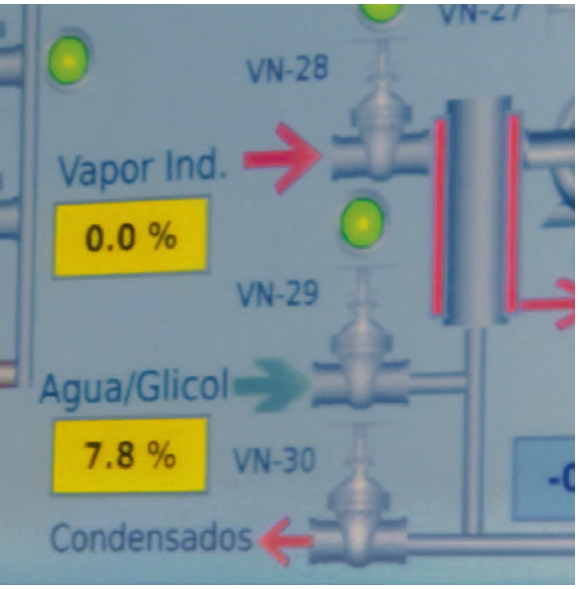
4D pharma plc

A world leader in an emerging field

4D pharma plc Annual Report and Accounts 2017



We are pioneers in harnessing bacteria as a novel and revolutionary class of medicines:

Live Biotherapeutics

World-class science is the foundation of medical discovery. To turn this into life-changing medicines: that requires something more. To turn this into a whole new class of medicines: that requires something special. We are building something special at 4D pharma.

Live Biotherapeutics have the potential to transform the way in which many diseases are treated. But to realise that potential, the sector needs robust clinical data. We are well positioned to deliver that data.

In 2017, we laid foundations that have positioned 4D to transform the sector; with four clinical programmes set to deliver data and a number of development programmes heading towards the clinic, 4D will play the lead role in defining the sector.

What makes us different? We understand that bacteria in the human intestine – known as the gut microbiome – have an important function in health and disease, but importantly – we understand *how* they function, and how they function as a drug.

Understanding how they function means that our Live Biotherapeutics are potentially providing new and effective treatments for IBS and Crohn's Disease and game-changing treatments for cancer, asthma and autoimmune conditions such as rheumatoid arthritis and multiple sclerosis.

4D and the Live Biotherapeutics we develop have the potential to transform the way in which many challenging diseases are treated.

What sets us apart?

- We are targeting a new, safer approach to drug development
- We are a fully integrated microbiome company with the capability to progress from research to production to clinic
- We understand mechanism: how our products exert their therapeutic effects and act as a drug
- We have developed and wholly own the largest intellectual property estate in the field

Learn more about what we do
page 2

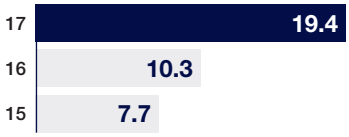
Stay up to date on our website
4dpharmaplc.com

Highlights

Financial highlights

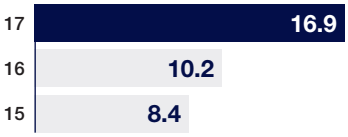
Total comprehensive loss after tax (£m)

£19.4m



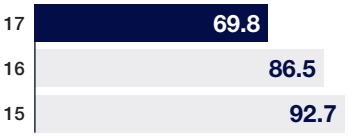
Expenditure on research and development (£m)

£16.9m



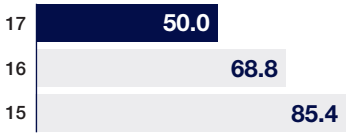
Total equity (£m)

£69.8m



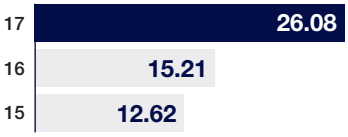
Cash, cash equivalents and cash on deposit (£m)

£50.0m



Adjusted loss per share* (pence)

26.08p



* Basic and diluted. Adjusted loss per share excludes non-recurring costs (see note 9).

