POSITIVE INVESTMENT THEME: HEALTH & WELLBEING

CASTLEFIELD

THE THOUGHTFUL INVESTOR

THEMATIC REPORT

INTRODUCTION

Health & Wellbeing is a key positive investment theme in our Castlefield B.E.S.T Sustainable fund range. We see clear and direct benefits to investing across the healthcare value chain, seeking out businesses that not only have a positive financial impact but are can also make a positive contribution to society through increasing access to affordable, quality healthcare and improving patient outcomes. The Health and Wellbeing theme is broad, covering a range of companies from pharmaceuticals and medical devices to healthcare technology and buildings such as medical centres.

Like other sectors, the healthcare industry is ripe for positive disruption. As our technology improves and allows us to understand and treat diseases, research laboratories can start to embed artificial intelligence and digital processes to enhance the advance. Laboratory preparation, which a decade ago would have taken three days to set up for one diagnostic test, can be prepped for multiple lab runs in one day. Insulin levels can be regulated for diabetics through smartphones, as can blood pressure and information relayed to specialised healthcare centres. The old adage of 'a stitch in time ...' is peculiarly germane. The ability to look at issues such as lifetime cost of care is increasingly important, given the visible strains on public healthcare systems and as UK-based investors, we are cognisant that our investments support the services of the NHS rather than seeking to privatise them. These advances all require capital resource and investment opportunities into sustainable healthcare themes can provide attractive long-term returns.

In short, we see the global healthcare sector as unique in its clarity of purpose and potential for tangible positive impacts on society. That is not to say that it is an industry free from controversy. We intend to discuss a number of the issues that responsible investors must consider, but we believe having a positive investment focus on Health & Wellbeing is of fundamental importance to society, with particular emphasis on disease prevention and universal access to healthcare, as set out in UN Sustainable Development Goal 3.[1]

1 https://www.un.org/sustainabledevelopment/health/

ECONOMIC AND DEMOGRAPHIC DRIVERS FOR THE SECTOR

The past year has been a remarkable time for the global healthcare sector as the coronavirus pandemic has stretched patient-facing services to their limits and the work by pharmaceutical companies to find a vaccine has been paramount to a return to 'normal' life.

Looking past the more short-term factors impacting the sector, there are numerous long-term and emerging drivers that lead us to see strong potential for growth through the value chain and are in keeping with our efforts to support companies which have a positive impact on society.

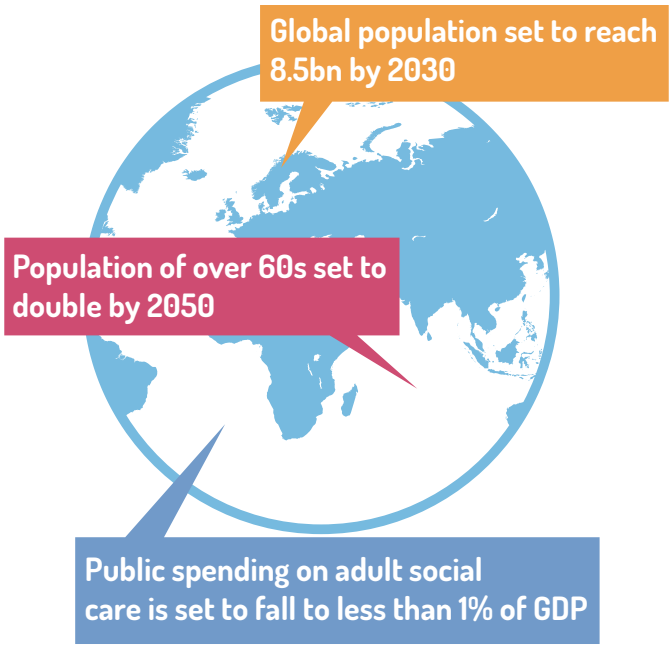
THE SILVER ECONOMY

Two key long-term trends driving growth in the sector are demographic, in that we are experiencing both a growing and ageing population. The global population is expected to reach 8.5bn by 2030, up from 7.7bn in 2019.[1] With people living longer, countries across the world are facing the challenge of adapting their healthcare systems to deal with a much larger proportion of people aged 60 years and above. The World Health Organisation estimates that the proportion of the world's population aged over 60 years will reach 22% by 2050, nearly double the rate of 12% recorded in 2015.[2] While living longer has a hugely positive impact, not only for individuals and their families, but also for wider society, there is little evidence to suggest that older people are experiencing better health later in life than previous generations. Lifestyle factors still have a big role to play in global health outcomes with factors such as smoking, high blood pressure, poor diet and obesity all identified as important contributors to many of the top 10 global causes of death.[3] From an investment perspective, these measurable outcomes allow for responsible investors to finance companies and products targeting health and wellbeing using data in a way that has not been possible before.

End-of-life care is an increasingly complex area requiring regulation and careful thought as the adult social care sector grows faster than the rest of the industry. The elder generation are no longer taxpayers, so the potential burden on public finances is something that needs to be bridged. Like it or not, private capital will be an integral part of the solution.

