whether in the university sphere or in industry. On the Asian continent, China and Japan top the ranking, with 8 and 7 partnerships respectively.
Focus on biotech companies

A biotechnology pipeline that is gaining strength, with nearly 2,000 products in development, a third of those in clinical trials.

**Therapeutic areas**

<table>
<thead>
<tr>
<th>Therapeutic Area</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncology</td>
<td>142</td>
<td>105</td>
</tr>
<tr>
<td>Infectious diseases</td>
<td>123</td>
<td>74</td>
</tr>
<tr>
<td>Central nervous system</td>
<td>33</td>
<td>41</td>
</tr>
<tr>
<td>Ophthalmology and sensory organs</td>
<td>42</td>
<td>69</td>
</tr>
<tr>
<td>Metabolism (diabetes, obesity)</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Inflammation</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Genetic disorders</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Immune system</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cardiovascular system</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rheumatology/musculoskeletal system</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dermatology</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Digestive system</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

French biotechnology companies are developing products in all areas of therapeutics. Oncology is the treatment area that attracts the most research, representing 30% of R&D programmes (121 products). Many companies also focus on infectious diseases (14%) and the central nervous system (11%), fields in which there are still many unmet medical needs.

Some specialist French biotech companies also have extensive expertise in specific genetic disorders, including rare and orphan diseases.

14% of products developed by French biotechnology companies have orphan drug designation.

**Development phases of products created by the biotech companies in the sample**

Despite a high attrition rate for biopharmaceuticals, the strong pipeline of French biotech companies means that we are seeing biotech products gradually advancing to market. The companies’ R&D pipeline reflects France’s scientific productivity in a broader sense. In 2020, 57% (228 products) of research programmes were focused on early phases (proof of concept and preclinical), compared with 67% for these same phases in 2015. 22% (88 products) were in more advanced phases (Phase II and Phase III), compared with 19% (63 products) in 2015. Most products currently on the market are ophthalmology or dermatology products or vaccines.
Focus on MedTech companies

Medical technologies are well represented, whether technologies in class I or classes II and III, IVD MDs or AIMDs. Half of the products developed are already on the market.

Classification of medical devices

- **In vitro diagnostic medical devices (IVD MDs)**
  - Class I: 18%
  - Class IIa: 18%
  - Class IIb: 17%
  - Class III: 16%
  - Other: 5%

**Examples of technologies:**
- IVD MDs: Self-tests, tumour markers, assay reagents, etc.
- Class I (the class with the lowest risk): Dressings, glasses, crutches, etc.
- Class IIa (moderate/measured potential risk): Syringes for infusion pumps.
- Class IIb (high/significant potential risk): Anaesthesia or dialysis machines.
- Class III (the class with the highest risk): Breast implants, stents, hip implants, etc.
- AIMDs: Pacemakers, defibrillators, cochlear implants.

The technologies developed by MedTech companies draw on wide-ranging know-how and expertise in an equally wide variety of therapeutic fields. The leading category is in vitro diagnostic medical devices (IVD MDs), representing a quarter of all products. Medical devices (MDs) in classes I to III are being developed by the companies in the sample in equal proportions.
TECHNOLOGIES DEVELOPED BY THE FRENCH HEALTHTECH INDUSTRY

Therapeutic areas of the medical devices on the market or in development (% of products)

In total, the 177 MedTech companies in the survey are developing and marketing 304 products, with an average of 2 products per company. Taking the French MedTech sector as a whole, this represents more than 2,000 devices in development or on the market. All therapeutic fields of medicine are represented in the panel of companies in the survey, with more than 18 categories of applications. The most frequent application is surgery (general, orthopaedic and reparative), with 44 products (17% of products), followed by the cardiovascular system, imaging, oncology and neurology.

Half of the medical devices developed by French MedTech companies are at an advanced stage of development, either in the process of obtaining a CE mark (45 products) or already on the market (91 products). The maturity of the sector can be explained by the fact that development times are shorter than for biopharmaceuticals (3 to 5 years vs. 10 to 15 years for biopharmaceuticals). The number of products on the market has also grown by 15% compared with 2019, a sign of the growing maturity of the MedTech sector.

Out of the companies in the sample, 91 medical devices, aimed at a variety of different conditions and fields, are already on the market. MDs for surgery and neurology represent the highest number of products. The main aims of the innovations developed by MedTech companies are early diagnosis, avoiding the complications associated with some diseases, and improving patient autonomy. Over and above the undoubted benefits for patients, these products also lead to savings in treatment costs for the health system and enable a faster return to independent living for patients.
At a time when digital transformation is resulting in major changes for companies, the health innovation sector is taking advantage of this technological progress. A total of 154 products are being developed or marketed by the eHealth companies in the sample. eHealth, also known as digital health, has a role to play throughout the entire patient care pathway. Its applications are wide-ranging and are aimed at a variety of users: laboratories and biotechnology companies, patients, healthcare professionals, clinical organisations and payers.

Big data in health represents a major opportunity for the future of healthcare. While only 8% of products fell within that field of application in 2017, this year the figure has almost doubled, propelling big data to second place among the fields of application for connected health products. Connected devices, biosensors and digital medical devices remain in top place.

The digital health market is growing in maturity; the number of products on the market has increased significantly in just three years. In 2017, just 38% of the products developed by digital health companies were on the market, compared with 57% in 2020. The adoption of these tools by health systems has partly been prompted by the health crisis, with telemedicine and patient telemonitoring solutions proving particularly useful and relevant in a difficult health and clinical context. Despite the regulatory obstacles, the eHealth sector has a very promising future.
"We are inventing drugs based on artificial intelligence and disruptive quantum-inspired algorithms."

Aqemia, a DeepTech startup, recently announced an agreement with Sanofi aimed at facilitating the discovery of effective treatments for COVID-19.

Before we turn to the signing of your agreement with Sanofi, could you explain a little about your disruptive innovative approach? We specialise in the discovery of small therapeutic molecules using artificial intelligence (AI) and quantum-inspired theoretical physics. We have designed generative AI algorithms combined with disruptive proprietary algorithms to calculate the affinity between a therapeutic target and small molecules (an essential property of drug candidates). Our algorithms for calculating affinity are as precise as the market leader but 10,000 times faster. We are inventing new molecules that are effective against a therapeutic target.

What is the specific therapeutic target in your agreement with Sanofi? Under the partnership agreement concluded with Sanofi, the therapeutic target is the main protease of the SARS-CoV-2 virus which causes COVID-19. This protease is what causes the virus to reproduce in cells, enabling it to spread throughout the body. Aqemia’s aim is to tackle this “lock”, the protease, by identifying and creating small molecules that act as “keys” against the coronavirus and can prevent it from replicating.

What is your business model? Our business is currently based on a collaborative model. We work on a project basis in partnership with pharmaceutical companies to invent small molecules that are effective on specific therapeutic targets.

"In the medium term, Aqemia’s aim is to develop its own portfolio of internal projects, in other words to invent molecules that are effective on its own therapeutic targets."

With this first agreement signed with Sanofi, a world leader in drug research, Aqemia has taken a new step in its development. This first collaboration is an endorsement by industry of the efficacy and unique nature of our technology. It is also a valuable seal of approval in commercial terms.

In the medium term, Aqemia’s aim is to select its own therapeutic targets for which it will invent effective molecules. These molecules will then be developed in Aqemia spin-offs: our software platform is scalable and will select the best molecules so that single-product biotech companies can be set up and generate industrial value. We are currently raising funds to speed up the development of this second part of our business model.
THE IMPACT OF COVID-19
How the pandemic reminds us that health is a vital asset

The health crisis has strongly impacted HealthTech companies throughout their value chains. The medical innovations pioneered by these HealthTech companies have proved how important and promising they are in fighting the emergence of new diseases.

2020 was a year like no other. The pandemic has pushed healthcare systems to the limit and sorely tested every economic sector on a global scale. This unprecedented health crisis has reminded us of the importance of health and well-being. Although healthcare industries have been less affected than other business sectors (hospitality, etc.), they have felt the impact all the same. Innovative SMEs were able to bounce back thanks to unprecedented aid from the French government. The diagnostic, therapeutic and organisational innovations of these companies could play a key role in enabling healthcare systems, patients and the economy to get back on their feet again.

Impact of the health crisis on business as a whole for HealthTech companies

In 2020, the COVID-19 pandemic had a strong to very strong impact on half of the companies surveyed. The impact was felt to varying degrees according to the business sector of the various companies. Whereas 60% of biotechs were slightly or moderately impacted, 65% of MedTechs declared they were strongly or very strongly impacted.

Impact on upstream research and preclinical development activities

The R&D of companies has felt the impact of the health crisis, throughout the product development cycle. The overall effect on the research and preclinical activities of companies in 2020 has not been the same for everyone: a third of companies were barely or not affected at all, a third were moderately impacted, and the remaining third were strongly or very strongly impacted. During a survey carried out in April 2020, at the height of the first lockdown, most of the companies (59%) declared a steep decline or even a complete halt in research and preclinical activities (source: Crise sanitaire COVID-19, Impact sur les sociétés HealthTech françaises [The COVID-19 health crisis: the impact on French HealthTech companies], May 2020, France Biotech).

Many research laboratories and animal facilities were closed, which halted cell cultures and preclinical research. Business only gradually picked up again during the second half of 2020, with a moderate overall impact for 2020.
Focus on clinical trials
Impact of the health crisis on the clinical activities of HealthTech companies

Between February and September 2020, just over a quarter of companies (28%) had a clinical trial in progress. Three-quarters of the companies faced major disruptions to their clinical trials:
- Either significant delays (45% of companies)
- Or a complete halt in clinical trials (32%)

The events of 2020 led to much heavier workloads in hospitals, which meant that clinicians were less available and it was more difficult to enrol patients. Regulatory agencies were also affected, as they received an increasing number of applications for research programmes for tackling COVID-19, which impacted response times for other research applications.

With the gradual decrease in hospital admissions for patients with COVID-19 and the easing of health restrictions during May, hospital-based research activities were able to resume. As a result, during the second half of 2020, the situation improved overall and 70% of companies were able to take up their clinical trials again. Despite this, the delays experienced in clinical research programmes (3 to 6 months on average) will have slowed down the publication of clinical findings and set back the objectives of some biotechnology companies.

Production and marketing
Procurement and supply chain issues

Almost half of the companies (44%) encountered procurement and supply chain issues during the second and third quarters of 2020. The situation seemed to improve overall by the end of 2020.

However, a quarter of companies were still experiencing delays, with some seeing a gradual pick-up in activity albeit in stops and starts.
The business activity of companies was also strongly affected by the crisis. More than half of companies saw their business activity plunge or come to a standstill. Companies mainly put this down to manufacturing issues resulting from difficulties in sourcing raw materials, export problems and a decline in orders. The impact was felt differently according to the business sector. Companies developing medical devices were hardest hit (two-thirds of them saw a steep drop or total halt in activity), whereas a third of digital health or diagnostics sector companies actually witnessed an increase in activity, especially where teleconsultation and remote patient monitoring services were concerned.

By late 2020, the manufacturing and sales of healthcare products picked up again for most companies. Nevertheless, the consequences of the crisis were still being felt at the end of the year, with a persistently lower level of activity for 41% of companies.

The different lockdowns combined with the restrictions on travel, including abroad, severely impacted the business development activities of healthcare companies, as in other sectors. To begin with, the major annual events were cancelled (BioSpring in March, Vivatech in May), postponed, or transformed into digital gatherings (BIO). The global pandemic profoundly changed the way in which companies communicated with partners or potential business leads. According to HealthTech companies, although half of them were strongly or very strongly impacted, the onus was on adapting to new practices rather than stopping business development altogether. In fact, a large number of existing partnership ventures continued to develop, and new ones were even set up. As for business development, and despite the difficulties, some biotechnology companies actually managed to raise capital during the first lockdown. Today, partnerships are at a stable level or on the increase for 70% of companies.
The impact of COVID-19 on HealthTech funding

The health crisis strongly impacted the activity of companies in 2020, notably by pushing back publication dates for research findings and by affecting fundraising and cash flow.

In early April 2020, three weeks after restrictions were put in place during the first lockdown, half of the companies had declared that they were facing financial difficulties and 60% were facing cash flow problems. For a third of the companies in difficulty, they only had enough cash flow for three months at most. MedTech companies were hardest hit, with 71% of them in difficulty. This is because they are more reliant on their sales than biotechnology companies, which take longer to start generating income in most cases (source: Crise sanitaire COVID-19. Impact sur les sociétés HealthTech françaises [The COVID-19 health crisis: the impact on French HealthTech companies]. May 2020, France Biotech).

With an intense and recurring need for capital, almost a third of companies were in the process of raising funds in April 2020. For some, the situation led to difficulties in securing funds, with investors preferring to have more visibility before signing.

The economic crisis caused by numerous business activities having to be put on hold, and the financial hardships encountered by all sectors encouraged the French government to set up compensatory schemes to boost the cash flow of companies and avoid layoffs and divestitures.

As a result, numerous HealthTech companies applied for state-guaranteed loans, the government’s flagship initiative rolled out in 2020.

- 76% of companies were eligible for state-guaranteed loans in 2020.
- Among those eligible, 66% were granted a loan.

The European Investment Bank (EIB) also played an important role during this period:

- In 2020, 19 companies applied for EIB funding or loans.
- 7 companies had their applications accepted in all.

Types of funding sought by HealthTech companies in 2020

- 65% of companies sought funding
- 35% of companies had no funding

Significant cash needs meant that 65% of companies sought funding in 2020. Most of the financing was non-dilutive as companies opted for loans over capital increase.
Human resources

Beyond research activities, partnerships, marketing and financing, the health crisis also had a profound impact on human resources management in HealthTech companies.

- 1 out of 2 companies resorted to short-time working between February and September 2020, for 46% of employees on average
- R&D was the job sector most affected by this measure
- 92% of companies had employees working from home during this period

In November 2020, working from home continued for almost all companies (87%)

The French HealthTech industry committed to tackling COVID-19

HealthTech companies responded to the health emergency by developing innovative prophylactic, diagnostic, therapeutic and digital solutions.

Thanks to their expertise in all kinds of areas (diagnostics, inflammation, immunology, viral infections, etc.), biotech and MedTech companies have been quick to put their knowledge to good use and join the fight against COVID-19. Where France HealthTech Panorama companies are concerned, 26% of them launched at least one research programme, and 86% of the programmes were still ongoing at the end of 2020.

Type of products developed by HealthTech companies to fight COVID-19

As soon as the pandemic started, HealthTech companies sprang into action to find vaccine, diagnostic and therapeutic solutions. More than a hundred products have been developed by HealthTech companies to tackle the health crisis.