Operational highlights

- Successful progression of our proprietary clinical programmes in Irritable Bowel Syndrome and Paediatric Crohn's Disease
- Completion of the first clinical trial of the MicroDx diagnostic and patient stratification platform, validating the platform and representing achievement of the initial milestone from the acquisition of 4D Pharma Cork Limited in February 2016
- Data generated in this clinical study demonstrated: our ability to use patient microbiome and metabolite profiles to differentiate IBS subjects from healthy individuals; and the commonalities of the microbiome across all IBS subtypes, supporting the use of Blautix, our Live Biotherapeutic for the treatment of IBS, in all these subgroups
- Development of our intellectual property estate, the largest in the microbiome sector, to help secure and consolidate our leading position in the field, having at year end 207 granted patents and 320 patent applications, from 32 patent families
- Securing GMP certification for the production of Live Biotherapeutics at our development and manufacturing facility in León, Spain, with the potential capacity to run up to 100 million capsules per annum

4D pharma at a Glance

Leaders in an emerging field

We are well positioned to turn world-class microbiome science into safer new therapies for patients. 4D has grown from pioneering microbiome research to the only integrated, world-leading Live Biotherapeutics company.

Developing science, delivering therapies.

Live Biotherapeutics – disruptive new medicines

Live Biotherapeutics are a regulated, emerging and disruptive new class of medicines, which have the potential to transform the way in which we treat many diseases.

Our Live Biotherapeutics are strains of gut commensal bacteria which have been originally isolated from healthy humans. These are then cultured and grown before being encapsulated, administered orally and delivered selectively to the gut where they exert their therapeutic effects on the patient.

Watch our new video:
4dpharmaplc.com

Beyond gastrointestinal disease

Live Biotherapeutics are delivered to the gut, but can have far-reaching effects at anatomically distant sites of the body. Gut bacteria have evolved to manipulate the human immune system and we are harnessing this to develop Live Biotherapeutics. Utilising this, we are developing Live Biotherapeutics for diseases as diverse as cancer and asthma and even conditions of the central nervous system such as Parkinson's disease and multiple sclerosis.

Why mechanism matters

Human gut bacteria contain thousands of genes. Understanding which of these genes – and their products – interact with the human body in a beneficial way is key to identifying new Live Biotherapeutics. Our scientists have deep expertise in microbiology, immunology and bioinformatics, which allows us to select our candidates based on an understanding of interactions at the molecular level.

Highly attractive safety profile

Toxicity and unwanted side effects are a constant challenge in drug development. Safety concerns account for more than 50% of drug programme terminations and can also lead to sub-optimal treatment regimens, a concern for both patients and clinicians.

Our Live Biotherapeutics are originally isolated from healthy human donors and consequently have excellent safety profiles. This allows us to safely expedite our products into the clinic, getting them to the patients that need them more rapidly.

An integrated biopharma company

MicroRx – our proprietary discovery platform

Our discovery platform, MicroRx, allows us to rapidly identify strains of gut bacteria which may have a therapeutic effect in specific diseases. Using MicroRx, we interrogate our proprietary library of more than 6,000 bacterial strains for pathway-specific effects on the host immune system. Importantly, we understand mechanism. We elucidate the mechanisms by which our Live Biotherapeutics exert their effects with exquisite detail, including the identification of bacterial effector molecules and their cognate human receptors.

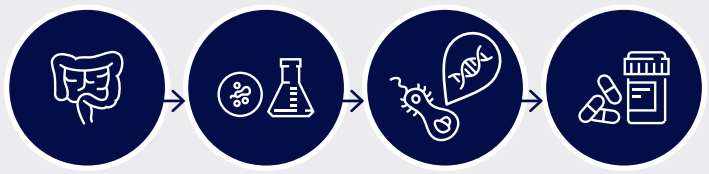
Unlike traditional drug discovery, which involves multiple rounds of hit and lead optimisation to identify a clinical candidate – a process which can take a number of years – we can progress from concept to clinic-ready product in as little as 24 months, helping us get our therapies to patients who need them more rapidly.