In addition, we must expect the Exchequer to call on taxation to meet some of the challenge. The Kings Fund and Nuffield Trust stated in a recent paper: 'Public spending on adult social care is set to fall to less than 1 per cent of GDP. The potential for most local authorities to achieve more within existing resources is very limited and they will struggle to meet basic statutory duties.'[4]

Operational hurdles loom over the very short horizon. For example, staffing is a major concern with high levels of turnover in the industry. A pre-Brexit report by Independent Age in 2015 suggested that the industry could face a staffing shortfall of over a million by 2037.[5] Clearly, this is a significant concern, but if we look at it from another perspective, a rather glaring opportunity with significant job generation as an outcome. By looking at long term trends in industries we cover, clear pictures begin to emerge which help us to identify investment opportunities. Significant change and innovation will be necessary to help the industry meet the increased demands that will soon be placed upon it. Technology will be of paramount importance if we are to overcome the challenges.



1 Department of Economic and Social Affairs, 'World Population Prospects 2019', United Nations
2 https://www.who.int/news-room/fact-sheets/detail/ageing-and-health
3 Smart health communities and the future of health, Deloitte, 2019
4 https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Social_care_older_people_Kings_Fund_Sep_2016.pdf
5 https://www.independentage.org/policy-research/research-reports/moved-to-care-impact-of-migration-on-adult-social-care-workforce

HEALTHCARE SPENDING

During the 1990s and early 2000s, health spending in OECD countries was generally growing at a faster pace than the rest of the economy, leading to an almost continual rise in the health expenditure to GDP ratio. After a period of volatility during the economic crisis, the average share has remained relatively stable in recent years, as growth in health spending across the OECD has broadly matched overall economic growth. On average, OECD countries are estimated to have spent 8.8% of GDP on health care in 2018, a figure more or less unchanged since 2013.[6]

The investment case for the healthcare sector is as robust as it has ever been. The marketplace is growing consistently so the demand profile is clear. As responsible investors, looking for opportunities to support an enhance public health systems, we see many opportunities, whether it be value-based care (social factors determining state provision for different ailments) or digital transformation in terms of diagnosis and treatment. Across these areas and more the need for investment capital is of massive scale and breadth. We see substantial interest from private capital players in the sector and this bodes well for the underlying profitability and attraction of investment returns for us in public equity markets. The private sector is needed for its deep pockets, its expertise in the field and collaborative behaviours as the sums required are large.

6 https://www.oecd-ilibrary.org/docserver/592ed0e4-en.pdf?expires=1605634323&id=id&accname=guest&checksum=2A50A7C634631312FE7EA6CDDCD99BE9

CORONAVIRUS

The coronavirus crisis has highlighted the need for efficient and affordable healthcare. We have seen that existing healthcare infrastructure and services have been stretched to breaking point and we hope that lessons can be learned from our current situation. What is glaringly clear is that public finances will not be sufficient to confront similar challenges. Without doubt, the private sector is in the driving seat with consistent resources to invest in R&D and innovation. A more globalised healthcare industry with collaborative work across continents will help to bring together expertise and experience in a way that might not have been quite so realistic before this health crisis.

The pandemic has highlighted some of the strengths of the healthcare industry. A number of our investee companies have played a role in directly assisting in the efforts to develop a vaccine, enable mass testing, or provide PPE for frontline healthcare workers.

The most notable of these has been AstraZeneca's involvement in developing and manufacturing a vaccine. These positive efforts have not been limited to larger businesses and we have seen several smaller firms playing a role. For example, graphene specialist Directa Plus made use of their product's exceptional antiviral properties to develop a graphene-based face mask.[1] EKF Diagnostics, a global medical manufacturer of point-of-care and central lab devices, was able to rapidly scale up production of a testing sample collection device that allows safe preservation of certain testing materials without requiring refrigeration.[2]

Despite these positive examples, and in addition to those structural and economic trends discussed above, the pandemic has also exposed weaknesses stemming from the strain on capacity resource and the threat of an overwhelmed public health service. As we have seen from the emergence of the virus, the problems are not limited to one country but form a clear pattern of need globally. This is where the social responsibility of the private sector can really come to the fore. The gap between the current provision of health and the resource required for a sustainable situation may well provide opportunities for companies who realise that the social contract with stakeholders across the board means more than profit optimisation. ESG investors like ourselves have a role to play in conveying that message to company board members.

1 https://www.proactiveinvestors.co.uk/companies/news/922300/directa-plus-says-its-graphene-enhanced-face-masks-are-now-on-sale-922300.html
2 https://www.ekfdiagnostics.com/ekf-covid-19-novel-sample-collection-kit-contracts.html

HEALTHCARE VALUE CHAIN

From global pharmaceutical businesses to small-cap healthcare technology companies, we see opportunities for responsible investment across the healthcare value chain. We believe the range of our holdings demonstrate the diversity of the value chain and show our funds as well-represented across the chain and market capitalisation spectrum.

INVESTING ACROSS THE VALUE CHAIN

Pharmaceutical	Medical Equipment & Supplies	Healthcare Technology	Medical Care & Other services	Healtcare Infrastructure	Animal Health*
GlaxoSmithKline	Smith & Nephew	EMIS Group	Medica Group	Primary Health Properties	Animalcare Group
Astra Zeneca	EKF Diagnostics	Tecan	Orpea	Belong Living	CVS Group
Hikma Pharaceuticals	Tristel		Greensleeves Care	Assura	Anpario
Clinigen Group	Inspiration Healthcare Group				
	Ion Beam Applications				
	Staumann				
	Sonova				
	Coloplast				

Holdings correct as at 31st March 2021

*While not explicitly discussed in this report, our Health & Wellbeing theme also captures companies involved in activities promoting animal health.

INNOVATION IN HEALTHCARE

Innovation within the sector is an important reason why we can look to healthcare companies for positive societal impact. Having outlined the issues of a growing and ageing population above, we can see these companies developing new and efficient solutions to keep pace with the changes we are seeing in society and to improve health outcomes of patients.