Most of the products developed are treatments. By strategically repositioning themselves, some biotechnology companies, such as those developing molecules with anti-inflammatory properties, were able to realign some of their research objectives towards tackling COVID-19. A large number of such molecules are now at the clinical trial phase and the results are promising. Similarly, diagnostics companies also got to work on finding solutions, which included developing SARS-CoV-2 PCR test kits or antigen kits, and using biomarkers to identify potentially severe forms of the disease before they develop in patients. A dozen programmes focusing on vaccine development are also underway.

In 2020, numerous digital healthcare (eHealth) companies provided solutions to healthcare professionals, patients and healthcare systems. Several solutions, such as monitoring solutions for patients with chronic diseases, teleconsultation solutions and care pathway management solutions for hospitals, proved invaluable for managing the influx of COVID-19 patients and ensuring care continuity for other pathologies, such as long-term conditions and chronic diseases.

Faced with this unprecedented health crisis, all these solutions have shown that as well as being agile and responsive, HealthTech companies have an incredible potential for innovation. These technologies highlight the value and advantages of innovative approaches for patient health.
The Health Innovation Coalition: a response to the health crisis

A public-private coalition launched in response to the health emergency to help chronic disease patients.

The Health Innovation Coalition (CIS) was launched in March 2020 by France Biotech, France Digitale, MedTech in France and AstraZeneca, with the participation of the Paris Public Hospital Network (AP-HP) and the support of Bpifrance and EIT Health. The most vulnerable people, such as those suffering from chronic diseases (cancer, diabetes, COPD, asthma, heart failure, etc.), are particularly at risk in the context of the COVID-19 pandemic, where an overburdened healthcare system threatens continuity of care. The purpose of this coalition was to relieve congestion in the healthcare system to ensure chronic disease patients could continue receiving treatment. A dedicated platform was set up to identify the specific needs of care teams and propose a solution.

CIS in figures

50+ public and private healthcare stakeholders, including professional associations, patient associations, pharmaceutical laboratories and competitiveness clusters.

Roll out in 40 hospitals, public and private.

60,000 patients have benefited from these eHealth solutions.

> €2,000,000 raised to finance project roll-out.

350 eligible projects and over a hundred requirements identified by healthcare establishments and patient associations.

17 projects chosen and financed
Bpifrance, a key player in HealthTech funding

Bpifrance plays a leading role in the development of French HealthTech through its various operations, which include financial backing via innovation grants, capital investment for companies, and its fund of funds investment activity. 2020 was also marked by support and financing specifically aimed at tackling the COVID-19 pandemic.

Support provided in 2020

<table>
<thead>
<tr>
<th>Support for innovation</th>
<th>In partnership</th>
<th>Industrialisation</th>
<th>Equity</th>
<th>Fund of funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>€170 M*</td>
<td>€120 M</td>
<td>€130 M</td>
<td>€126 M</td>
<td>€140 M</td>
</tr>
</tbody>
</table>

- Support for innovation in R&D
  - PSPC Region
  - Support for DeepTech
  - I-Lab
  - Grands Défis
  - i-Nov Innovation competition
  - Managing emergencies
  - Ultra-rapid diagnostics

- PSPC
  - €36 M for 2 projects

- PSPC COVID
  - €64 M for 7 PSPC COVID projects

- Capacity Building CEI
  - €103 M for 10 projects

- Recovery plan
  - €30 M recovery plan

- InnoBio fund
- Patient Autonome fund
- PSIM fund
- French Tech Seed

- Seed funding
- Venture capital
- Growth capital
- To specialist healthcare funds

* 3 programmes launched following the health crisis

Investing in the Future and "Grand Défi" programmes

In connection with the Investing in the Future programmes, several initiatives have been launched by Bpifrance’s innovation department: funding for collaborative public/private R&D projects (key competitiveness-boosting projects or "PSPC"), national competitions (I-Nov) on 3 themes (managing emergencies, mental health, and rapid mobile diagnostics). Funding for DeepTech projects has also been granted to support high potential technological R&D by academic spin-offs.

The French government’s Innovation Council identified two major challenges, or “Grands Défis”, in the health sector, to tackle societal issues in strategic areas with outstanding technological barriers to be overcome. These Grands Défis received funding of €30 M from the “Innovation and Industry Fund” and were implemented by Bpifrance in 2020.

1. The Grand Défi – Bioproduction, a call for proposals entitled “Biopharmaceuticals – improving efficiency and controlling production costs”, was launched in 2020. The aim of this CFP was to provide solutions to the challenges met by the pharmaceutical industry in developing new biological molecules, with two clearly defined points of focus: "on-line controls" and "modular manufacturing facilities".

2. The Grand Défi – "Using artificial intelligence to improve medical diagnosis": 10 projects were selected under the CFP "AI to improve experience of the healthcare system". The winners received support from the Health Data Hub and funding in the form of a grant (ref. with List of winners).
Support for innovation in 2020

By granting more than €400 M of funding in 2020, Bpifrance has almost tripled the total annual amount of innovation and investment support provided to HealthTech companies. Almost €250 M was additionally invested in 2020 in response to the health crisis, to back research on COVID-19 (PSPC COVID-19) and investment in manufacturing (Capacity Building CEI), as well as the recovery plan for strategic sectors.

Specific schemes to bolster companies and research on COVID-19

Specific funding mechanisms were launched in 2020 with the backing of two new European Commission temporary framework schemes. Firstly, projects concerning the treatment of COVID-19 patients were eligible for aid covering up to 80% of the investment or R&D project costs (SA.57367). The government has therefore shouldered much of the risk alongside the innovative healthcare companies. It may also enforce a repayment clause in the aid agreement. Secondly, the SA.56985 scheme was introduced to help companies and support the economy, with up to €800 in aid per company.

"Capacity Building" Call for Expressions of Interest

In light of the health crisis, the French government decided to help companies – and their public partners – offering therapeutic solutions to tackle the current pandemic, as well as any similar future pandemics. The crisis highlighted the need to reconsider drug production value chains. The French government’s ultimate objective is to reduce Europe and France’s reliance on third countries by supporting investment in the manufacturing of healthcare products related to the COVID-19 crisis and, more specifically, the manufacturing of drugs, or their active ingredients, used to treat infected patients. The funding is targeted at developing new production capacities, or adapting current lines to improve their flexibility, which will make it much easier to ramp up production capacity in the event of a health crisis.

Two companies that received funding are Carelide, which is planning to modernise its paracetamol IV bag production line, and the Seqens Group, which is installing or relocating its active ingredient and intermediate compound production capacity at five French sites.

See the full list of winners at: https://tinyurl.com/Capacity-Building-laureats

Key competitiveness-boosting projects (PSPC) programme targeting the COVID-19 health crisis

This programme offers support for key collaborative research and development projects aimed at developing preventive or curative therapeutic solutions to tackle COVID-19. Direct economic and technological benefits are expected in the shape of new products, services and technologies. All therapeutic strategies were eligible (vaccines, antivirals, combination therapies, etc.) as well as all types of technology (chemistry, biotechnology, artificial intelligence, use of big data, and medical devices, where relevant).

7 projects were funded in 2020 for an overall total of €85 M.

One company that received funding was Innate Pharma, for Phase II of its FORCE and ImmunONCOVID-20 programmes. Another was Abivax, which received funding for its Phase IIb/III clinical trial involving patients with COVID-19, as well as for increasing the production of its drug candidate ABX-464.

See the full list of winners at: https://tinyurl.com/pspc-laureats

Recovery plan for industry – strategic sectors

In light of the COVID-19 crisis, the French government has pulled out all the stops to provide financial support for investment in manufacturing and modernising production. This particular call for proposals has enabled the French government to back the best investment projects, to strengthen the autonomy and resilience of French manufacturing sectors. The ultimate aim is to reduce reliance on non-European suppliers, while also developing promising sectors, to foster value creation in France and across Europe.
HealthTech sector projects received overall funding of €30 M in 2020. The call for proposals has been renewed for 2021 with significant earmarked funding.

Two of the companies that were awarded funding in 2020 are: Haupt Pharma, which has invested in a 30% production capacity increase for anaesthetic ampoules for patients with COVID-19 in intensive care, and Rovipharm, which has also invested in a production capacity increase for consumables to meet the explosion in demand for medical testing linked to the health crisis.

State-guaranteed loans in 2020

In response to the economic shock caused by the coronavirus crisis, the French government introduced a €300 Bn loan guarantee scheme, known as the “PGE”, to secure bank loans to businesses. The purpose of the "Innovation Support PGE" has been to help consolidate the cash flows of innovative startups, SMEs and mid-caps with a turnover of under €1.5 Bn in France hit by the health crisis. This dedicated innovation loan facility is secured by the state guarantee scheme and available to meet cash flow requirements related to the current economic situation and/or one-off working capital requirements.

Numerous HealthTech companies benefited from this scheme to ease cash flow, which was hit hard by the health crisis.

Direct and indirect investments in 2020

Bpifrance injected €126 M into the capital of the sector’s innovative companies via 11 new investments, including six biotechs. Bpifrance has several funds reserved for the healthcare sector: the Innobio 2 and Patients Autonome (Lucine, Nouveal and Mila) funds, as well as more general funds, such as Large Venture (Owkin, Dynacure), PSIM and the French Tech Seed fund for supporting DeepTech startups in their post-maturation phase.

Bpifrance also indirectly invests in companies via its fund of funds vehicle. By the close of 2019, Bpifrance had underwritten more than €9 Bn in partner funds which raised a total of €48 Bn. The dry powder of partner funds totaled €20 Bn, with €4 Bn earmarked for the healthcare sector. In 2020, Bpifrance invested €140 M in healthcare sector funds, representing an overall total of €600 M in funds, including Jeito, Biodiscovery 6 and Kurma Diagnostic 2.

Support for HealthTech startups in 2020

Bpifrance also provides solutions to support businesses in general. This can include advice on going global and information about ecosystems and markets. We organise strategic seminars with the various ecosystem stakeholders, as with our France Biotech partnership.

Moreover, the Hub team provides a comprehensive, tailored programme to support the development of startups that have received venture-capital investments from Bpifrance.

The Hub’s HealthTech programme was specifically designed to complement Bpifrance’s investment in healthcare sector companies – Biotech, MedTech and Digital Health startups – and help them meet the requirements and challenges of the sector: long development cycles, regulatory requirements, the scientific, technical and medical stakes involved, substantial financing needs, etc. A dedicated team provides personalised support, with the specifics of each business and its needs in mind. This service includes practical operational support, access to expert knowledge (technical advice and privileged access to major players), peer-to-peer sharing, and targeted networking.

Since its launch in 2018, the HealthTech Hub has supported 27 startups – eight of which in 2020 – such as Diotheris, a biotech which develops skin microbiome-based anti-infective therapies to tackle the emergence of antimicrobial resistance; Incepto Medical, which produces and markets AI applications for medical imaging; and more recently, Lucine, which has developed a digital therapy application to measure and relieve chronic pain.
COVID-19, a game changer in terms of liability for company directors?

The COVID-19 crisis has led to an increase in all kinds of financial, operational, legal and regulatory risks for company directors. Although their liability remains unchanged, there is reason to be vigilant during the current crisis.

There is no existing statutory or regulatory text defining a company director (or dirigeant) in France. The only roles described are those of company representatives: chair, Chief Executive Officer, Chief Operating Officer, manager, executive board member, supervisory board member or director. We need to turn to case law or articles of association to find definitions of the role of company directors.

Over time, a number of indications on what being a company director means have been derived largely from corporate case law. A distinction is made between de jure directors, who are formally appointed by company representatives and invested with the power to manage the general affairs of the company, and de facto directors, who have an independent, proactive managerial, director or administrative role without officially holding a corporate office.

The legal situation surrounding director liability has significantly changed in recent years. Although liability has been reduced in the event of insolvency, directors still carry the burden of numerous obligations to the company, partners or third parties, which has led to the professionalisation of the role of director.

On 4 May 2020, with the easing of lockdown measures, the French Prime Minister, Edouard Philippe, gave a quick reminder of the issues surrounding the criminal liability of directors: “The issue of liability with regard to COVID-19 is no small matter.”

Director liability, however, is not limited solely to criminal liability for the physical safety of employees. COVID-19 has not changed the basis of director liability as such. Instead, it has heightened the risks faced by companies.

COVID-19 – an increasing number of risk factors

COVID-19 and the subsequent lockdown has had a major impact on risk factors. Rather than list them all here, we have singled out the most salient COVID-19 risks in terms of director liability.

**Financial risks**

According to several surveys such as those commissioned by the Banque de France and France Biotech, the health crisis has had a significant impact on the business of companies, with a knock-on effect on their financial needs.

Two-thirds of the companies surveyed considered that COVID-19 had severely impacted on their business, and to varying degrees according to the sector: 24% of companies shut down their sites and 41% reported partial suspension of business. These figures are in line with the findings of France Biotech’s survey: 45% of companies fully or partially suspended operations, with businesses in the R&D and clinical trial sectors hardest hit.

All the company directors surveyed acknowledged that COVID-19 had given rise to financial difficulties, such as:

- An average decline in turnover of 10%. This financial indicator holds little relevance for most biotechs, which generate little or no turnover.
- Negative earnings for 33% of companies, compared with 18% in 2019.
- An increase in debt for 31% of companies.
- A 10% reduction in cash flow for 21% of the companies surveyed: for the biotech sector, 60% of companies notably experienced cash flow problems.
- An increase in indirect costs related to home working, health protocols and handling production line disruptions, etc.

**Operational risks**

Working from home has become the norm since lockdown, resulting in an increase in psychosocial risk factors related to a feeling of isolation, addictive habits (drinking, smoking, eating), a deterioration in working conditions and a lack of clear boundaries between private and professional life. All the surveys conducted on the issue reported an increase
in stress, depression, work overload, physical and verbal violence, disinterest in the company and musculoskeletal disorders, etc.

To maintain economic momentum, the French government issued a national health protocol, and updated it several times. This protocol has no statutory or regulatory force. However, in an emergency proceeding on 19 October 2020, the French Council of State stated that the protocol "is a set of recommendations for ensuring employers meet their health and safety obligations to employees in the context of the COVID-19 epidemic, recalling existing obligations under the French Labour Code." In an atmosphere of urgency and uncertainty regarding the understanding and interoperability of the different standards, companies are under obligation to take measures to protect their employees and to adhere to procedures on implementation of such measures. We noted a direct impact on work organisation, employee training and information, and dialogue with staff representative bodies, etc.

Moreover, given that working from home is the new norm, companies have also been increasingly exposed to cybersecurity risks. Here are a few figures illustrating this:

- **350 cyber attacks** in April 2020 as compared to the usual 100-150.
- **47%** of people fall for phishing scams when working from home.
- The average cost of a data breach is **$137,000**.