In-house development and manufacturing

We have a 1,500m² GMP-certified development and manufacturing facility with the capacity to produce up to 100 million capsules of product per year. Our team has decades of expertise in anaerobic fermentation, and the know-how to scale and produce our Live Biotherapeutics ready for clinical testing and beyond.

Clinical operations

Our expanded clinical operations team is in place to manage our multiple clinical studies as we advance through the clinic. By the end of 2018, we plan to have four clinical programmes underway in parallel and with programmes in areas such as multiple sclerosis and rheumatoid arthritis in the final stages of development.



Source
Gut microbiota from healthy humans

↓

Isolation
Individual bacterial strains on selective media

↓

Identification
of bacteria using genome sequencing

↓

Functional screen
Microbiology Immunology Gut physiology

Mechanism of action
Microbiology Immunology Gut physiology

↓ ↓

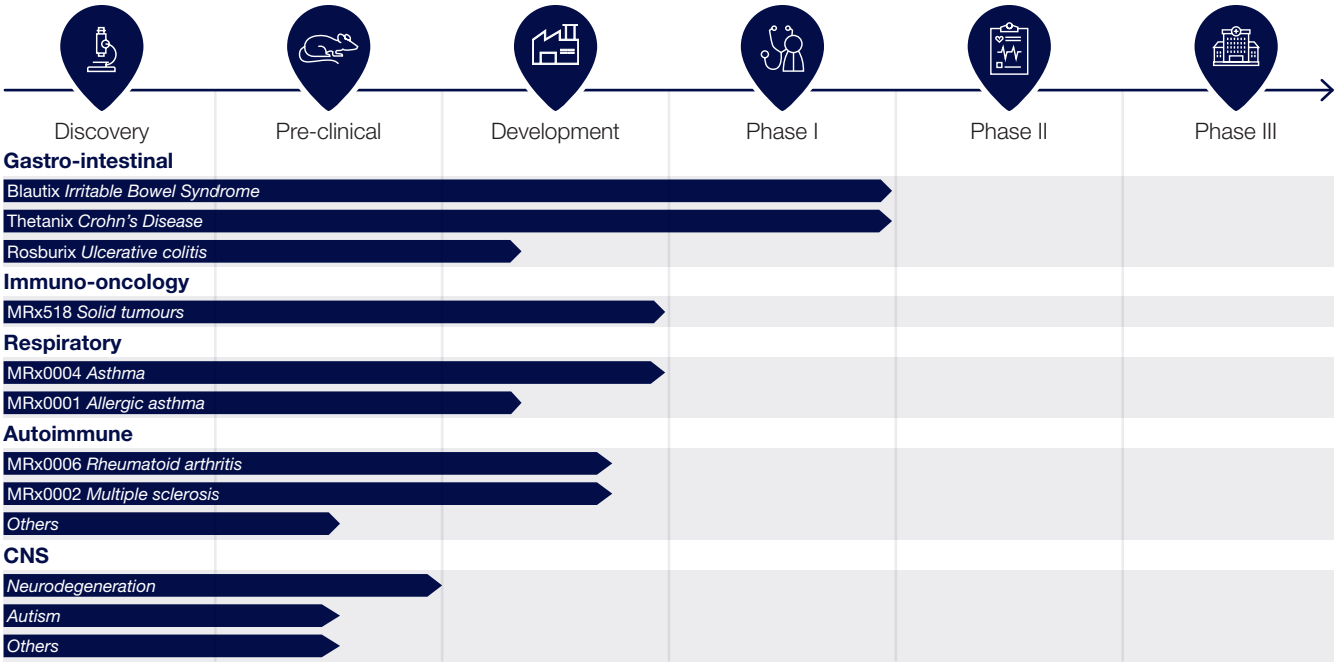
Mechanisms
Pre-clinical models

Efficacy
Pre-clinical models

↓ ↓

Development
RCB Scale-up Lyophilisation Stability Safety Potency

Development pipeline



Chairman's Statement

With its upcoming programme of trials, 4D is well placed to deliver meaningful clinical data to support the use of Live Biotherapeutics across multiple indications