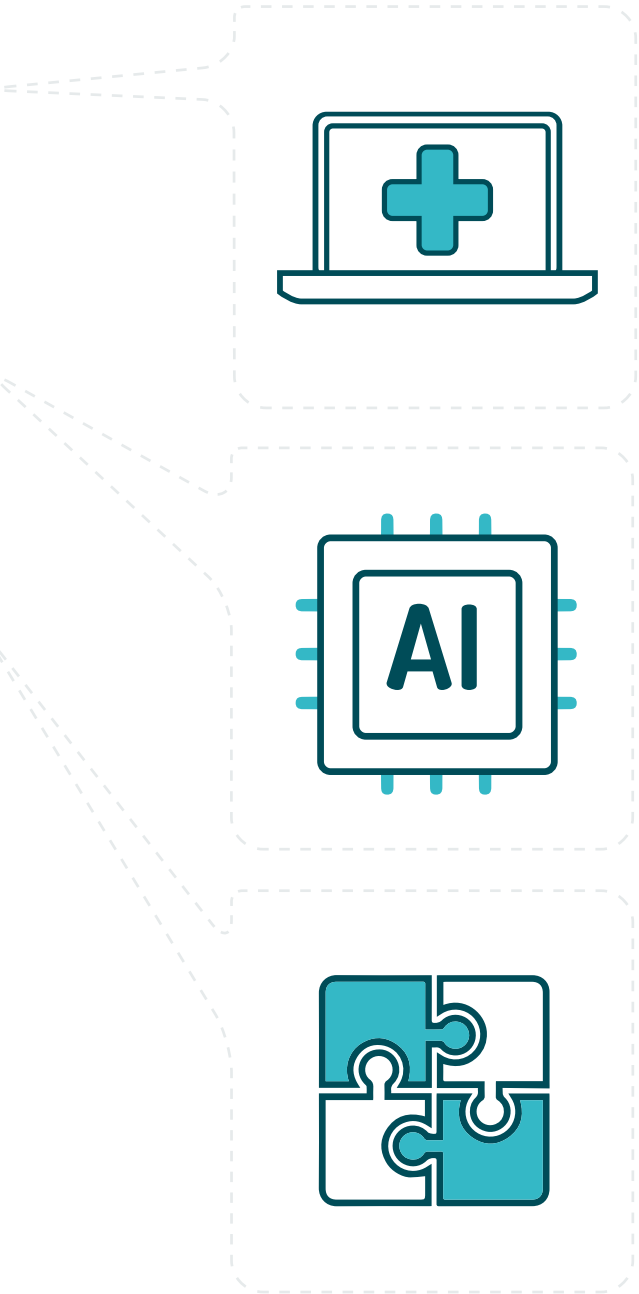
We are also seeing other pressures for the sector including a shift in attitudes towards increased consumer engagement in the healthcare process as people look for greater transparency, convenience and access.

THE DIGITISATION OF HEALTHCARE

Digital technology has a significant role to play in upgrading dated and paper-based healthcare systems:

- With the coronavirus pandemic, 'virtual health' in the form of video and telephone appointments has been pushed to the fore. These services have the potential to increase consumer engagement and improve patient access while reducing costs for healthcare providers.
- Artificial Intelligence (AI) and machine learning technologies are also beginning to be adopted within medicine and healthcare. One example has been in the field of diagnostic testing, where developments in image recognition and symptom checking can allow programmes to identify patients at higher risk.
- Interoperability is a further theme which we believe will drive healthcare innovation and improve patient outcomes. Many healthcare systems are not designed to be able to share information or use information for alternative purposes. We are starting to see greater efforts to move the healthcare system toward greater interoperability and improve data-sharing standards.

All of these digital innovations can assist in increasing the efficiency of our existing healthcare systems, reducing costs and allowing healthcare professionals to provide the highest standards of care. These services also increase patient access to services and information. We see this trend as an area of opportunity for responsible and sustainable investment.



KEY SECTOR ISSUES

The Castlefield investment process allows the team to take into consideration all the inputs and nuances required in this complex area. Below is a non-exhaustive list of factors that we look at when considering any potential investment within the healthcare industry and we believe that, as investors, we have a role to play in encouraging companies to minimise any negative impact of the issues that we have outlined through this report.

ANIMAL TESTING (MEDICAL)

Animal testing for medical research is a polarising topic and the use of animals in medical research has faced increased scrutiny in recent years. Despite this, animal testing continues to be undertaken for regulatory and safety purposes in some countries and remains a necessary component of medical research - and at times a legal requirement. The argument for the use of (strictly regulated) animal testing in medical research centres on the many human lives that could be saved by the development of treatments against conditions such as cancer, stroke, diabetes and HIV.[1]

In the UK, we have animal testing regulations that are widely considered some of the strictest in the world and controls on the use of animals in the research process have been in existence since 1876.[2] Many of the regulatory frameworks regarding animal testing are based upon the principles of the 3Rs (replacement, refinement and reduction) and licences for any procedures involving animals are issued by the Home Office under strict criteria.[3]

When considering the issue of animal testing for investee companies, we expect companies to have robust, public policies on how animal testing plays a role in research in relation to the 3R principles, applied not only to their own operations but also to any third parties such as suppliers.