**Over half a million video conference users** have had their personal data stolen and sold on the dark web.

### Statutory and regulatory risks

The health crisis has added yet more layers of statutory and regulatory requirements, with over 400 texts being issued and updated daily. We have sensed a growing anxiety among directors on how to ensure organisational aspects, business continuity and future prospects.

The French Financial Markets Authority recalled best practices concerning financial information for listed companies in connection with the COVID-19 crisis: (I) under continuing disclosure requirements, the issuer should communicate any significant impact the pandemic has on business, performance, or prospects, and which may influence stock prices; (II) under periodic disclosure requirements, the issuer should outline the main risks and uncertainties the company faces in its management report.

### Risks in terms of director liability

By way of reminder, becoming a company director requires no formal qualifications or extensive special skills, and no knowledge of regulations applicable to company management. Upon appointment, directors are presumed to have the competencies for the job. As representatives of the company, directors have extensive powers to act in the interest and on behalf of the company. Consequently, they owe a legal duty of care and loyalty to the company and agree to undertake non-compete obligations, provide honest and fair information, guarantee transparency and not use their position improperly. Directors are not only responsible for keeping members, shareholders and employees informed. Today, they are increasingly held liable for all management actions that affect company life.

**Directors can find themselves personally liable for any failure to perform these obligations. Liability can be civil, criminal or administrative. The company cannot assume the burden of these liabilities which put directors’ personal assets directly at risk.**
Current circumstances have led us to look more closely at some of the liabilities that are directly linked to COVID-19: 

**Criminal liability: failure to perform health and safety obligations**

The health and safety obligations of employers are governed by the provisions of Articles L. 4121-1 and L. 4121-2 of the French Labour Code, which set out the legal duties of employers in terms of protection:

Article L. 4121-1: “The employer shall take all necessary measures to guarantee the safety and protect the physical and mental health of employees. These include: 1) measures to prevent occupational hazards; 2) information and training initiatives; 3) establishment of appropriate organisational arrangements and resources. The employer shall ensure that these measures are adapted to reflect changing circumstances and serve to improve existing conditions.”

Since the Air France ruling of 25/11/2015, the employer’s health and safety obligation has become an enhanced best-efforts obligation. This means that the employer can be exempt from liability by proving that they took all necessary measures to safeguard the health and safety of their staff.

**Civil liability: breaches of corporate law and mismanagement**

Article 225-251 of the French Commercial Code stipulates that directors are individually or jointly and severally liable to the company or to third parties either for breaches of the laws or regulations or of the articles of association, or for mismanagement.

A simple breach of a statutory provision by a director implies presumption of fault. Directors are therefore held to an obligation of performance, and the onus of proof that mismanagement did not occur is needed to relieve them of liability.

In the event of force majeure the director may also be exonerated from all liability. Can COVID-19 be considered a force majeure event? On 28 February 2020, French finance minister Bruno Le Maire declared that the coronavirus would be considered a force majeure event for companies. Can application of the provision be extended to director liability?

We don’t think so. The Emergency Act of 23 March 2020 and its amendments have enabled the French government to relax corporate law, to allow general meetings and management boards to continue operating despite lockdown measures, while still protecting public interests. Consequently, directors will still be liable for any breach of these new provisions governing accounts approval and calling of general meetings.

**Mismanagement is the most common reason for director liability lawsuits.**

Under French statutory law, there is no definition of mismanagement. The decision is at the judges’ sole discretion on the basis of an in concreto analysis of the situation. Any act or omission by a director that is contrary to corporate interest could constitute mismanagement. Indeed, case law requires directors to manage corporate affairs with care, diligence and active engagement. In case law, mismanagement mainly involves inappropriate investment decisions, expenditure commitments that are disproportionate to company resources, negligence in supervising collection of receivables, underestimation of financial risks, careless management of everyday business, delays in presenting annual accounts, etc.

How will courts assess mismanagement in the light of the COVID-19 pandemic? The 2008 financial crisis provided a testing ground for considering the issue of mismanagement in such a context.

If a company experienced cash flow problems, it was ruled that the director was not liable for mismanagement, as the financial difficulties were related to the financial crisis and not management errors, and measures had been taken. Similar rulings were made concerning shortages of raw materials during the crisis. However, the charge of mismanagement was made if a company lost its main client and the director decided to pay out dividends regardless. Similarly, charges of mismanagement were confirmed if a board of directors abided by the decision to maintain significant development investments despite the impending economic crisis.

In light of the above case law examples, we consider that in the COVID-19 climate, no charges of mismanagement will be made in the following cases:

- **Cash flow problems**, if company directors took advantage of support measures such as state-guaranteed loans, deferment of tax and social security liability payments, direct tax rebates and renegotiation of bank loans, etc.
- **Cyber attacks** - particularly targeting sensitive data (e.g. medical data of patients in clinical trials) - if company directors have implemented cybersecurity best practices (e.g. antivirus protection, cybersecurity and phishing awareness training, etc.) and built a cybersecurity strategy.
Director liability for asset shortfalls

Despite the sharp decline in corporate defaults (29% for SMEs) in mid-November 2020 as compared with 2019, many commentators project a rise in insolvency proceedings for 2021.

We will limit our study to director liability for shortfall of assets in a company in liquidation under Article L651-2 of the French Commercial Code, which is one of the founding texts on director liability:

“In the event of insufficient assets under a court-ordered liquidation, if the shortfall is attributed to mismanagement the courts can decide that the cost of the shortfall is borne, in full or in part, by all or some of the de jure and de facto directors who contributed to company mismanagement. If there are several company directors, joint and several liability may be imposed by substantiated decision. However, in the case of mere negligence on the part of de jure or de facto directors in managing the company’s affairs, they may not be held liable for the shortfall. The limitation period is three years from the liquidation decision by court ruling.”

There is a presumption of liability – once the shortfall is recognised the court can hold a director liable. The onus is on directors to prove that they were not guilty of mismanagement. It is noteworthy that director liability will be recognised if mismanagement led to a shortfall of assets, regardless of whether it was the sole or main cause. Regarding the health crisis, it is highly likely that the following will be characterised as mismanagement by the courts: failure to seek financing or take steps to secure government aid, a lack of a business continuity plan, undue investments with regard to the financial situation, and payment of dividends considered excessive.

Best practices for limiting director liability

In the face of COVID-19, directors need to be able to take the right decisions, plan ahead, and communicate in a clear and transparent manner, while also navigating through a complex environment, often within very short time frames.

In this context, we advise companies and their directors to have systems in place enabling them to meet their legal obligations and limit liabilities.

- Establish a governance framework – corporate governance is not only for listed companies.
- Roll out tools and realign your strategies: establish a crisis management centre and risk mapping (update the risk map to include pandemic risk and new risk emergence, evaluate impact on organisational and financial performance), develop business continuity plans (reset priorities, safeguard stakeholder resilience, rethink your supply chain, etc.), review strategic plans, your business plan and related financial needs, and all internal and external communication plans (for shareholders, banks, suppliers, regulators, etc.).

Focus on best practices for health and safety obligations:

In the event of litigation, the courts will endeavour to check whether effective and adequate measures were taken. Directors will therefore need to prove that all the necessary prevention and protection measures were taken so as to exempt them from liability if an employee is exposed to a health or safety hazard or such a hazard arises. To limit liability, companies and their directors should document all procedures to justify the measures implemented, and notably undertake risk reassessments as part of unique risk assessment document updates.

We also advise companies on reviews of existing delegations of authority to ensure that effective health and safety delegation procedures are in place. Their purpose is to ensure that the powers naturally exercised by the director (to whom a presumption of liability for unintentional criminal misconduct applies) are indeed delegated to persons who, in the field, are best able to exercise these powers and to ensure the effective implementation of health and safety rules.

Our final word of advice is to have a director liability policy in place that covers civil liability, criminal defence fees and civil penalties.
FUNDING OF HEALTHTECH IN FRANCE AND AT GLOBAL LEVEL
2020: health takes centre stage

The health crisis and its demands have proved a real challenge for many companies in a sector faced with a constant race against time, pressure on the R&D phase due to the imperative of achieving results, and the critical importance of the funding timetable as a key success factor. Time stood still for several weeks while the whole world adapted to lockdown rules and turned to the health sector for solutions. In stark contrast, an injection of pace was required from those involved in fighting COVID-19. Biotechnology companies geared up to identify a vaccine or treatment, while diagnostics companies produced tailored tests to meet demand. Governments and health authorities stepped in, with both public and private funding in abundant supply. Contrary to previous economic crises, there has been no liquidity crisis in this sector, which has benefited all HealthTech companies. CÉDRIC GARCIA, PARTNER AT EY

Unsurprisingly, companies involved in the vaccine race raised record funds. Moderna raised almost $1.9 Bn in 2020 through two refinancing transactions on the financial markets, while in Europe, BioNTech raised $877 M (including $651 M in capital). However, other companies also benefited from this flow of funding. Towards the end of the first half of the year, significant funds were raised in other therapeutic areas. The largest sum of venture capital raised in the United States in 2020 was not used to finance a COVID-19 vaccine, but an innovative technology for modifying and repairing damaged genes. In June, SanaBiotechnology, a company based in Seattle, announced that it had raised over $700 M to finance its gene therapy development platform. It also proved a very active year in terms of IPOs for biotechnology companies, especially in the United States with an over 80% increase in sums raised (€9.2 Bn raised vs. €5 Bn in 2019). In particular, record funds were raised in June and July by Legend Biotech (€430 M) and Relay Therapeutics (€400 M), two companies specialising in oncology. This reflects unprecedented levels of support from the financial markets for these innovative companies. In Europe, Euronext-listed companies were also active on the financial markets. They raised €2.4 Bn to finance their growth, including €2 Bn in secondary financing raised by 73 HealthTech companies, with key deals struck by ArgenX (€829 M) in immunology, Sensorion (€30 M) and Gensight (€25 M), proving the increasing appeal of companies involved in gene therapy. In addition to these sums, €363 M was raised through 6 IPOs in 2020 (2 in Belgium and 4 in Norway).

History of fundraising by US and European HealthTech companies (IPOs and venture capital) (€Bn)
The medical devices sector also drew the markets’ attention, proof of renewed investor confidence. In particular, the market capitalisation of listed companies shot up 50% between January 2019 and August 2020, exceeding the rise in the general composite indices. The increase for eHealth companies alone was 65% (source: EY pulse report 2020). The medical devices sector was boosted by the strong growth of China. While Chinese companies dominated the entry-level medical devices market, the premium market was still controlled by foreign companies, mostly from the US. The Chinese government introduced new provisions to speed up the process for issuing marketing authorisations and the development of healthcare digitalisation. Chinese champions have thus emerged in cutting-edge technologies including genomics, digital technology and artificial intelligence. This process is reflected in financing transactions including the $1 Bn series B funding secured by Chinese company MGI Tech, a genome sequencing equipment manufacturer.

In the eHealth sector, the crisis has accelerated the digitalisation of care with the development of teleconsultation platforms and patient monitoring tools. Lockdown has removed some practical and psychological barriers. It has also profoundly changed practitioner and patient behaviour and the methods used to communicate medical information. The contribution made by artificial intelligence in terms of identifying treatments and cases, and diagnosing the virus has also been welcomed.

Venture capital

While the health crisis limited the number of transactions in the first half of 2020, it also shone a light on companies in the sector, thus attracting more funding. As such, 2020 saw the return of institutional and general funds, and, in Europe and Asia, contributions from public funds. In the United States, funds raised by SanaBiotechnology ($700 M), Lyell Immunopharma ($493 M) and Thrive Earlier Detection ($257 M) are among the top ten venture capital fundraising transactions completed in the past decade. These series A and B transactions confirm a trend observed since 2017, namely the interest shown in companies in the early stages of growth. The SanaBiotechnology capital increase also confirms venture capitalists’ appetite for companies that succeed in developing several treatments in the early stages of their growth, thus offering investors a more attractive risk profile. It is worth noting that none of these companies were involved in tackling the pandemic. A total of six US companies completed transactions amounting to over $200 M in 2020, all for series A and B funding to finance early phases of research and development.

In Europe, only two companies raised over €200 M in 2020: the German company CureVac involved in COVID-19 vaccine research, which was granted German and Qatari public funding, and the British company Bioneb, which completed a private placement with the Global Emerging Markets group’s alternative investment funds.

History of venture capital fundraising by US and European HealthTech companies (€Bn)

![History of venture capital fundraising by US and European HealthTech companies (€Bn)](image-url)
In the medical devices and eHealth sector, the sums raised were lower than results observed since 2017, particularly in the United States, where venture capital transactions in the medical devices sector amounted to €4.5 Bn compared to €5.2 Bn in 2019, despite interest in the development and marketing of diagnostic tests during the pandemic and digitalisation of healthcare. This fall was particularly pronounced in Q2 2020 and may be attributed to a slowdown in operational activity due to companies’ more limited access to their customers (clinics, hospitals, etc.), production sites (reduced access to production lines and subcontractors in Asia or the United States, slowdown in logistics flows, etc.), and financial activity, with funds initially redirected to pharmaceutical and biotechnology companies in order to meet more significant requirements.

Besides financing of companies in the sector, specialist investment funds also raised record levels of capital in 2020, particularly in Europe. This phenomenon is an indicator of confidence, suggesting that the number of financing transactions is set to increase in future years.

Financial markets

Despite share price volatility due to the health and economic crisis and uncertainties related to the US election and Brexit in Europe, the IPO market has never been so dynamic, continuing its growth initiated in 2016.

In particular, this growth is linked to the rise in transaction numbers and the appetite shown by institutional and private investors. For instance, in the United States, no fewer than 70 companies completed IPOs, including six transactions exceeding $400 M, confirming the sector’s dynamism on the markets. These companies include two biotechnology companies in the oncology sector (Legend Biotech and Relay Therapeutics) and two companies that develop medical devices, one of which is Maravai LifeSciences Holdings, which specialises in devices used in vaccine research, particularly for COVID-19.

In Europe, the situation was more nuanced, with little change in the number of transactions compared to 2019, a fall in the sums raised, and companies increasingly turning to US investors. For instance, one of the largest transactions was the German company CureVac’s IPO in the United States. The number of transactions performed by European companies has changed little, although trends in late 2019 suggested that several companies had initiated the IPO process in 2020.