Strategic objectives

Since the Group's initial public offering, 4D has grown rapidly to become a world leader in the development of Live Biotherapeutics, an "end-to-end" microbiome company, from research to development and manufacture.

Our research teams continue to further the understanding, both of our programmes and their mechanisms, and of the microbiome generally. The past twelve months have seen the validation of MicroDx, our diagnostic platform enabling the stratification of IBS patients. Our GMP-certified facility in León, Spain, has enabled the development scale-up for our candidate strains and has increased clinical/production capacity to up to 100 million capsules per annum. Meanwhile our increasing intellectual property estate helps secure our leading position in the field.

As we move forward, our key goal is to deliver meaningful clinical data to support the use of Live Biotherapeutics across multiple indications. I believe that through our upcoming programme of clinical trials, we are well positioned to achieve this.

Governance and Board

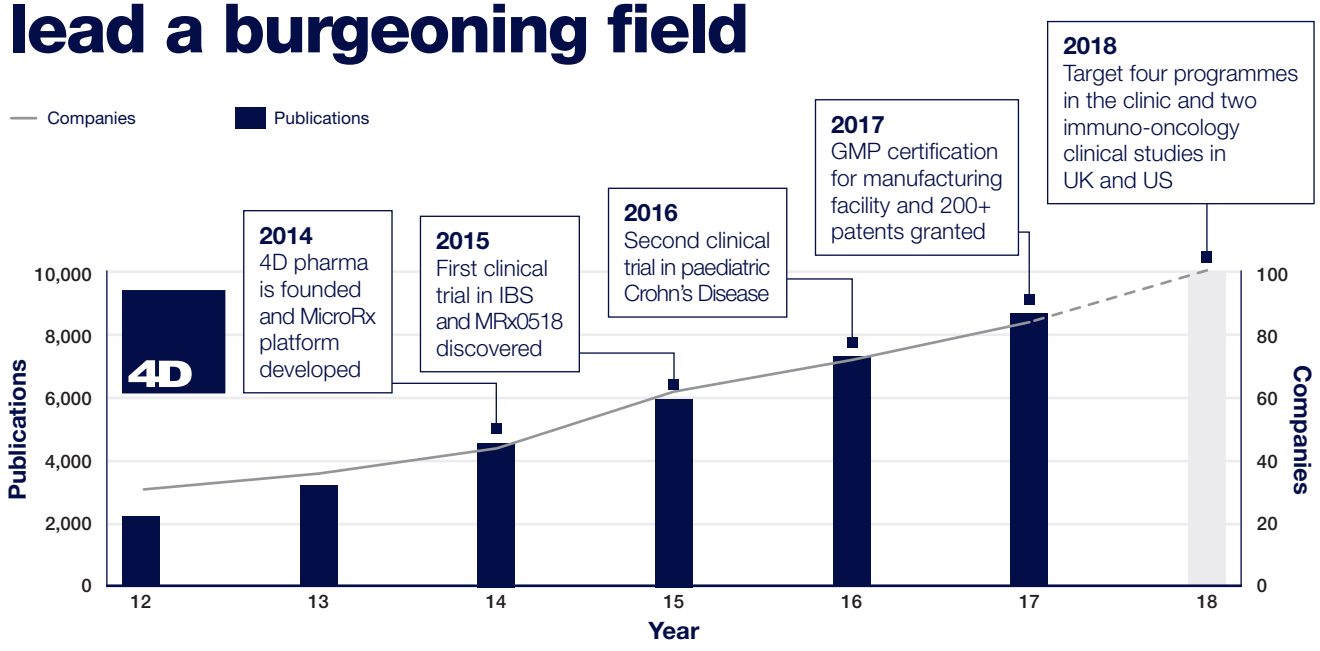
The Board is committed to maintaining high standards of governance, both at Board level and operationally throughout the business. The Company's Corporate Governance Statement can be found on pages 15 to 17.