1 https://www.ox.ac.uk/news-and-events/animal-research/research-using-animals-an-overview
2 https://mrc.ukri.org/research/research-involving-animals/regulation-and-policy/
3 Ibid

PRODUCT RESPONSIBILITY

While product responsibility in the healthcare industry is a wide-ranging topic, in our view it can be distilled down to two main principles: ensuring high quality and safe products and services as well as requiring that they are marketed and sold appropriately. This may seem obvious, but poor selling practices in particular have had devastating consequences for affected patients and have caused significant reputational damage to the healthcare industry.

One of the most well-known examples was within the pharmaceutical industry around 10 years ago when poorly structured incentives, notably in the US market, allowed for gifts, consulting contracts and other financial kickbacks to be offered to doctors, potentially compromising their independence.[4] Sales representatives were also offered bonuses solely based on the amount of product sold. This resulted in serious cases of misuse and over-prescription of medications, some of which are still having a significant impact to this day, such as the opioid crisis in the US.[5]

Since these practices were exposed a number of years ago, regulation has become much tighter and a number of pharmaceuticals have stopped incentivising staff based on volume of sales alone. Many now use a scorecard approach, based on the individual's knowledge, rapport with clients, etc. The focus is now about being a 'trusted adviser' to clinicians instead of seeing them simply as a customer. While more common in the US, which can in part be viewed as a side effect of the US health system being privately run, the UK has also had to act, introducing legislation requiring NHS staff to declare all gifts and hospitality received.[6]

4 https://pubmed.ncbi.nlm.nih.gov/24088157/
5 https://www.hhs.gov/opioids/about-the-epidemic/opioid-crisis-statistics/index.html
6 https://www.telegraph.co.uk/news/health/11818749/Jeremy-Hunt-NHS-bosses-face-jail-over-links-to-drug-firms.html

STEM CELLS

Stem cells are special human cells that can develop into many different cell types, from muscle cells to brain cells. Researchers believe that stem cell-based therapies might one day be used for everything from repairing damaged tissues to treating serious illnesses. Stem cells come in two main forms - embryonic stem cells and adult stem cells. The embryonic stem cells used in research today come from donated unused embryos, a by-product of in-vitro fertilization procedures.[7]

The only stem cells currently used to treat disease are those in bone marrow, although the opportunities for further applications are legion. Researchers believe that stem cells could be used to help create new tissue; one day, doctors may be able to treat people with chronic heart disease by growing healthy heart muscle cells in a laboratory and transplanting them into damaged hearts. Other stem cell treatments could target illnesses such as Type 1 diabetes, spinal cord injuries, Alzheimer's disease, and rheumatoid arthritis.[8]

The use of stem cells for medical research is a potential moral issue and a highly sensitive topic for those who believe that human life begins at the point of conception. In 2006, scientists developed technology that allows for the extraction of stem cells without destroying embryos, which may mitigate ethical objections to the process, but does not overcome them entirely.[9]

7 https://www.stanfordchildrens.org/en/topic/default?id=what-are-stem-cells-160-38#:~:text=Stem%20cells%20are%20special%20human,can%20also%20fix%20damaged%20tissues

8 Ibid

9 https://www.theguardian.com/science/2006/aug/24/stemcells.genetics

DATA PRIVACY & SECURITY

As we have discussed, the trend towards digitisation and technology-led solutions in the healthcare sector will mean that the risks associated with data privacy and security will only increase.

Healthcare organizations are bound by stringent regulatory requirements to protect patient data privacy. Most mature institutions have strong processes and controls in place to manage and monitor access to patient data, but many legacy security monitoring tools still in use are not equipped for the need to protect patient data privacy, as required by regulations and certifications such as GDPR, the General Data Protection Regulations.

Healthcare data breaches are a very expensive form of data loss; breaches in the healthcare sector costs £5.2 million on average, almost double that of the average cost of a standard data breach and this number is set to increase.[10] Currently, malicious cyberattacks like the 2017 WannaCry virus, which heavily impacted the NHS and caused 19,000 appointments to be cancelled,[11] account for more than half of the data breaches in the healthcare industry and the rest tend to be the result of insider threats – including employee negligence, third-party attacks, or lost and stolen devices. Clearly, the healthcare industry must do more to protect personally identifiable information (PII), and personal health information (PHI).[12]

The COVID-19 pandemic presents global healthcare providers with new challenges. There has been an unprecedented increase in the number of critical patients, a migration to supporting existing patients 'virtually' to help limit the spread of the deadly virus and temporary requirements to report to various government departments. These changes present new cybersecurity challenges to the healthcare industry.[13]

10 https://www.itproportal.com/features/the-healthcare-challenge-protecting-patient-data-privacy-during-a-global-pandemic

11 https://www.telegraph.co.uk/technology/2018/10/11/wannacry-cyber-attack-cost-nhs-92m-19000-appointments-cancelled/

12 https://www.itproportal.com/features/the-healthcare-challenge-protecting-patient-data-privacy-during-a-global-pandemic

13 Ibid

SPOTLIGHT: PHARMA

Universal health coverage is a key aim of the World Health Organisation. It is estimated that two billion people have no access to essential medications, effectively restricting access to the benefits of advances in modern science and medicine.[1] It is an extremely complex issue, which stems not just from affordability but from a host of issues, including local health systems and infrastructure, national regulatory authorities, international conventions for the control of specific drugs, and the patent system, among others.[2] The Sustainable Development Goals also incorporate health and well-being within Goal 3, which includes a focus on access under SDG 3.8: 'access to safe, effective, quality, and affordable essential medicines and vaccines for all.'[3]

APPROXIMATELY 2BN PEOPLE HAVE NO ACCESS TO ESSENTIAL MEDICATIONS

The pharmaceutical industry, in collaboration with the global health community, plays a critical role in responding to defined priorities for global health, developing much-needed innovative products, expanding access to those products that already exist and forging new partnerships to promote sustainable, long-term access to medicines.