History of IPOs by US and European HealthTech companies (€Bn)

<table>
<thead>
<tr>
<th>Year</th>
<th>European companies</th>
<th>US companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1.8</td>
<td>6.6</td>
</tr>
<tr>
<td>2016</td>
<td>1.6</td>
<td>4.8</td>
</tr>
<tr>
<td>2017</td>
<td>2.8</td>
<td>0.8</td>
</tr>
<tr>
<td>2018</td>
<td>5.8</td>
<td>1.6</td>
</tr>
<tr>
<td>2019</td>
<td>6.9</td>
<td>1.7</td>
</tr>
<tr>
<td>2020</td>
<td>13.3</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, Cfnews, Dealroom, VentureSource
Summary of HealthTech IPOs throughout the world between 2010 and 2020

<table>
<thead>
<tr>
<th>MARKET</th>
<th>COUNTRY</th>
<th>NUMBER OF TRANSACTIONS</th>
<th>SUMS RAISED (€Bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasdaq US</td>
<td>United States</td>
<td>573</td>
<td>52.06</td>
</tr>
<tr>
<td>Shenzen Stock Exchange (SZSE and ChiNext)</td>
<td>China</td>
<td>123</td>
<td>11.67</td>
</tr>
<tr>
<td>Euronext including Euronext Paris</td>
<td>Europe</td>
<td>82</td>
<td>2.27</td>
</tr>
<tr>
<td>Nasdaq OMX Stockholm</td>
<td>Sweden</td>
<td>78</td>
<td>1.72</td>
</tr>
<tr>
<td>Shanghai Stock Exchange (SSE and STAR)</td>
<td>China</td>
<td>65</td>
<td>7.78</td>
</tr>
<tr>
<td>South Korea Stock Exchange (Kosdaq and KRX)</td>
<td>South Korea</td>
<td>58</td>
<td>2.21</td>
</tr>
<tr>
<td>Hong Kong Stock Exchange (HKEK)</td>
<td>China</td>
<td>50</td>
<td>11.44</td>
</tr>
<tr>
<td>London Stock Exchange (AIM and LSE)</td>
<td>United Kingdom</td>
<td>43</td>
<td>3.9</td>
</tr>
<tr>
<td>Australia Stock Exchange (ASX)</td>
<td>Australia</td>
<td>41</td>
<td>0.79</td>
</tr>
<tr>
<td>New York Stock Exchange (NYSE)</td>
<td>United States</td>
<td>32</td>
<td>5.69</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, CFnews, Dealroom, VentureSource

FOCUS ON SPACS (Special Purpose Acquisition Companies)

The number of SPACs (special purpose acquisition companies) has increased to mitigate factors causing failure due to market conditions. These investment vehicles structured by a sponsor investor complete an IPO and subsequently merge with an operational company seeking to go public. The IPO process is similar to the standard procedure. Once the investment vehicle has been set up and its IPO completed, one or more target companies are identified and a merger-acquisition performed. During this final stage, the operational company is not exempt from the legal due diligence required for a standard IPO in accordance with local market authority requirements. However, the special relationship established between the sponsor and the operational company, and the fact that the merger takes place post-IPO limits uncertainties regarding the situation of the financial markets at the effective time of the IPO. In September 2020, 17 of the 133 SPACs active throughout the world (i.e. those that had completed an IPO and were seeking an operational target) were dedicated to the health sector, making health the second most targeted sector after telecommunications, media and new technologies.
3 QUESTIONS FOR...

Frédéric Cren, Chief Executive Officer and co-founder of Inventiva

"With the planned launch of the Phase III trial for NASH, 2021 looks set to be a very important year in clinical terms."

2020 was a landmark year for Inventiva with the publication of positive results for the Phase IIb clinical trial of lanifibranor for the treatment of NASH in June and its IPO on Nasdaq in the United States for a total of $107M in July.

Could you explain your reasons for the IPO on Nasdaq?

In anticipation of positive Phase IIb results being announced and to get a head start on preparations for the pivotal Phase III clinical trial, which would require considerable funding, we began to prepare our documentation for the IPO on Nasdaq in early 2020. As soon as the positive results were published in May, we were therefore ready to begin this venture on the stock exchange by filing the F-1 registration document on 19 June. There were two good reasons for this decision: firstly the fact that recognised US investors have an approximately 35% stake in our company, and secondly, of course, the outstanding clinical results of our drug candidate, lanifibranor, for treating NASH, a very severe liver disease, which is highly prevalent in the United States with one in every 10 Americans affected, for which a liver transplant is the only current therapeutic alternative.

What are the benefits of this IPO in the United States?

The US market is a major target for us and the IPO on Nasdaq was a real catalyst for Inventiva in terms of visibility and appeal to the financial community and beyond. It makes it easier for us to recruit talent and work with opinion leaders, while also bringing us closer to our shareholders.

What are your milestones for 2021?

We have recently finalised the design of our pivotal Phase III clinical trial of lanifibranor, which we plan to launch in the first half of 2021, with centres largely in the United States and Europe. We will be aided by the "Breakthrough Therapy" status granted by the FDA to our drug candidate lanifibranor last October. This programme is designed to accelerate development and regulatory assessment in the United States for promising drug candidates designed to treat severe and fatal diseases. At the same time, we are putting together a clinical team in the United States under the supervision of our new Chief Medical Officer, Dr Michael Cooreman.

Encouraged by lanifibranor’s success, we decided to focus our clinical activities on developing treatments for NASH and are in the process of assessing various options for optimising the development of odiparcil, our second drug candidate in the clinical phase, which is a mucopolysaccharidosis (MPS) treatment. Moreover, we are looking forward to our partner AbbVie completing the Phase I clinical trial of ABBV-157 for treating moderate to severe forms of psoriasis in Q1 2021. As regards our YAP-TEAD oncology programme focused on the Hippo signalling pathway, we are also planning to select a preclinical candidate this year to be eventually investigated in relation to lung cancer or mesothelioma. 2021 looks set to be just as important in clinical terms as 2020!
Europe: outperforming during the crisis

In 2020, over €14 Bn of capital was raised in Europe including €11.3 Bn in the market’s seven most dynamic European countries (the United Kingdom, France, Germany, Switzerland, Belgium, Sweden and the Netherlands). Despite the health and economic crisis, the sector has remained dynamic and a liquidity crisis has been avoided. This growth has been supported by new private and public funding. It has benefited companies involved in tackling the pandemic as well as other innovative companies in the sector.

In 2020, European HealthTech companies have benefited from structuring of funding at European level through both private and public channels. Firstly, the health sector has attracted new funding, which has been successfully collected by funds operating at European level. For instance, the Dutch fund Life Sciences Partners raised almost $600 M in March 2020, enabling it to invest in companies including DNAScript, Amolyt Pharma and Imcheck, proving both its ability to invest outside the Netherlands and the appeal of French companies. Conversely, Jeito Capital, a fund based in France, raised €200 M, selecting a Dutch company, Neogene Therapeutics, for its first investment. The European Union subsequently raised funds under the Horizon 2020 research and innovation programme and set up the European Innovation Council fund, which, by late 2020, had already made equity investments of €178 M in innovative companies, including an initial investment of €15 M in the French company CorWave as part of a €35 M funding round. The structuring of specialist funds and the significant proceeds raised in 2020 are indicators of investor confidence and future growth in Europe.

Although sources of funding are abundant enabling investments across national borders, marked contrasts exist among the countries observed. The United Kingdom is still in first place both in terms of completed transactions and amounts. The country draws on a dynamic network of companies supported by partnerships with universities, recognised investment funds including Wellington Partners, and an English-speaking environment facilitating participation from US investors and ultimately IPOs in the United States, leading to significant fundraising in this market.

France is in second place at European level in terms of amounts raised and total numbers of financial transactions between 2018 and 2020. French companies have access to highly dynamic venture capital, which has increased in the past 4 years. French companies are well-known for their innovativeness and, like their British neighbours, are able to draw on recognised research organisations. However, financing from IPOs is down.
Amounts raised in 2020 by companies from the top 7 European countries* (€M)

<table>
<thead>
<tr>
<th>Year</th>
<th>Venture capital</th>
<th>IPO</th>
<th>Refinancing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>3,520</td>
<td>910</td>
<td>7,617</td>
</tr>
<tr>
<td>2019</td>
<td>4,912</td>
<td>1,053</td>
<td>4,089</td>
</tr>
<tr>
<td>2020</td>
<td>5,910</td>
<td>1,431</td>
<td>3,951</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, Cfnews, Dealroom, VentureSource

European countries can be divided into two categories. In Switzerland, Germany and Belgium, large sums were raised, but the number of fundraising transactions was low. Conversely, in the United Kingdom and France, larger numbers of companies in the sector were able to access financing, although the individual sums raised were lower. Consequently, three of the ten largest fundraising transactions in 2020 in the top seven European countries were completed by German companies, CureVac, Evotec and BioNTech, with all types of financing taken into account. They alone raised €1.2 Bn, which is over 60% of the total funds raised in 2020 by German companies (€2 Bn). Similarly, the main corporate financing transactions in Switzerland were the refinancing of CRISPR Therapeutics AG and the ADC Therapeutics IPO, respectively worth €560 M and €216 M, which accounts for almost 40% of funding received by Swiss companies. It was possible to raise such significant sums largely due to support from a national pharmaceutical laboratory, which assumed the role of sponsor, and from US investors who supported the companies in the lead-up to their IPO.

Finally, Sweden and the Netherlands both have a dynamic network of small companies and local financing operators. Consequently, while smaller sums are raised, the number of transactions is proportionally higher at over twenty per country.

VENTURE CAPITAL: a record year for Europe

Although 2019 was an outstanding year for venture capital in Europe, due largely to the dynamism of specialty funds, it has been surpassed by 2020 despite the crisis. All companies in the sector benefited from the continued dynamism of specialty funds, which took on a pan-European dimension, and the return of general funds in the context of tackling the pandemic.

The largest sums were raised by CureVac and Oxford Nanopore Technologies, which respectively developed a COVID-19 vaccine and diagnostic tests. The trajectory taken by the German company CureVac is representative of the vaccine race triggered in early 2020 and the joint effort that this race prompted, which in its case, led to financial support from the German state, GSK and Qatar, followed by support from US funds during the company’s IPO on Nasdaq in August 2020.

Besides helping tackle COVID-19, European specialty funds’ participation in series A and B fundraising was a positive indicator of the value placed in innovation, even though some biotechnology companies were unable to launch their clinical trials on time due to the pandemic. This dynamism is set to continue in 2021, with specialty funds completing significant fundraising transactions in late 2020. These include the BioInnovation Institute, financed by the NovoNordisk Foundation, the Dutch fund Forbion, and the French fund Jeito Capital. One common thread linking these three operators is the fact that they all invested in Dutch companies in 2020, attracted by this increasingly appealing market, driven by local operators such as Forbion and the Danish fund, Lundbeckfonden Ventures, which is highly exposed in the Netherlands. For instance, the Dutch group Neogene Therapeutics, a company involved in preclinical phase research on cell therapies for solid cancers, completed an initial funding round of €93 M involving UK funds and Jeito Capital.
Finally, while 2020 has been dominated by biotechnology companies, one digital health company also experienced major success – the Swedish company Kry, a competitor of Doctolib, which raised almost €140 M from a Canadian pension fund and European funds with a view to accelerating its business development in Europe.

Venture capital transactions* per country between 2018 and 2020 (€M)

*This analysis only includes valued transactions

Sources: EY, Cfnews, Dealroom
European companies increased their capacity to perform major transactions in 2020. As such, 9 companies raised over €100 M in 2020, compared to just 5 in 2019. Three of these companies were British, confirming the United Kingdom’s position as European leader, both in terms of transaction numbers and amounts raised. These transactions were largely supported by foreign funds, since European companies offer better investment opportunities with lower valuations than US HealthTech companies.

France remains in second place in the European ranking in terms of the number of companies financed by venture capital in 2020, although its average deal size is lower than in neighbouring countries, notably due to a lack of major fundraising transactions. Consequently, there are no French companies in the top 10 fundraising transactions for 2020. Conversely, the CureVac transaction inflated the German average deal size to €25 M, while it would only have been €13 M if this transaction had not been taken into account (compared to €16 M in 2019). Similarly, Belgium’s figures were impacted by iTeos Therapeutics’ €114 M fundraising round with US and European investors. This financing should enable the Belgian company to develop two immuno-oncology drug candidates. While this transaction increased the average deal size, the number of transactions fell (16 fundraising transactions reported in 2020 compared to 22 in 2019).

**Top 10 venture capital transactions in 2019-2020 completed by the top 7 European countries**

<table>
<thead>
<tr>
<th>RANKING</th>
<th>COMPANY</th>
<th>COUNTRY</th>
<th>AMOUNT (€M)</th>
<th>YEAR</th>
<th>INVESTORS’ COUNTRY OF ORIGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CureVac</td>
<td>Germany</td>
<td>560</td>
<td>2020</td>
<td>Germany, United Kingdom, Qatar</td>
</tr>
<tr>
<td>2</td>
<td>BioNTech AG</td>
<td>Germany</td>
<td>289</td>
<td>2019</td>
<td>Asia, Europe</td>
</tr>
<tr>
<td>3</td>
<td>Oxford Nanopore Technologies</td>
<td>United Kingdom</td>
<td>277</td>
<td>2020</td>
<td>United Kingdom, United Arab Emirates</td>
</tr>
<tr>
<td>4</td>
<td>CMR Surgical</td>
<td>United Kingdom</td>
<td>218</td>
<td>2019</td>
<td>Europe, Asia, United States</td>
</tr>
<tr>
<td>5</td>
<td>Arvelle Therapeutics</td>
<td>Switzerland</td>
<td>160</td>
<td>2019</td>
<td>France, Europe</td>
</tr>
<tr>
<td>6</td>
<td>Doctolib</td>
<td>France</td>
<td>150</td>
<td>2019</td>
<td>Europe, United States</td>
</tr>
<tr>
<td>7</td>
<td>Kry</td>
<td>Sweden</td>
<td>140</td>
<td>2020</td>
<td>Canada, Europe</td>
</tr>
<tr>
<td>8</td>
<td>Pharvaris</td>
<td>Switzerland</td>
<td>136</td>
<td>2020</td>
<td>United States</td>
</tr>
<tr>
<td>9</td>
<td>VectvBio</td>
<td>Switzerland</td>
<td>123</td>
<td>2020</td>
<td>Europe</td>
</tr>
<tr>
<td>10</td>
<td>Achilles Therapeutics Ltd.</td>
<td>United Kingdom</td>
<td>108</td>
<td>2019</td>
<td>Europe, United States, Asia</td>
</tr>
</tbody>
</table>

Sources: EY, Cfnews
IPOs: increasing involvement of US investors

Eight of the sixteen European companies that completed IPOs in 2020 decided to access the US market through Nasdaq or the New York Stock Exchange. British and German companies have focused on this market since 2017, largely due to the potential for directly accessing more substantial fundraising opportunities. CureVac mainly accessed funds earmarked for tackling COVID-19 when it raised over €200 M for its IPO on Nasdaq. In the rest of Europe (excluding the UK and Germany), the majority of HealthTech companies often opted for primary listing on Euronext before pursuing funding on the US markets. In France, two new companies, Nanobiotix and Inventiva, both successfully completed double IPOs.

Many European companies therefore still have their sights set on the United States. Accessing this market nevertheless incurs a financial and operational cost that is not negligible, and therefore must be weighed up against the sums raised. This cost may also present a significant barrier to innovative companies that are not yet sufficiently well-structured. However, companies are more interested in the potential for refinancing and their visibility for US funds than the funds raised by IPOs. Two alternatives emerged in 2020. The first is the reverse merger, enabling companies to complete IPOs by acquiring listed companies, as demonstrated by the British company F-Star Therapeutics, which merged with the Nasdaq-listed US company Spring Bank Pharmaceuticals. The second relates to SPACs (special purpose acquisition companies), listed investment vehicles enabling IPOs through mergers with target companies. Although these transactions are currently more widespread in the United States, they have begun to be adopted in Europe with the IPO of the German company Immactis through its merger with the US investment vehicle Arya Sciences Acquisition Corporation in July 2020. These transactions offer the benefit of reducing the degree of uncertainty and risk of volatility, since companies negotiate directly with qualified investors.

IPOs in the top 7 European countries* between 2018 and 2020 (€M)

Like other Nordic countries, Sweden has continued to benefit from dynamic local stock markets including Nasdaq Nordic and the Spotlight Stock Market, which attracted five companies for IPOs in 2020, thus becoming the sector’s most dynamic markets in Europe in terms of IPO numbers. This situation contrasts with the Dutch market, which has seen no IPOs for health sector companies in the past three years.

In Belgium, there were two IPOs on Euronext Brussels in 2020: Nyxoh, a company that develops medical devices for the treatment of obstructive sleep apnoea, which raised €85 M and Hyloris Pharmaceuticals, a specialist in reconditioning existing pharmaceutical products, which raised €62 M.

Finally, in Switzerland one significant IPO occurred per year. Following Medacta International’s record transaction on the Six Swiss Exchange, ADC Therapeutics, a company with a pipeline of anti-cancer conjugates in an advanced stage of development, completed an IPO on the New York Stock Exchange as its first listing.

*The top 7 includes the Netherlands, which reported no IPOs between 2018 and 2020. Sources: EY, Euronext, Cfnews, Dealroom, VentureSource.
The number of IPOs exceeding €30 M increased twofold between 2019 and 2020, suggesting that the stock markets are potentially reopening for HealthTech companies following a more sluggish 2019. Transactions were notably concentrated in the €50-150 M bracket, both on the European and US markets.

Swedish companies in particular raised larger amounts both on a local stock market, Nasdaq First North, in the case of Implantica, a company that develops innovative medical devices (implants), and on Nasdaq in the case of Calliditas Therapeutics.

In 2020, 8 of the 12 IPOs exceeding €30 M completed by European companies occurred in the United States, with 3 following listing on a local market. The majority of these companies were British and German, mirroring the situation in 2018 and 2019. Their profiles vary, including CureVac, whose valuation skyrocketed with the development of a COVID-19 vaccine, Freeline Therapeutics, which is developing a gene therapy based on adeno-associated viruses, Compass Therapeutics, whose auto-immune therapy is used to treat solid tumours and haematological malignancies, and Renalytix, an in vitro diagnostics company demonstrating the increasing use of artificial intelligence in the health sector.

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>COUNTRY</th>
<th>AMOUNT (€M)</th>
<th>YEAR</th>
<th>SECTOR</th>
<th>STOCK MARKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medacta International</td>
<td>Switzerland</td>
<td>525</td>
<td>2019</td>
<td>MedTech</td>
<td>SIX (Zurich)</td>
</tr>
<tr>
<td>ADC Therapeutics</td>
<td>Switzerland</td>
<td>216</td>
<td>2020</td>
<td>Biotech</td>
<td>NYSE (New York)</td>
</tr>
<tr>
<td>CureVac</td>
<td>Germany</td>
<td>206</td>
<td>2020</td>
<td>Biotech</td>
<td>Nasdaq (New York)</td>
</tr>
<tr>
<td>BioNTech SE</td>
<td>Germany</td>
<td>136</td>
<td>2019</td>
<td>Biotech</td>
<td>Nasdaq (New York)</td>
</tr>
<tr>
<td>Freeline Therapeutics</td>
<td>United Kingdom</td>
<td>125</td>
<td>2020</td>
<td>Biotech</td>
<td>Nasdaq (New York)</td>
</tr>
<tr>
<td>Implantica</td>
<td>Sweden</td>
<td>122</td>
<td>2020</td>
<td>MedTech</td>
<td>Nasdaq First North (Stockholm)</td>
</tr>
<tr>
<td>Genfit</td>
<td>France</td>
<td>120</td>
<td>2019</td>
<td>Biotech</td>
<td>Nasdaq (New York)</td>
</tr>
<tr>
<td>Inspecs Group</td>
<td>United Kingdom</td>
<td>113</td>
<td>2020</td>
<td>MedTech</td>
<td>LSE (London)</td>
</tr>
<tr>
<td>Compass Pathways</td>
<td>United Kingdom</td>
<td>101</td>
<td>2020</td>
<td>Biotech</td>
<td>Nasdaq (New York)</td>
</tr>
<tr>
<td>Inventiva</td>
<td>France</td>
<td>94</td>
<td>2020</td>
<td>Biotech</td>
<td>Nasdaq (New York)</td>
</tr>
</tbody>
</table>
REFINANCING IN EUROPE: Cross-border transactions predominant

Nasdaq-listed companies’ dominant position is also evident in terms of refinancing transactions. In 2020, eight companies raised over €100 M through refinancing transactions. Seven of these companies are Nasdaq-listed: the Dutch-based ArgenX, which raised €829 M and the Swiss-based CRISPR Therapeutics AG, which raised €402 M (each accounting for over 85% of refinancing sums raised by Dutch and Swiss companies), the British-based Adaptimmune Therapeutics and Abcam, the German-based BioNTech involved in developing a COVID-19 vaccine, the French-based DBV Technologies, and the Swedish-based Oncopeptides. The only exception is the German company, Evotec. This firm, listed on the Frankfurt Stock Exchange, raised €250 M with a Qatari fund and the Novo Nordisk investment vehicle with a view to developing its research platform for innovative new therapies in partnership with pharmaceutical companies. In addition to this €250 M, Evotec was also granted an undisclosed amount of funding by the Bill & Melinda Gates Foundation for the purposes of identifying a COVID-19 treatment.

This prevalence of Nasdaq-listed companies raising funds both in the United States and their local markets in Europe has led to concentration of funding. In Belgium, almost all refinancing activity is managed by Galapagos BV, which raised €1.4 Bn in 2019 and €32 M in 2020. The same situation can be seen in the Netherlands, with ArgenX raising €729 M in 2020. German and Swiss company funding was also highly concentrated due to the low number of listed companies and their status.

Refinancing transactions (€M) between 2018 and 2020

<table>
<thead>
<tr>
<th>Country</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNITED KINGDOM</strong></td>
<td>224</td>
<td>347</td>
<td>534</td>
<td>960</td>
</tr>
<tr>
<td><strong>FRANCE</strong></td>
<td>459</td>
<td>459</td>
<td>527</td>
<td>764</td>
</tr>
<tr>
<td><strong>SWITZERLAND</strong></td>
<td>486</td>
<td>289</td>
<td>325</td>
<td>643</td>
</tr>
<tr>
<td><strong>GERMANY</strong></td>
<td>32</td>
<td>289</td>
<td>325</td>
<td>643</td>
</tr>
<tr>
<td><strong>BELGIUM</strong></td>
<td>1353</td>
<td>1353</td>
<td>1353</td>
<td>1353</td>
</tr>
<tr>
<td><strong>SWEDEN</strong></td>
<td>482</td>
<td>482</td>
<td>482</td>
<td>482</td>
</tr>
<tr>
<td><strong>NETHERLANDS</strong></td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Sources: EY, Cfnews, Dealroom
The number of listed companies in the United Kingdom, France and Sweden was higher, although the sums raised were lower. The trend for refinancing transactions in France and Sweden in particular provides a more nuanced view of financial markets’ appetite for health companies given the lack of record fundraising transactions. Refinancing of non-Nasdaq-listed companies was down in these two countries and lower in the United Kingdom, where companies have easier access to Nasdaq. The decrease in local refinancing can largely be attributed to risk-averse financial markets in an uncertain climate, financing being focused on tackling the pandemic, and companies increasingly resorting to debt (bank or bonded debt). In 2020, €4 Bn was raised through refinancing by companies in the sector in the seven assessed countries, including €1.5 Bn by Euronext-listed companies* (compared to €2.7 Bn in 2019). (*) Excluding Norwegian companies listed on Euronext Oslo, which are not included within the scope of the seven assessed countries.

Refinanced companies and average deal size per country in 2020 (€M)

<table>
<thead>
<tr>
<th>Country</th>
<th>Refinanced Companies</th>
<th>Average Deal Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>37</td>
<td>€13 M</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>31</td>
<td>€31 M</td>
</tr>
<tr>
<td>Sweden</td>
<td>28</td>
<td>€14 M</td>
</tr>
<tr>
<td>Germany</td>
<td>8</td>
<td>€80 M</td>
</tr>
<tr>
<td>Switzerland</td>
<td>8</td>
<td>€61 M</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4</td>
<td>€231 M</td>
</tr>
<tr>
<td>Belgium</td>
<td>1</td>
<td>€69 M</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, Cfnews, Dealroom, VentureSource
Euronext, which now includes the Amsterdam, Brussels, Dublin, Lisbon, Paris and Oslo stock exchanges is a key market for listing of HealthTech companies in Europe, whether they are based in these countries or elsewhere (Switzerland, Spain, Italy, England, China, etc.).

In late 2020, 117 HealthTech companies (68 of which French) were listed on Euronext markets, with a total market capitalisation of €41.8 Bn. The trend in market capitalisation for this strategic sector should be assessed in light of the focus on HealthTech for investment in 2020 (excluding Norway, the sector’s market capitalisation was €24 Bn in late 2019). In just one year, the market capitalisation of French HealthTech companies has increased from €8.3 Bn to €12.9 Bn!

Distribution of market capitalisation per listing market (€Bn)

- Paris [€13.1 Bn] 31%
- Oslo [€6.1 Bn] 15%
- Dublin [€0.4 Bn] 1%
- Amsterdam [€6.5 Bn] 15%
- Brussels [€15.7 Bn] 38%

Source: Euronext as at 31/12/2020

Distribution of market capitalisation per company type (€Bn)

- Biotech [€35.2 Bn] 84%
- MedTech [€6.6 Bn] 16%

Source: Euronext as at 31/12/2020
€1.9 Bn raised through IPOs since 2015

Over the past six years (2015-2020), 52 biotech and MedTech companies (including 20 French companies) have been listed on a Euronext market, raising almost €1,881 M and representing a total market capitalisation of almost €7.5 Bn. Of these 52 HealthTech companies, 30 biotechnology companies (including 15 French companies) raised €747 M through their IPOs.

2020 saw considerable volatility on the stock markets due to the COVID-19 pandemic and conditions little conducive to IPOs. Euronext nevertheless reported 6 IPOs, mainly in northern Europe: 2 IPOs in Belgium (Hyloris Pharmaceuticals and Nyxoah, which raised €62 M and €85 M respectively) and 4 IPOs in Norway, mainly through direct listings (€216 M raised). European HealthTech companies accessed a total of €363 M in financing through IPOs on Euronext in 2020. (Source: Euronext as at 31/12/2020 - Market capitalisation on IPO)

French HealthTech IPOs since 2015 (as at 31/12/2020)

<table>
<thead>
<tr>
<th>HealthTech</th>
<th>No. of companies</th>
<th>Amounts raised</th>
<th>Capitalisation (on IPO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotechnology</td>
<td>14</td>
<td>€428 M</td>
<td>€1,485 M</td>
</tr>
<tr>
<td>Medical technologies (MDs)</td>
<td>6</td>
<td>€160 M</td>
<td>€465 M</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20</td>
<td>€588 M</td>
<td>€1,950 M</td>
</tr>
</tbody>
</table>

Source: Euronext as at 31/12/2020

Since 2015, French HealthTech companies have accounted for 38% of IPOs completed on Euronext and 31% of amounts raised.
Almost €2 Bn raised through secondary transactions in 2020

This year, fundraising for stock market-listed HealthTech companies has been highly dynamic. The pandemic has refocused investment strategies on the health sector, with increases in market capitalisations initiated in Q2 2020 enabling the best-prepared companies to take advantage of refinancing opportunities. Thus, in challenging conditions and limited “market windows”, 73 Euronext-listed HealthTech companies used the markets over the year to raise €1,986 million through 393 financial transactions. A total of €11.5 Bn has been raised on the markets since 2015 through secondary transactions.

SEVERAL LARGE-SCALE TRANSACTIONS TOOK PLACE IN 2020

2020 has proven that European HealthTech companies are capable of raising significant sums to support their growth. The companies that raised the largest sums in 2020 were those with diverse pipelines, a sound “platform”-based approach, advanced-stage clinical trials (Phase II or above), and comprehensive study data. Overall, HealthTech financing has been dynamic in 2020, albeit more concentrated in terms of “windows” and numbers of deals.

- 6 transactions valued over €50 M including 3 exceeding €100 M.
- 67 private placements totalling €1.5 billion in raised funds: ArgenX (€828 M), Mithra (€68 M) and the French companies Sensorion (€30 M), Gensight (€25 M), OSE Immuno (€19 M) and Medincell (€17 M).
- 5 IPOs totalling €264 M in funds raised, with the double listings of Inventiva (€71 M) and Nanobiotix (€81 M) in the United States.

Top 10 secondary fundraising transactions on Euronext in 2020

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Date</th>
<th>Company</th>
<th>Country</th>
<th>Transaction type</th>
<th>Funds raised (€M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/06/2020</td>
<td>Argenx SE</td>
<td>Belgium</td>
<td>Private placement</td>
<td>720.73</td>
</tr>
<tr>
<td>2</td>
<td>04/02/2020</td>
<td>DBV Technologies</td>
<td>France</td>
<td>IPO</td>
<td>135.98</td>
</tr>
<tr>
<td>3</td>
<td>01/06/2020</td>
<td>Argenx SE</td>
<td>Belgium</td>
<td>Private placement</td>
<td>108.11</td>
</tr>
<tr>
<td>4</td>
<td>15/07/2020</td>
<td>Inventiva</td>
<td>France</td>
<td>IPO</td>
<td>70.67</td>
</tr>
<tr>
<td>5</td>
<td>10/12/2020</td>
<td>Nanobiotix</td>
<td>France</td>
<td>IPO</td>
<td>81.30</td>
</tr>
<tr>
<td>6</td>
<td>23/06/2020</td>
<td>Mithra</td>
<td>Belgium</td>
<td>Private placement</td>
<td>67.94</td>
</tr>
<tr>
<td>7</td>
<td>16/06/2020</td>
<td>Lumibird</td>
<td>France</td>
<td>IPO</td>
<td>44.49</td>
</tr>
<tr>
<td>8</td>
<td>04/05/2020</td>
<td>BerGenBio</td>
<td>Norway</td>
<td>Private placement</td>
<td>44.11</td>
</tr>
<tr>
<td>9</td>
<td>09/10/2020</td>
<td>Sensorion</td>
<td>France</td>
<td>Reserved private placement</td>
<td>30.18</td>
</tr>
<tr>
<td>10</td>
<td>26/10/2020</td>
<td>Gensight Biologics</td>
<td>France</td>
<td>Private placement</td>
<td>25.01</td>
</tr>
</tbody>
</table>

Source: Euronext as at 31/12/2020
Two successful IPOs in the United States prove the effectiveness of seeking funding first in Europe and then elsewhere.