However, the pharmaceutical industry in particular is subject to a number of additional ESG issues in comparison to the wider healthcare industry and has been much maligned in the press.

CLINICAL TRIAL GOVERNANCE AND TRANSPARENCY

In addition to ensuring that clinical trials are conducted in line with best practice, ensuring the safety of all participants, we see transparency and data sharing in the industry as a crucial feature that requires improvement. The pharmaceutical industry has come a long way in recognising this and COVID-19 has made the need for collaboration much more apparent, but there are challenges to overcome in this highly competitive industry.

In 2007, a law in the US was introduced requiring a wide range of clinical trials to be registered on the ClinicalTrials.gov database along with submission of summary results, with fines in place for non-compliance.[4] In 2013, the European Medicines Agency launched a new version of the European Clinical Trials Database, which marked the first step towards summary clinical trial results being made publicly available through the EU Clinical Trials Register.[5]

Now well established, there is still work to do in order to improve levels of transparency and data sharing and we see government enforcement as a key mechanism to penalise non-compliance. Another approach that has had some success is a scorecard approach conducted by Bioethics International, who collect data and rank a number of pharmaceutical businesses on these issues.[6] The coronavirus pandemic has also increased focus in this area amid calls for governments to relax competition laws in order to allow greater collaboration between pharmaceutical businesses working towards a vaccine. This saw some early success in July 2020 as the US Department of Justice said that it would not challenge a group of companies which planned to share data in order to collaborate on the manufacturing of COVID-19 monoclonal antibodies.[7]

1 https://www.who.int/publications/10-year-review/medicines/en/
2 https://www.who.int/publications/10-year-review/medicines/en/index1.html
3 https://sustainabledevelopment.un.org/sdg3
4 https://clinicaltrials.gov/ct2/about-site/history#CongressPassesLawFDAAA
5 https://www.ema.europa.eu/en/news/european-medicines-agency-launches-new-version-eudract
6 https://bioethicsinternational.org/good-pharma-scorecard/?field=Transparency&in=2019&rankings=Company
7 https://www.ft.com/content/29b6aa58-b6e1-4398-8d94-1dc8b004891f

FAIR PRICING

One negative connotation of the pharmaceutical industry has been accusations of 'price gouging'. Criticism has intensified in recent years regarding the high costs for many new and existing drugs and has come from both the media and regulators.

There have been a number of high-profile examples that have significantly damaged the reputation of the industry with perhaps the most well-known example is Turing Pharmaceutical, run by then-CEO Martin Shkreli, which acquired a drug, Daraprim, which is over 60 years old, and created public outcry by increasing the price fiftyfold.[8] We have seen many of these stories coming from the US, where regulation intended to incentivise the development of treatments for rare diseases also allows companies to purchase drugs approved elsewhere in the world to gain approval for use in the US and gain significant advantages for doing so, such as a 7-year monopoly under the Orphan Drug Act.[9] Drug pricing reforms have been on the agenda in US politics for some time but progress has been slow.

Outside of the most egregious examples, the reasoning given for many prices is related to the high costs of the research and development process over the many years it can take to develop new drugs and medicines. There is also the need to factor in the costs of drug trials that fail. However, there is still some healthy scepticism about this rationale, especially when looking at the US, who pay significantly higher prices for medication.[10]

The difficulty of assessing fair pricing – finding the right price that will allow for adequate investment in research and development projects while remaining affordable and sustainable – stems in large part from the lack of transparency. The prices charged from country to country can vary significantly with some countries, such as the UK, passing legislation that will provide the government with the power to control the prices on unbranded generics, allowing it to act when prices are deemed unreasonable.[11] We believe the current focus on accessibility and fair pricing will be enhanced by increased transparency and a collaborative approach between nations.

PATENTS

As economies grow, so do their rates of disease, particularly diabetes and cancer. Unsurprisingly, governments in emerging countries want their citizens to have better drugs. The big pharmaceutical firms want access to these new markets, but terms of business can prove contentious, and in some cases, patents can risk preventing access to those in need. We have seen examples of nations both refusing to grant licenses and also 'compulsory licensing', the device by which a country orders a patent-holder to license a product against its will, accepted in international treaties for more than a century. How should we view the role and validity of patents in the pharmaceutical industry given the huge disparity between those who can pay for medicines and those who can't?

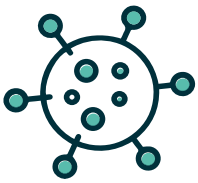
Since its 1995 inauguration, most WTO member states abide by the Agreement on Trade Related Intellectual Property Rights (TRIPS),[12] protecting patent copyright applicable to new diagnostics, vaccines, medicines and medical supplies. However, last October, India and South Africa lobbied the WTO Council to order temporary suspension of TRIPS obligations on all medical products needed to control the COVID-19 pandemic.[13] The IP incentive system guarantees companies specific protections, including a time-limited monopoly on product marketing. Proponents argue that companies need to recover their investments in research and development in order to stimulate continuous innovation.

TRIPS' IP rights, however, may clash with public health protection and the human right to health.[14] Controversies persist over how long patents should last and how much profit is reasonable to support new research and development. Given that drug prices are higher due to patents, and intellectual property protection limits production and distribution of needed innovations, are patents appropriate in the context of a global pandemic?