➔ **Inventiva**, a biotech company based in Dijon, has offered benefits and a profile of interest to North American investors from the outset, particularly in light of its key fibrosis drug candidates, which are being developed to treat NASH, a chronic liver condition known as “fatty liver disease” that is highly prevalent in the United States. Its success story started on Euronext Paris, with over €110 M raised between its IPO in 2017 (already involving several US investors) and three private placements completed between 2018 and 2020. In July 2020, armed with this strong European foundation and major clinical advances with its drug candidates, Inventiva successfully completed dual listing in the United States, raising almost €71 M.

➔ **Nanobiotix** has been listed on Euronext Paris since 2012. This French biotech company specialising in nanotechnologies for cancer treatment has since made significant progress in soft tissue sarcoma indications, “head and neck” cancer, and in particular, through CE marking of its technology in 2019. The Nanobiotix technology has recently proven its worth with a successful Phase II–III trial of NBTXR3 in 2018. The product is also being tested for other types of cancer (liver, prostate, lung and pancreatic cancer).

In total, Nanobiotix raised over €200 M on Euronext before issuing share capital and increasing its exposure in the United States through a double listing (€81 M raised).

---

Funds raised by HealthTech companies in Euronext markets through secondary transactions since 2013 (€K)

![Graph showing funds raised from 2013 to 2020](image_url)

Source: Euronext as at 31/12/2020
Access to a diverse range of institutional investors

Top 20 institutional investors (by value)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Value (£M)</th>
<th>Type</th>
<th>Country</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellington Management Co.LLP</td>
<td>708</td>
<td>Growth</td>
<td>United States</td>
<td>5</td>
</tr>
<tr>
<td>Fidelity Management &amp; Research Co.</td>
<td>677</td>
<td>Growth</td>
<td>United States</td>
<td>5</td>
</tr>
<tr>
<td>Capital Research &amp; Management Co. (World Investors)</td>
<td>579</td>
<td>Growth</td>
<td>United States</td>
<td>4</td>
</tr>
<tr>
<td>The Vanguard Group, Inc.</td>
<td>579</td>
<td>Index</td>
<td>United States</td>
<td>14</td>
</tr>
<tr>
<td>Federated Global Investment Management Corp.</td>
<td>377</td>
<td>Aggressive Growth</td>
<td>United States</td>
<td>2</td>
</tr>
<tr>
<td>Invesco Advisers, Inc.</td>
<td>326</td>
<td>Growth</td>
<td>United States</td>
<td>6</td>
</tr>
<tr>
<td>Norges Bank Investment Management</td>
<td>285</td>
<td>Growth</td>
<td>Norway</td>
<td>19</td>
</tr>
<tr>
<td>Ballie Gifford &amp; Co.</td>
<td>259</td>
<td>Growth</td>
<td>United Kingdom</td>
<td>4</td>
</tr>
<tr>
<td>BlackRock Fund Advisors</td>
<td>253</td>
<td>Index</td>
<td>United States</td>
<td>13</td>
</tr>
<tr>
<td>Schroder Investment Management Ltd.</td>
<td>226</td>
<td>Growth</td>
<td>United Kingdom</td>
<td>4</td>
</tr>
<tr>
<td>RTW Investments LP</td>
<td>211</td>
<td>Growth</td>
<td>United States</td>
<td>1</td>
</tr>
<tr>
<td>Amundi Asset Management SA</td>
<td>172</td>
<td>GARP</td>
<td>France</td>
<td>11</td>
</tr>
<tr>
<td>Dimensional Fund Advisors LP</td>
<td>149</td>
<td>Value</td>
<td>United States</td>
<td>28</td>
</tr>
<tr>
<td>Bellevue Asset Management AG</td>
<td>148</td>
<td>Growth</td>
<td>Switzerland</td>
<td>5</td>
</tr>
<tr>
<td>Perceptive Advisors LLC</td>
<td>128</td>
<td>Growth</td>
<td>United States</td>
<td>2</td>
</tr>
<tr>
<td>T.Rowe Price International Ltd.</td>
<td>126</td>
<td>Growth</td>
<td>United Kingdom</td>
<td>2</td>
</tr>
<tr>
<td>SG 29 Haussmann SASU</td>
<td>112</td>
<td>Growth</td>
<td>France</td>
<td>24</td>
</tr>
<tr>
<td>NN Investment Partners BV</td>
<td>100</td>
<td>Growth</td>
<td>Netherlands</td>
<td>2</td>
</tr>
<tr>
<td>BNP Paribas Asset Management Belgium SA</td>
<td>100</td>
<td>Growth</td>
<td>Belgium</td>
<td>13</td>
</tr>
<tr>
<td>KBC Asset Management NV</td>
<td>98</td>
<td>Growth</td>
<td>Belgium</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5,613</strong></td>
<td></td>
<td></td>
<td><strong>174</strong></td>
</tr>
</tbody>
</table>

The financial markets also provide access to a diverse range of investors from around the world. Although the largest of these (Tier 1, USA) currently only have a handful of holdings, companies listed on a regulated market and included in a European liquidity pool (Euronext single order book) are sure to appeal to such investors when they seek exposure in the European health sector.

Distribution of investments in European HealthTech companies (£M)

**BY GEOGRAPHICAL ORIGIN**
- United States 54%
- United Kingdom 14%
- Belgium 5%
- Norway 5%
- Switzerland 4%
- Other 7%

**BY INVESTMENT TYPE**
- Growth 74%
- Yield 1%
- Aggressive growth 6%
- GARP 5%
- Index 12%
- Value 2%
- Hedge funds 7%
- Sovereign funds 3%
- Insurance and pension funds 19%

Source: Euronext as at 31/12/2020

HealthTech companies listed on Euronext’s various European stock exchanges are visible to approximately one thousand institutional investors from some thirty countries, chiefly the United States (54%), the United Kingdom (14%) and France (11%). The majority of investors are asset managers (71%) whose investment style is Growth (74%). 12% of the identified investors adopt a passive (index-based) management strategy.
3 QUESTIONS FOR...

Louis de Lillers, CEO of CorWave

"The CorWave cardiac assist device is inspired by nature"

CorWave has recently raised €35 M to finalise development of its circulatory support device aimed at improving heart failure patients' lives.

Could you explain your disruptive innovation and its benefits for patients with heart failure?

CorWave is working on a disruptive heart pump innovation in response to the public health challenge of heart failure, a fatal disease affecting over 60 million patients throughout the world. In France, it is responsible for 200,000 hospitalisations and over 70,000 deaths every year. Heart pumps have improved significantly and enable us to save thousands of patients’ lives. However, they are very often linked to severe complications as they do not operate physiologically. Our disruptive technology is set to cause a paradigm shift in the history of circulatory support. Our wave membrane pump inspired by the undulating motion of marine animals stands out due to its physiological design; it can mimic a pulse and blood flow velocity similar to that of a healthy heart. This device has the potential to limit the adverse effects associated with current devices. This is a genuine source of hope for patients and heart surgeons.

You are the first private French company to attract European Commission equity investment through the EIC fund. How did you “entice” Europe?

We were fortunate enough to experience a historic event. Since it was founded in 1957, this is the first time the European Commission has made an equity investment in a private company; the notion of “Europe as a shareholder” was introduced with the CorWave series C funding round. Through the EIC Fund, the Commission is seeking to create a “unicorn factory” that will prompt the emergence of global companies in cutting-edge sectors such as medical technologies.

In the clinical phase, over 25% of the European market is already backing us. In this latest funding round, the EIC Fund invested €15 M along with Financière Arbevel and the Singaporean family office, M&L Healthcare. Our existing investors, Bpifrance, Novo Holdings, Seventure, Sofinnova Partners and Ysis contributed over half of the funding for this round.

What are the next steps required to develop your device?

We have achieved the most challenging technical milestones in the preclinical phase with a chronic in vivo study at 60 days and 6-month real-time endurance testing. The funds raised will enable us to finalise the development of pumps that can be implanted in humans, and thus initiate clinical trials.
HealthTech funding in France

Following strong growth in 2019, funding of French HealthTech companies has been resilient in 2020, despite the contrasting situation between companies directly involved in tackling COVID-19, whose valuations and capital and debt raising capacity have increased, and other companies whose operations were launched in early 2020 (clinical trials, fundraising) and suddenly slumped. In a sector where fundraising can be critical for continuing research and for companies’ survival, funding needed to be identified quickly to bridge the gap.

Venture capital and refinancing transactions initiated in 2019 and completed in Q1 2020 brought in €355 M for around 50 companies, with an average deal size of €7 M. The number of transactions fell in subsequent quarters (less than forty in Q2 and thirty per quarter thereafter), partly due to lockdown periods. However, in the second year-half, the IPOs completed by Inventiva and Nanobiotix and the higher average size of venture capital and refinancing transactions on the stock markets appeared to herald renewed funding activity in the French HealthTech sector. The average deal size thus stood at €9 M at year end, which is nevertheless significantly lower than the €12 M seen in 2019, due to a lack of major transactions. In addition to equity financing, debt was also used to bridge the gap (bond issues, bank loans, Bpifrance subsidies, state-guaranteed loans).

Venture capital, the number one source of HealthTech funding in France, has continued to provide the sector with considerable support in 2020, aided by a dynamic network of specialist funds and the involvement of Bpifrance. However, this funding model did not enable significant sums to be raised (Withings raised the largest sum in 2020 at over €50 M). Difficulties encountered with IPOs therefore represent significant barriers to the growth of some companies, particularly in the biotech sector, where large sums are required to fund large-scale clinical trials or preparations for bringing products to market. Two French companies, Inventiva and Nanobiotix, which were initially listed on Euronext, successfully completed IPOs in the United States, each raising €90 M in July and December 2020. They join companies such as Genfit and Innate Pharma, which were already listed on Euronext, and completed IPOs in the United States in 2019. In an uncertain climate due to the COVID-19 pandemic and US election, this confirmed US investors’ interest in the health sector and French companies.

Funding trends for the French HealthTech sector (€M)

<table>
<thead>
<tr>
<th>Year</th>
<th>Venture capital</th>
<th>IPO France</th>
<th>IPO US</th>
<th>Refinancing - Primary Market France and private placement</th>
<th>Refinancing - Secondary Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1,526</td>
<td>255</td>
<td>544</td>
<td>111</td>
<td>311</td>
</tr>
<tr>
<td>2016</td>
<td>1,211</td>
<td>1,252</td>
<td>560</td>
<td>76</td>
<td>417</td>
</tr>
<tr>
<td>2017</td>
<td>1,426</td>
<td>386</td>
<td>531</td>
<td>167</td>
<td>435</td>
</tr>
<tr>
<td>2018</td>
<td>1,787</td>
<td>191</td>
<td>559</td>
<td>64</td>
<td>598</td>
</tr>
<tr>
<td>2019</td>
<td>1,548</td>
<td>142</td>
<td>1,069</td>
<td>187</td>
<td>886</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, Chews, Dealroom
VENTURE CAPITAL IN FRANCE, a funding source still buoyant in 2020

Following an exceptional 2019, venture capital continued to support French HealthTech companies, with no less than €886 M raised in 2020 compared to €1,069 M in 2019 and just €598 M in 2018. The fall in total funding compared to 2019 is due to a lack of record sums raised. The largest amounts raised were around €40 to €50 M, whereas in 2019 Doctolib, Amolyt and Hifibio each raised over €60 M.

Biotechnology companies were particularly dynamic, with new companies securing access to funding, showing investors’ faith in the sector’s future prospects. For instance, SparingVision raised €45 M in a series A funding round to finance the launch of clinical trials of its gene therapy for retinitis pigmentosa.

Moreover, investors recognised the innovative capacity of French research. In particular, evidence of this can be seen in the almost €111 M raised in 2020 by five Inserm spin-offs (Acticor Biotech, Alderaan, Aelis, Eyevensys, Imcheck), notably attracting foreign investment. These transactions also highlight the increasing scale and dynamism of technology transfer from public research to private companies.

Financing transactions completed by companies developing medical devices were lower in value and fewer in number. They nevertheless attracted foreign funding, as seen in the case of Robocath which raised €40 M from the Chinese manufacturer MicroPort. In a historic first, the European Commission chose CorWave for its first equity investment, enabling the company to raise €35 million to finalise its heart pumps and produce them with a view to launching clinical trials.

The dynamism of French venture capital funds, which are attracting increasingly significant funding, and the appeal of innovative companies, should enable this positive trend to continue.

Top 3 venture capital fundraising transactions in 2020 and 2019

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>DATE</th>
<th>SUM RAISED (€M)</th>
<th>SECTOR</th>
<th>ORIGIN OF MAIN INVESTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Withings</td>
<td>July 2020</td>
<td>53</td>
<td>eHealth</td>
<td>France, Netherlands, Germany</td>
</tr>
<tr>
<td>2 Dynacure</td>
<td>April 2020</td>
<td>50</td>
<td>Biotechnology</td>
<td>United States, France, Israel</td>
</tr>
<tr>
<td>3 DNA Script</td>
<td>July 2020</td>
<td>45</td>
<td>Biotechnology</td>
<td>United States, Netherlands</td>
</tr>
<tr>
<td>1 Doctolib</td>
<td>March 2019</td>
<td>150</td>
<td>eHealth</td>
<td>France, Germany, United States</td>
</tr>
<tr>
<td>2 Alizé Pharma</td>
<td>July 2019</td>
<td>67</td>
<td>Biotechnology</td>
<td>France, Europe, United States, Israel</td>
</tr>
<tr>
<td>3 Hifibio</td>
<td>August 2019</td>
<td>63</td>
<td>Biotechnology</td>
<td>China, United States</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, Cfnews, Dealroom, VentureSource
LISTED COMPANY REFINANCING: growing recourse to debt

Since 2018, French companies' refinancing options on the stock markets have become increasingly limited. This is the result of share price volatility and uncertainties regarding clinical results. This trend has continued in 2020 and been exacerbated by the health and economic crisis, although a total of almost €475 M has nevertheless been raised by listed French HealthTech companies. Only one transaction exceeded €50 M, and, mirroring the trend seen every year since 2015, the largest sum of funding was raised by one of the seven French HealthTech companies listed on Nasdaq and Euronext. In 2020, as in 2019, this company was DBV Technologies, which raised €136 M through a public offering aimed at financing its preparations for the commercial launch of Viaskin Peanut. In addition to the French refinancing market, Nanobiotix and Inventiva sought access to US funding through IPOs in the United States, enabling them each to raise over €90 M, sums exceeding refinancing transactions completed in France.