We don't believe that innovation should be curtailed by overzealous government interference, but we do believe that access to medicine for the poorest countries needs to be taken into account, particularly when life-threatening infectious diseases such as COVID-19 loom over modern civilisation.

8 https://www.nytimes.com/2015/12/19/business/martin-shkreli-resigns-turing-drug-company.html
9 https://www.forbes.com/sites/matthewherper/2017/02/10/a-6000-price-hike-should-give-drug-companies-a-disgusting-sense-of-deja-vu/?sh=2faa9a4371f5
10 https://jamanetwork.com/journals/jama/article-abstract/2674671
11 https://resultshealthcare.com/insight/drug-pricing-trends-eu-versus-us/
12 https://www.who.int/medicines/areas/policy/wto_trips/en/
13 https://www.wto.org/english/news_e/news20_e/trip_20oct20_e.htm
14 https://www.who.int/intellectualproperty/documents/thereport/ENPublicHealthReport.pdf?ua=1

NEGLECTED DISEASES



If there is one thing we've learned from the pandemic, it is that disease hits the poorest hardest, most affecting those with less political capital and voice. Of real concern is the fate of international product development partnerships (PDPs) – projects that leverage the expertise and infrastructure of big pharmaceutical companies, small biotech shops and academic institutions to fight diseases where 'market failure' prevents large-scale private sector investment into neglected diseases. Nearly one in six people worldwide will require treatment for a neglected tropical disease (NTD), such as snake bites, dengue fever, Chagas disease and sleeping sickness.[15]

9% OF UK PUBLIC FUNDING WENT TO NEGLECTED DISEASE RESEARCH AND DEVELOPMENT IN 2018

In 2018, the UK government was the number two global donor, spending $230m (9% of all public funding) for neglected disease research and development through mechanisms such as international product development partnerships (PDPs).[16] In the last 10 years, PDPs have developed and introduced over 65 products, including drugs and diagnostics, reaching more than 2.4 billion people, having significant impact on the world's poorest regions. Shockingly, many existing PDP contracts had expiration dates of March 2021. Given that we understand the impact of infectious disease so much better than we did a year ago, the consequences of reduced government spending will be high.

At the World Health Assembly in November 2020, the WHO announced its 10-year roadmap aiming for 90% reduction of interventions for NTDs, in line with the Sustainable Development Goals. It also aims to eliminate at least one NTD in 100 countries and secure a 75% reduction in NTD-related disability-adjusted years. Finally, WHO estimates that its global budget for NTDs is US$86 million for 2020–21, of which over $70 million will be in the form of memoranda of understanding for NTD products, technical collaboration, or donations.[17] So much of the research and development budgets of public and private businesses are targeted at healthcare, where reimbursement is economically attractive to the pharmaceutical industry, thus leaving poorer populations with afflictions with precious little opportunity to thrive. Pharmaceutical companies need to look to their social licence to operate and back these initiatives in the face of lower public sector spend. Legislation and regulation are needed to forge closer association between pharmaceutical businesses and governments which go hand-in-hand to combat rare and neglected diseases.

ENVIRONMENTAL IMPACT

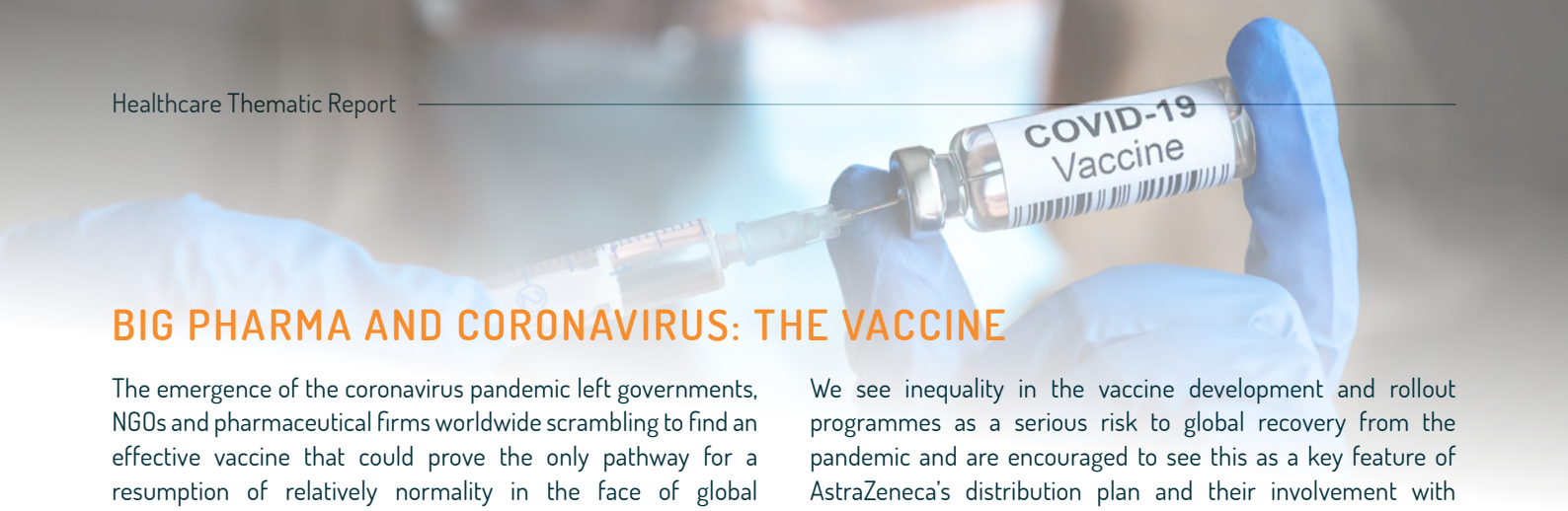
In addition to a number of social and governance related factors, environmental issues are also a significant consideration for the industry.