Besides seeking foreign funding, particularly in the United States, French listed companies have made greater use of debt instruments in 2020, including bond issues, private or public bank loans (Bpifrance, European Investment Bank), and state-guaranteed loans, which accounted for over 52% of debt raised. Thus, by 2020 year-end, over €430 M had been granted in state-guaranteed loans to listed companies within the sector by Bpifrance or private banks. The ranking of these loan recipients is topped by companies that also raise the highest sums in equity every year, including Cellectis (€18.5 M), Erytech (€10 M), Carmat (€10 M), and Oncodesign (€15.9 M). State-guaranteed loans enabled each of these companies to improve their cash flow in subsequent months and thus get their development to the next milestone, which should enable them to raise more substantial funding.

Funding source of French listed companies (€M)

<table>
<thead>
<tr>
<th>Year</th>
<th>Capital</th>
<th>Debt*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>475</td>
<td>836</td>
</tr>
<tr>
<td>2019</td>
<td>527</td>
<td>348</td>
</tr>
<tr>
<td>2018</td>
<td>764</td>
<td>391</td>
</tr>
</tbody>
</table>

(*) Bond issues and loans granted in the financial year. Convertible loans are included in debts, and the conversion premium is recognised as capital. Sources: EY, Euronext, Cfnews, Dealroom, VentureSource

Top 3 refinancing transactions in 2019 and 2020

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>DATE</th>
<th>SUM RAISED (€M)</th>
<th>SECTOR</th>
<th>TRANSACTION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DBV Technologies</td>
<td>February 2020</td>
<td>136</td>
<td>Biotechnology Issues of ADS (Nasdaq) and ordinary shares (Euronext)</td>
</tr>
<tr>
<td>2</td>
<td>Lumibird</td>
<td>June 2020</td>
<td>44</td>
<td>MedTech Euronext public offering</td>
</tr>
<tr>
<td>3</td>
<td>Sensorion</td>
<td>September 2020</td>
<td>30</td>
<td>Biotechnology Private placement with European and US investors</td>
</tr>
<tr>
<td>1</td>
<td>DBV Technologies</td>
<td>September 2019</td>
<td>131</td>
<td>Biotechnology Issues of ADS (Nasdaq) and ordinary shares (Euronext)</td>
</tr>
<tr>
<td>2</td>
<td>DBV Technologies</td>
<td>April 2019</td>
<td>72</td>
<td>Biotechnology Issues of ADS (Nasdaq) and ordinary shares (Euronext)</td>
</tr>
<tr>
<td>3</td>
<td>Carmat</td>
<td>September 2019</td>
<td>60</td>
<td>MedTech Offering limited to specialist investors</td>
</tr>
</tbody>
</table>

Sources: EY, Euronext, Cfnews, Dealroom
Funding, the key to success for HealthTech companies

The HealthTech sector’s capital intensity is reflected in the scale and frequency of funds raised throughout companies’ development. Entrepreneurs are confident of their ability to attract investment to this future-focused sector.

Funding, a chief concern for entrepreneurs

Top 5 concerns for entrepreneurs (% companies)

- Financing/fundraising: 66%
- R&D and clinical success: 47%
- Development of industrial partnerships: 38%
- Global growth: 24%
- Regulatory requirements: 20%

Source: France Biotech, 351 companies, December 2020

Two-thirds of entrepreneurs identified financing as a major issue. R&D and clinical success and the development of industrial partnerships are also critical to companies’ growth.

70% of companies are seeking funds and 50% experienced difficulties seeking funding.
Recurrent funding needs

Growth and funding of HealthTech companies

<table>
<thead>
<tr>
<th>Stage</th>
<th>Success Rate</th>
<th>Average Length</th>
<th>Mean Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovery</td>
<td>27%</td>
<td>4 to 5 years</td>
<td>~ €15-20 M</td>
</tr>
<tr>
<td>Preclinical</td>
<td>69%</td>
<td>1 year</td>
<td>~ €50-100 M</td>
</tr>
<tr>
<td>Phase I</td>
<td>54%</td>
<td>1 year</td>
<td>~ €50-100 M</td>
</tr>
<tr>
<td>Phase II</td>
<td>34%</td>
<td>2 years</td>
<td>~ €150-200 M</td>
</tr>
<tr>
<td>Phase III</td>
<td>70%</td>
<td>3 years</td>
<td>~ €300 M</td>
</tr>
<tr>
<td>Registration</td>
<td>91%</td>
<td>1 year</td>
<td>~ €500 M</td>
</tr>
</tbody>
</table>

It takes a long time to develop drugs or biopharmaceuticals (time-to-market of 10 to 15 years), requiring significant and increasing investment as projects progress. The initial phases involve significant risk. Investment, generally amounting to less than €1 M, mainly takes the form of public grants and investments or seed funds, or is provided by business angels. As risk decreases with products reaching the clinical phase, different types of financing are sought, with companies turning to private venture capital funds. Series A (€2-25 M) and B (€25-50 M) funding is common, while series C and beyond is still rare in Europe, with most companies seeking Phase II and III funding on the stock markets. Joint ventures (JVs) and M&A transactions are more common in the United States than in Europe, where they are still relatively rare.
When did you last raise funds?

- In 2020: 33%
- Last year: 22%
- Two years ago: 12%
- Over two years ago: 33%

Companies need to raise funds frequently, and thus, over 50% of companies last raised funds less than two years ago.

Source: France Biotech, 405 companies, December 2020

When are you planning to raise funds?

- Fundraising in progress: 16%
- In the next 3 months: 13%
- In the next 6 months: 21%
- In 12 months’ time: 25%
- In 12-24 months’ time: 13%
- In 24+ months’ time: 4%
- No fundraising planned: 9%

As regards upcoming funding, 75% of entrepreneurs are currently raising funds (16%) or aim to raise funds in the next 12 months.

Source: France Biotech, 356 companies, December 2020

Entrepreneurs' level of confidence in raising funds

- Level of confidence in investment:
  - Low: 8%
  - Medium: 57%
  - High: 35%

Entrepreneurs’ level of confidence in their ability to raise funds is high. The vast majority believe that the current environment is favourable.

Source: France Biotech, 276 companies, December 2020
HealthTech companies traditionally seek private venture capital investment for their series A to C funding. More mature companies that are already listed on the financial markets are also dependent on venture capital to continue investing through capital increases. Although rarer, investment from manufacturers (corporate venture capital) is highly sought after by entrepreneurs. In addition to the significant sums invested and the potential for partnerships arising from investments, companies with industrial shareholders gain credibility as innovators and can benefit from these stakeholders’ experience and expertise within their governing bodies.

Source: France Biotech, 293 companies, December 2020

Significant funding needs

Amounts raised since startup and funding requirements

<table>
<thead>
<tr>
<th>Amounts raised since startup</th>
<th>Funding requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>€4.4 Bn</td>
<td>€652 M</td>
</tr>
<tr>
<td>3 rounds</td>
<td>12 months</td>
</tr>
<tr>
<td>€15 M per company</td>
<td>€3.7 M per company</td>
</tr>
<tr>
<td>3 rounds (average)</td>
<td>24 months</td>
</tr>
<tr>
<td>€1 Bn</td>
<td>€7.3 M per company</td>
</tr>
</tbody>
</table>

Source: France Biotech, 276 companies, December 2020

The amounts raised by companies vary considerably and depend on their maturity. Since inception, HealthTech companies have raised over €4 Bn. In order to pursue their clinical phases and secure their growth, they estimate their funding requirements at approximately €1 Bn in the next 24 months.
Research Tax Credit and Innovative Young Company status: attractive schemes for HealthTech companies

Innovative Young Company (JEI) status

Eligibility for JEI status

<table>
<thead>
<tr>
<th>YES</th>
<th>53%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>47%</td>
</tr>
</tbody>
</table>

REASONS FOR INELIGIBILITY

- 81% Age
- 4% Not a new company
- 3% R&D expenses < 15%

Top 3 benefits of JEI status for companies

1. Costs optimised 81%
2. Company gains credibility as an innovator 58%
3. New recruits 54%

Research Tax Credit (CIR)

CIR system used?

<table>
<thead>
<tr>
<th>YES</th>
<th>91%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>9%</td>
</tr>
</tbody>
</table>

Almost all French HealthTech companies (91%) use the CIR system. During the health crisis, fast-track refunds of CIR in 2020 benefited many companies whose fundraising was often on hold and whose cash flow was affected by the crisis. The speed at which CIR was refunded was a key factor for innovative health companies. It was greatly appreciated by entrepreneurs, who hope that fast-track processing of claims will continue in future. Moreover, since cash flow is critical to entrepreneurs, they hope that there will be greater clarity regarding payment dates. Other requested improvements include simplification of often complex procedures. This also appears to be a priority for ensuring this system’s continued appeal. The elimination of the mechanism for doubling CIR for academic R&D collaborations could constitute a lost opportunity for HealthTech companies.

Focus on the health crisis

Of these, 86% were granted them and virtually all of them (88%) had no difficulties obtaining them.

51% of companies requested fast-track refunds of CIR in 2020.
FRANCE BIOTECH IN ACTION

France Biotech is actively working with the public authorities to promote the development of the innovative HealthTech sector, with policy proposals relating notably to taxation and financing of startups, partnerships between academic research and industry, and easing of regulatory requirements and their burden on innovative health companies.

France Biotech spearheads proposals emanating from its 9 committees and 3 working groups that serve as a think tank for innovative ideas.

- Biomanufacturing and Advanced Therapeutic Medicinal Products (ATMP) Committee
- Business Development Committee
- Legal Committee
- Corporate Finance Committee
- eHealth Committee
- HealthTech Innovation Days (HTID) Committee
- MedTech & Diagnostics Committee
- Human Resources Committee
- Antibiotic Resistance/Microbiota Committee
- Clinical Trials Working Group
- Market Access Working Group
- Technology Transfer Working Group

France Biotech is both a national observatory for monitoring innovation in the Life Sciences sector and a platform for sharing best practices among all ecosystem stakeholders.

- Publication of reports, white papers and bulletins
- Organisation of monthly workshops and conferences
- Production of video content (webinars, France Biotech – Le Talk, etc.)
- Contribution to numerous French and international events related to health innovation
- Participation in study trips abroad (USA, China)

France Biotech’s aim is to put the spotlight on the HealthTech companies that are embracing innovation through its role in a number of private and quasi-public organisations, including:

- The European associations EuropaBio and EUCOPE
- The International Council of Biotechnology Associations (ICBA)
- LEEM, the French pharmaceutical trade association
- CSIS, the strategic committee for health industries
- CSF, the strategic industry committee
- ARIIS, the health industry alliance for research and innovation
- The HealthTech network (together with all French health sector centres of competence and clusters)
- The French Tech initiative

FRANCE HEALTHTECH PANORAMA

Every year since 2002, France Biotech has published the France HealthTech Panorama (formerly Panorama of the French Life Sciences Industry®), a unique French analytical review of developments in the innovative HealthTech sector over the previous year both nationwide and globally. The findings of the France Biotech review provide an insight into the situation of companies and serve to inform policy proposals for improvements to give the industry its rightful recognition.

The authors would also like to thank Alexandre Devernay, intern at France Biotech, and Elsa Fernandez, manager at EY, for their valuable contributions to the report.
France Biotech was founded in 1997 as an independent association, uniting the country’s leading innovative health companies and their expert partners. As a leader in health innovation working in close cooperation with public authorities in France and across Europe, France Biotech is ideally positioned to address the challenges facing the HealthTech sector, notably corporate financing, taxation on innovation and regulatory and market access-related issues. Its committees and working groups strive to identify viable solutions to create the necessary conditions for a competitive and attractive industry. Its mission is to support HealthTech startups and SMEs in their quest for international expansion with the capability to rapidly design and develop new innovations and get them to the point of care. Since September 2019, France Biotech has been chaired by Theranexus CEO Franck Mouthon. The association currently has 345 members.

Euronext is the leading pan-European market infrastructure operator, connecting local economies to global capital markets, to accelerate innovation and sustainable growth. It operates in Belgium, France, Ireland, Norway, the Netherlands and Portugal.

With close to 1,500 listed issuers worth almost €4.5 trillion in market capitalisation as of end December 2020, Euronext operates regulated and transparent equity and derivatives markets and is the largest bond and fund listing venue globally. Products covered include equities, FX, Exchange Traded Funds, Warrants & Certificates, Bonds, Derivatives, Commodities and Indices. In addition to its main regulated market, Euronext operates Euronext Growth® and Euronext Access®, simplifying access to listing for small- and mid-caps. Euronext also provides custody and settlement services through central securities depositories in Denmark, Norway and Portugal.

EY’s corporate purpose is to help build a fairer world by creating long-term value for our clients, our employees and our communities, and by instilling greater trust and confidence in capital markets. EY’s teams are expert in data processing and new technologies, operating in over 150 countries and striving to create conditions to foster trust in the economy and address the challenges associated with growing, transforming and managing our clients’ business. With expertise in auditing, consulting, law, strategy, tax and transactions, the EY teams are well-equipped to navigate the complexities of today’s world, ask the right questions and provide relevant answers. You can find more information about our organisation at www.ey.com

BPifrance is a subsidiary of the Caisse des Dépôts and French government, and a trusted partner to businesses, supports companies from the seed phase to stock exchange listing through loans, guarantees and equity investments. BPifrance also provides guidance and support for internal innovation and external growth projects and exports, in partnership with Business France and Coface. BPifrance offers businesses a financing continuum covering each key phase of their development and a service tailored to specific regional requirements. With 42 regional offices, BPifrance supports public policies enacted by the French government and regional councils.

QBE is a world leader in insurance and reinsurance services, recognised for its expertise and ability to deliver innovative solutions. The organisation has been established in France for more than 20 years and covers the risks of companies of all sizes, particularly mid-caps and SMEs across all industry sectors. QBE engages with companies to stay on top of risk management, helping them to identify exposures to better control them. It is primarily a local insurance operator with a strong regional foothold.

In life sciences, QBE supports companies through all their key development stages: from R&D startup to product launch – and including clinical trials and international development. QBE’s full service offering covers crisis management and risk mapping support.
CONTRIBUTORS

France Biotech would like to thank the following organisations that contributed to the 2020 France HealthTech Panorama report.
Atlanpole Biotherapies is the health competitiveness cluster for western France. Since its inception in 2005 and its accreditation by the French Ministry of Industry, it has served as a framework for an innovative interregional sector covering the three regions Centre-Val de Loire, Pays de la Loire and Brittany.