In order to prevent contamination, single-use equipment such as waste vials, syringes and personal protective equipment (PPE) that are likely to be incinerated are used widely across the healthcare industry. The vaccine rollout has additional environmental consequences linked to the rapid rollout; everything from the refrigeration units used to store vaccines to the transportation needed to get the doses across the world will cause additional challenges to plans to reach Net Zero.[18]

INDUSTRY EMISSION INTENSITY 55% HIGHER THAN AUTOMOTIVE INDUSTRY

In addition to waste and non-recyclable products, the pharmaceutical industry faces serious challenges with regard to its emission of greenhouse gases and many companies have a long way to go before complying with the Paris Agreement. A 2019 report from the Journal of Cleaner Product found that the emission intensity of the pharmaceutical industry was about 55% higher than that of the automotive industry.[19] We have seen several companies move to make much stronger commitments in this area. For example, GlaxoSmithKline and AstraZeneca have set a precedent on environmental sustainability for the industry with ambitious strategies on reaching carbon neutrality, reduction in water usage and sustainability of supply chains. As climate change climbs quickly up the global agenda, we expect to see increased scrutiny of these issues across the industry.

15 https://s3-ap-southeast-2.amazonaws.com/policy-cures-website-assets/app/uploads/2020/02/11150341/G-Finder2019.pdf
16 https://s3-ap-southeast-2.amazonaws.com/policy-cures-website-assets/app/uploads/2020/02/11150341/G-Finder2019.pdf
17 https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30227-5/fulltext
18 https://www.politico.eu/article/mass-coronavirus-vaccinations-environmental-impact-climate-change/
19 https://www.sciencedirect.com/science/article/abs/pii/S0959652618336084



BIG PHARMA AND CORONAVIRUS: THE VACCINE

The emergence of the coronavirus pandemic left governments, NGOs and pharmaceutical firms worldwide scrambling to find an effective vaccine that could prove the only pathway for a resumption of relatively normality in the face of global lockdowns. At the time of writing, we now have seven vaccines available for public use with 173 million doses administered in 77 countries.[1] Despite the progress to date, there remain significant challenges in the continued development of vaccines with the discovery of new variants as well as the logistical issues of enabling the vaccine rollout.

Of the pharmaceutical companies we currently invest in within the B.E.S.T Sustainable fund range, AstraZeneca's involvement in the effort to develop and coronavirus vaccine has been the most high profile. While not the first vaccine candidate to gain regulatory approval, the Oxford/AstraZeneca vaccine is by far the most sought-after vaccine with close to three billion pre-purchase agreements in place by mid-February, well ahead of the nearest alternative.[2] It did not get off to the best start with some initial concerns about the data presented,[3] but has set itself apart from other vaccine contenders due to its lower cost-per-dose and lack of need for cold storage facilities.

Having announced that the company does not intend to profit from the COVID-19 vaccine during the pandemic,[4] AstraZeneca also made early decisions about pricing and access for the vaccine which demonstrate its intention to ensure that the vaccine is available for lower income nations. As AstraZeneca released its phase 3 trial interim results, it confirmed that the vaccine would be available on a non-profit basis 'in perpetuity' to low- and middle-income countries in the developing world.[5] The company was also an early participant of Covax, a global initiative which is aiming to ensure distribution of successful vaccine candidates to lower-income countries, and also has agreements with GAVI and the Serum Institute of India.[6] It is estimated that over 60% of the Oxford/AstraZeneca vaccines will go to low-income countries, a significant achievement when compared to the 4% estimated for the Pfizer/BioNTech alternative.[7]

We see inequality in the vaccine development and rollout programmes as a serious risk to global recovery from the pandemic and are encouraged to see this as a key feature of AstraZeneca's distribution plan and their involvement with supra-national agencies looking to address this concern.

We also invest in GlaxoSmithKline (GSK). Its contribution to the development of COVID-19 vaccines has involved collaborating with other organisations producing vaccines and providing access to its adjuvant technology. An adjuvant is an ingredient used in certain vaccines which can create a stronger immune response, helping vaccines to work better.[8] Using this technology, GSK has partnered with Sanofi to develop an adjuvanted COVID-19 vaccine candidate as well as working with Medicago on the company's plant-derived vaccine candidate.[9]

More recently, in February 2021, GSK announced that it intends to work with CureVac to jointly develop next generation MRNA vaccines for COVID-19 with the potential to address multiple emerging variants in a single vaccine.[10]

Positively, GSK has also made a statement regarding its commitments to access and pricing, stating that it does not intend to profit from its vaccine collaborations during the pandemic and will make its adjuvant available to all countries, including the world's poorest nations, in part through organisations such as Gavi and Covax.[11]

We were pleased to see the pharmaceutical companies we invest in taking the issue of access into account at the early stages of their involvement in vaccine development and vaccine-related projects. The pharmaceutical industry has a very real opportunity to restore some public trust through their actions during the coronavirus pandemic and we have seen some very positive actions as a result and are optimistic that this momentum will continue.