Its aim is to develop the medicine of the future, by harnessing skills from laboratories and companies throughout the biopharmaceuticals value chain, from the discovery of therapeutic targets to clinical trials. The work of Atlanpole Biotherapies is based around three broad strategic fields – immunotherapy, radiopharmaceuticals and regenerative medicine –, and it has also branched out to three new areas, namely digital technologies for innovative therapies, clinical nutrition and the microbiota, and animal health.

It continues to experience strong growth, with more than 200 members and 65,000 jobs, including 6,000 private R&D jobs over the entire area. The COVID-19 crisis has provided an opportunity for member companies to demonstrate their responsiveness and adaptability.

The competitiveness cluster offers its members a comprehensive, custom-designed package to develop their business. They receive tailored support for any collaborative innovation projects, together with access to the European networks to which the cluster belongs and access to specific grants aimed at companies seeking to reach international markets. They can also broaden their networks and identify key partners by taking part in the many events organised by the cluster, or boost their visibility with the communication tools provided.

BioValley France operates throughout eastern France. Its aim is to serve as a leader for the health sector, providing a framework and bringing together all relevant stakeholders, including companies of all sizes, research laboratories and health and training companies, to build a strong, united community.

Four major topics
BioValley France provides expertise and tailored support in four areas:
- Drugs and innovative therapies;
- Diagnostics;
- Medical technologies;
- Digital health.

Dedicated services to boost your health innovation projects
- Business strategy: guidance on strategy, regulatory issues, intellectual property (legal and financial aspects), market access, innovation marketing;
- Innovative projects: identifying funding schemes, project set-up support, expertise and accreditation, targeted networking, navigating the startup landscape;
- International relations: partnerships with international clusters, international missions and delegations, organisation and support for major trade fairs;
- Visibility and influence: events organisation, guidance on communications strategy, press relations, publication of news and vacancies for members, directory of members.

Further information: biovalley-france.com
Eurobiomed is the health cluster for the Sud Provence-Alpes-Côte d’Azur region and the Occitanie/Pyrénées-Méditerranée region. The aim of Eurobiomed is to promote the growth of companies in the health industry, to develop and lead one of Europe’s major networks of health stakeholders, and to generate a new dynamic that will consolidate France’s position as a global leader in health innovation.

Eurobiomed offers resources and dedicated solutions for companies and research organisations in the health industry to encourage innovation and development and help them secure funding. The ultimate aim of the members’ strategic and business goals is to improve treatment and quality of life for patients.

With more than 14 years of expertise, Eurobiomed supports the development of innovations that tackle the challenges facing the future of medicine by providing comprehensive assistance to help its members develop their innovations and bring them to market. Since 2006, 310 projects supported by Eurobiomed have been funded through various calls for proposals at European, national and regional level, representing more than €1 billion in investment, including €461 million in public grants.

Since 2014, Eurobiomed has developed a comprehensive support package for companies to support them in their growth. Each year we offer guidance to more than a hundred companies in the areas of strategic positioning, regulatory compliance, asset protection, boosting equity capital, market access and developing contacts with potential clients.

Eurobiomed represents its companies and is committed to developing an ongoing dialogue with public authorities to provide the sector with an environment that is conducive to its development, in particular by working in partnership with France Biotech and as part of the Network of Health Clusters, composed of the six health clusters in France.

Eurobiomed has its registered office in Marseille; it currently has more than 400 members, including 336 companies, and 16 staff members.

www.eurobiomed.org/

Lyonbiopôle serves as an umbrella structure for a thriving, innovative health ecosystem with an international outlook in the Auvergne-Rhône-Alpes region. It has been a global competitiveness cluster since its inception in 2005, supporting projects and companies in the sector and boosting the development of technological innovations, products and services that will address the health challenges of the future. It has four strategic focus areas: medicinal products for human use, medicinal products for veterinary use, diagnostics, and medical devices and technologies. Its work is based on five main priorities: stimulating innovation, promoting economic development for its members, supporting them in their efforts to access international markets, providing them with access to industrial infrastructures to grow their projects, and boosting the entire ecosystem via an effective communication strategy.

Lyonbiopôle currently has 239 members, including a group of 6 founder members composed of 4 major manufacturers (Sanofi Pasteur, bioMérieux, Boehringer Ingelhein Animal Health and Becton Dickinson), the French Alternative Energies and Atomic Energy Commission (CEA) and the Mérieux Foundation, 14 subsidiaries of major corporations and mid-caps, 200 SMEs and 19 centres of competence (teaching hospitals, universities, foundations, etc.). It was awarded the European Cluster Excellence Initiative Gold Label and is a stakeholder in two European meta-clusters, MAGIA and S3martMed, and a member of EIT Health.

Further information: www.lyonbiopole.com
Medicen is the health competitiveness cluster for the Greater Paris Region. Its unique network comprises more than 490 players in health innovation, including 420 startups and SMEs in HealthTech, health industry manufacturers, major national research institutes and healthcare institutions. This regional network helps identify clinical and academic needs, paving the way for future solutions and providing support for the development of innovative diagnostic and therapeutic solutions.

The Medicen cluster leads and supports the ecosystems of the three HealthTech strands: MedTech, biotech and eHealth. The cluster encourages interdisciplinary collaboration to overcome specific diagnostic and therapeutic challenges and address unmet medical needs, with a growing focus on governance and the use of health data.

As a competitiveness cluster, Medicen aims to transform scientific innovation into therapeutic value for patients, as well as economic value, industrial processes and jobs. To support its members and help them grow their projects, Medicen has three key areas of action:

- Promoting the emergence of research and innovation projects,
- Encouraging the growth of startups and SMEs in France and at international level,
- Guiding project leaders to relevant sources of funding, whether public (calls for proposals at regional, national and European level) or private (relations with investors and manufacturers).

Medicen facilitates encounters between partners, offers project set-up guidance and boosts the visibility of its members to provide them with the keys to success, in France and worldwide.

Since 2005, 382 projects supported by Medicen have received a total of €2.1 billion in funding, including €863 million in public funding, resulting in more than 80 therapeutic solutions (products or services) being brought to market.

Clubster NSL, a network of professionals in industry, academia and healthcare involved in innovation in the area of nutrition and health

Clubster NSL – Nutrition, Health, Longevity – is a competitiveness cluster at the convergence of nutrition and health, bringing together stakeholders in the fields of agronutrition, biotech and pharma, MedTech and hospital tech, eHealth and the silver economy. It promotes dialogue and cooperation between academia and industry and supports innovative projects that are eligible for regional, national and European funding. It works to facilitate the emergence of innovative projects between private and public stakeholders with the aim of advancing and promoting the nutrition and health sector.

Clubster NSL is currently composed of 300 member structures with wide-ranging profiles: startups, companies, healthcare establishments and research and training organisations. Clubster NSL provides its members with the support of a dynamic team and the resources and partners they need to innovate together, fund their projects and develop their business.

The cluster is based in the Hauts-de-France region. It is France’s third leading cluster of excellence in nutrition and health. The region has some 1,100 companies, with 32,000 employees, operating in the areas of nutrition and health, and more specifically in the sectors of biotech and pharma, MedTech and hospital tech, eHealth, agronutrition and the silver economy.


- Follow our news: www.clubster-nsl.com
- Twitter: @ClubsterNSL
- For any queries, email: contact@clubster-nsl.com
APPENDICES

CORPORATE SURVEY PARTICIPANTS


@rtMolecule
Abcell-Bio
Abionyx Pharma
Abiva
Abolis Biotechnologies
Abyss Ingredients
Accure Tx France
Acoborn
ACS Biotech
Acticor Biotech
AcutSurgical
Adaptherapy
ADELIS
Adhex Pharma
Adjuvatis
Adnucleis
Advanced Biodesign
Aenitis Technologies
Affluent Medical
Afo Tech
AgenT
AGV Discovery
Ar-biopharma
AiiINTENSE
AIOVA
Alderaan Biotechnology
AlgoTherapeutix
Alliance Bio Expertise
Allyon
Alma Bio Therapeutics
Alphanosos
Alveoce
Alyatec
Alzohis
Alzprotect
Ambuliz
Amolyt Pharma
Amylgen
Anagenesis
Biotechnologies
Anamnese
Anaximandre
Antabio
Antelis
Apmonia Therapeutics
Apteurope
Aqemia
Aqyrie Biosciences
Ariana Pharmaceuticals
Arkhn
Atlangram
AtmosR
Avtar Medical
Avitam
Axxel France
Axelife
Axilum Robotics
Axitis Pharma
Axomove
Axonic
AZmed
BA Healthcare
Balmes Transplantation
BaseCamp Vascular
BCF Lifesciences
BCI Pharma
Bee Healthcare
Be-Lab
Bervxi
BGene Genetics
Bio Elpida
BioAxial
Biocorp
Biofilm Control
Biomaneo
Biomedical Tissues
Biophytis*
Biosecy
Biospace Lab
Biospeedia
Biotrial
Biovotec
BIOXIS Pharmaceuticals
Blueback
Bone 3D
Brenus Pharma
Bypass Solutions
C
C.RIS Pharma
Cairn Biosciences
Calixar
Calmedica
Capeval Pharma
Carbios*
CarboMimetics
Carenty
Carmat*
CarThera
Cell Constraint & Cancer
Cell-Easy
CellProthera
Charles River
Laboratories
Chelatex
Chronolife
Cibitec
CILcare
Ciloa
Clean Cells
Clevexel Pharma
Clinityx
Codesma
Concilio
Conicmeds
Development
Conidia
Corwave
Crossject*
Cytoo
d
Da Volterra
Damae Medical
Datexim
Deeper
Devove*
Dendris
Diabeloop
Dafir
Diagante
Divincell
DNA Script
Docmadi
Docndoc
Doctoclass
Doctor To Doctor
DOWAiTherapies
Doptom
Dosisoft
Dynaure
e
e.DIAGMED Corporation
Early Drug Development
Group
Ekinox
Eligo Bioscience
Eisaiysis Biotech
Emosis
Enterome
Enterosys
ENYO Pharma
EryPharm
Erytech Pharma**
ETIC-SYSTEMS
Eukarys
Eurosafe
eWDrug
EVerZom
ExactCure
Exelom Biosciences
Exolis
EzyGain
e-Zyve
f
Flowgene
g
Galenix Innovations
GamaMabs Pharma
Genelps
Geneuro Innovation*
Genefit**
Genodics
Genoscience Pharma
Genoscreen
Gleamer
GlyCure
GLYcoDiag
Goliver Therapeutics
Graftys
Greenpharma
GreenTropism
Gutycare
h
H4 orphan Pharma
HCS Pharma
Healshape
Hemarina
Hephai
Hera-MI
Hillo ai
Hippocampus Pharma
Hippoxis
Hirdonelle Medical
Horama
Horus Pharma
Hypno VR
i
I.Ceram*
IC biosolutions
iDD Biotech
Igyxos
ILTOO Pharma
Imactis
Imactiv-3D
Imaxio
Inescia
Immersive Therapy
ImmuneRx
Inatherys
Incepto Medical
Ineon Biotech
InFlectis BioScience
Infinity Biomarkers
Innate Pharma**
Innopain
Innovhem
Inorevia
Inotrem
Insolution
Insuliance
IntegraGen*
Intrasense*
 Inventys
Inventiva**
Iris Pharma
I-SEP
Ividata
J
Jymsea
k
Kaliosm
KalyCell
Kanopymed
Kaptalia Monitoring
Kayentis
Kellini
Kinnov-Therapeutics
Kiro
Koelis
KYomed INNOV
L
Lattice Medical
Lend-Rx Technology
LinBox
LiveStep
Lucine
Ludocare
LXRepair
Lysogene*
MaaT Pharma
MAbSilico
MagIa Diagnostics
ManRos Therapeutics
Mapreg
MaPUI LABS
McSAF
Mdloris Medical Systems
Meccelis biotech
Medecin Direct
Medesis pharma
Médials
MED'INN Pharma
Medisteer
Mebiotech
Metabolic Explorer
Metafora Biosystems
MicroBrain Biotech
Millendo Therapeutics
MI-Medical Innovation
MinMaxMedical
Miravas
Mitologics
Molsid
MORPHEE+
MoveUP
MT-act
MyndBlue
MYPL
MyRobotics
Nahibu
Nanobiose
NanoMedSyn
Naogen pharma
Neocustis
Netri

NETRIS Pharma
Neurallys
Neurokyma
Neurophoenix
Neuro-Sys
Newcard
NH TherAguiX
Nicox®
Nosopharm
Novadicovery
NOVOTEC
Observia
Odinma
Oligram
OncoDiag
Oncomeca
Oncomedics
Ondeo
OP2 Drugs
Op2lysis
OREGA Biotech
Orixha
Orphela Pharma
Orthotaxy
OSE
Immunotherapeutics®
Osval
OSTIUM Group
Oxylodger
Panaxium
Par Immune
Pathoquest
PEP-Therapy
Peptinov
Perha Pharmaceuticals
Pharmaleads
PhaseLab Instrument
Phenocell
Pherecydes Pharma
Phost'in
Plant Advanced Technologies
Pocramé
Poietis
Polytheragene
Porlott
Posos
Powel
Pragma Therapeutics
Preciphos
Premedit
Primaa
Profilehit
Proteus
Puls@care
Quantum Genomics®
REGEnLIFE
RespiInnovation
Rheonova
Robeauté
Robocath
Samabriva
Sangamo Therapeutics
Scipo bioscience
SeaBeLife Biotech
Seekyo
SeleXel
Senseome
Sensorion®
SGH Healthcaring
SiaMedXpress
Sibius
SideROS
Signia Therapeutics
Sinnovial
SVIEW
SLB Pharma
Speech2sense
Spineguard®
SPQI
Stimunity
Superbranche
Surgimab
Surgivisio
SuniCog
SynapCell
Syncomosome
Synelka
Syninsight
Synthebio
TargetDys SA
TeamDoc
Telecom Santé
Telomium
Temasis
The Healthy Aging Company
Theleme
Theracion®
Theradiag®
Théragora
Theranexus®
Theranovir
TheraPanacea
Therena
Tolys
Tongue Lab
Torskal
Trasser
Transgene®
TRIBVN Healthcare
Tridek-One
Triskem International
U
Umanit
V
Viainer
Valbiotis®
Valneva®
ValoTec
Vaxnano
Vaxon Biotech
Vect-Horus
Vemli
Vetbiobank
VebioliX
VetoPhage
VFP Therapies
Vibiosphen
Viroxis
VirtualSurg
Visible Patient
VitaDX International
W
WhiteLab Genomics
X
Xegen
Xenothera
Xenitech
Y
Yposkesi
Ysopia Bioscience
Yubsis