1 https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/ (as at 14/02/2021)
2 As at 12/02/2021, Statista
3 https://www.bbc.co.uk/news/health-55086927
4 https://www.astrazeneca.com/media-centre/press-releases/2020/astrazeneca-to-supply-europe-with-up-to-400-million-doses-of-oxford-universitys-vaccine-at-no-profit.html
5 https://www.theguardian.com/global-development/2020/nov/23/oxford-astrazeneca-results-covid-vaccine-developing-countries
6 Ibid
7 https://www.ft.com/content/0ad28950-cf97-4ae9-8b08-18fdc9ffbeb1
8 https://www.cdc.gov/vaccinesafety/concerns/adjuvants.html
9 https://www.gsk.com/en-gb/media/resource-centre/our-contribution-to-the-fight-against-2019-ncov/
10 https://www.gsk.com/en-gb/media/press-releases/gsk-and-curevac-to-develop-next-generation-mrna-covid-19-vaccines/
11 https://www.gsk.com/en-gb/media/resource-centre/our-contribution-to-the-fight-against-2019-ncov/#tab-1-2

ACCESS TO MEDICINE INDEX

Castlefield are signatories to the Access to Medicine Index, an initiative which ranks the world's 20 largest pharmaceutical companies on how they are addressing the issue of access to medicine for 77 diseases, conditions and pathogens in over 100 low- to middle-income countries. Together, these companies, representing 70% of global pharmaceutical revenues, have a critical role to play in addressing this global issue.[1]

For over a decade, the work of the Access to Medicine Index has been seeking to inspire change within the industry by identifying best practices, highlighting progress and uncovering where the most critical work still needs to be done.

The index assesses pharmaceutical companies across eight product types and identifies those diseases where low- and middle-income countries face the largest burden.[2] To evaluate the companies in the Index, the initiative uses 69 metrics across four strategic pillars: commitments, transparency, performance and innovation.[3] The evaluation takes into account the companies' research and development programmes, pricing and distribution strategies, patents and licencing as well as product donations. The next index is due to be published in 2021.

Information from the Index is used within our investment process to either validate or challenge our own research. Becoming a signatory to the Index has allowed us to speak directly to the Index's analysts and has prompted further engagement with investee holdings.

ENGAGEMENT

Within any industry there is a balance of behaviours ranging from best practice to unsustainable and undesirable cultures. The healthcare sector is no different. At Castlefield, our belief is that we will not shy away from imperfections, aiming to engage to engender change for the better. Healthcare is an industry where patient outcomes need to be kept at the forefront of all stakeholder attention. We collaborate with other institutions and NGOs to raise awareness of issues and bring them to the attention of busy executive teams. We are small, but we find strength in working together with others to influence change for the better.

Most recently, through our involvement with the Access to Medicine Foundation, Castlefield co-signed an investor statement in support of an 'Effective, Fair and Equitable Global Response to COVID-19'. At Castlefield, we believe that it is imperative that lower-income nations are not left behind in the race to roll out a vaccine and it is crucial that the acutely unequal power dynamics at play within vaccine manufacture and global health are recognised and addressed. We have therefore joined other investors calling for a clear strategy to ensure the reasonable distribution of COVID-19 vaccinations globally.

On 23rd February 2021, we joined around 150 institutional investors by signing a joint statement calling for a fair and equitable global response to the pandemic. This is an increasingly pressing topic. At the time the statement was written, of the 128 million doses of COVID-19 vaccines administered so far, over three quarters had been delivered in 10 countries which account for around 60% of global GDP.

There are very clear moral issues at the heart of vaccine distribution and the current health and social cost of the pandemic. However, world leaders must also recognise the serious economic consequences of not curbing the spread of coronavirus in less developed markets. A study from the International Chamber of Commerce Research Foundation concluded that if infection continues to spread across emerging markets while developed economies make progress with their vaccination programmes, the global economy stands to lose as much as US$9.2 trillion. This demonstrates a clear economic argument, an 'investment case' for a coordinated approach to vaccine distribution across the world.

In the statement coordinated by the Access to Medicine Foundation, institutional investors, including Castlefield, have pledged their support for the Access to COVID-19 Tools (ACT) Accelerator, a global collaborative initiative to accelerate the development, production and equitable access to tests, treatments and vaccines for COVID-19.

The initiative builds on the outcomes from the first virtual meeting of G7 leaders in mid-February, where members announced over US$4.3 billion of investments into the ACT Accelerator and paves the way for a series of G7 and G20 meetings in the coming months, following the creation of the G20 High-Level Independent Panel on financing the Global Commons for Pandemic Preparedness and Response.

Read the full statement here: https://bit.ly/3ujmVtD

1 https://accesstomedicinefoundation.org/access-to-medicine-index/about-the-access-to-medicine-index/what-we-measure

2 Ibid

3 https://accesstomedicinefoundation.org/access-to-medicine-index/about-the-access-to-medicine-index/how-we-measure

CONCLUSION

The healthcare sector provides fertile ground for our investment process to inhabit. We find companies of all sizes, involved in all aspects of healthcare provision. Management teams are adept at navigating the challenges of the industry and the sector attracts the highest echelons of human intellect. Profit margins tend to be above average, and forecasting future profitability tends to be difficult, making the opportunity set more interesting. We keep abreast of the issues, polemic and systemic, and within all the challenges of providing everyday needs for a population demographic that is growing, the potential positives within reach are myriad. Technology, scientific advance and growing demand will drive innovation, much of which will come from private companies which need capital to offer their services. We will continue to identify those businesses which the market doesn't yet fully understand and allocate capital to opportunities which are provident in both health outcomes and investment return.

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