Our people

We could not have achieved what we have without the continued support of our staff throughout our sites in Europe, and also those involved in our wider collaborations. I would like to thank them all for their contribution to the progress we have made in 2017.

David Norwood
Non-Executive Chairman
20 April 2018

Consistent progress to lead a burgeoning field



Chief Executive Officer's Report

In 2017, 4D has made significant progress towards its goal of delivering Live Biotherapeutics as safe and effective therapies

4D's approach

If we step back and look at what 4D is trying to do (namely to bring to market not only new drugs but a new therapeutic modality), it is not an easy task. The FDA approved only 22 new drugs in 2016 and only eight of those were first in class. Nevertheless, we believe 4D is well positioned to achieve its goals.

With any new drug, whether or not first in class, or new modality there is risk. Any new drug or modality brings concern over safety, and it is rightly the top priority for the industry and regulators. More than 50% of traditional drug programme failures can be attributed to safety.

Notwithstanding this, given the pull for new or better medicines, industry and investors are prepared to accept such risks and, as we have recently seen with the interest in CAR-T therapies, successfully bringing a new therapeutic class to market can deliver significant value to investors.

It is widely believed that Live Biotherapeutics and the microbiome will go some way to address such risks, by bringing a different approach to treatment regimes and to disease, and doing so safely. This puts a high expectation on Live Biotherapeutics and the field of microbiome research, and to date the field has fallen short of this expectation.

Building upon our work and investment in research, clinical progression and manufacturing capability, we believe 4D is well positioned to change this. During 2017 we have laid the groundwork to take our products into patients across a host of disease areas with the aim to provide robust clinical data to demonstrate the potential of Live Biotherapeutics.

Current clinical programmes

We have worked with regulators and clinicians, both in Europe and the United States, to develop Blautix, our clinical programme in Irritable Bowel Syndrome ("IBS"). Building on the patient data from the phase I trials, which both reinforced the safety of our Live Biotherapeutics and highlighted promising efficacy signals, we believe Blautix to address a key underlying cause of the disease and not just the symptoms, as is the case with current available treatments.

Consequently, we are looking to address the IBS subtypes (IBS-C (constipation) and IBS-D (diarrhoea)) in our upcoming phase II trial. Targeting commencement of dosing in the second half of 2018, the trial will be conducted in both Europe and the United States. The trial will look to dose up to 500 patients, to give sufficient power to indicate efficacy, as well as providing further insights into a disease which is estimated to affect over 10% of the global population, but, irrespective of its prevalence, is not yet well understood.

We have completed dosing in the phase I study of Thetanix, our clinical programme in Paediatric Crohn's Disease, and we will report the outcome of this study in the coming months. Moving to the next stage of the development of Thetanix, we have decided to initially focus our efforts on the adult population. The rationale for this is that, whilst the need for a safe and effective paediatric solution remains high, it is a reflection of the severe nature of the disease that our recruitment for the phase Ib trial was slow, with a number of eligible patients screened experiencing flare before they could enter the trial.

We will explore opportunities to remain active with this group of patients and continue to involve those patients and clinicians we have been working with.

The Thetanix phase II study will recruit adult Crohn's Disease patients and we anticipate making regulatory submissions for this study in the second half of 2018.

Oncology and other pending clinical programmes

An area of increasing interest in the microbiome field, and one 4D has long focussed on, is oncology.

In late 2015 our proprietary MicroRx discovery platform identified a bacterium, MRx0518, that had shown efficacy in pre-clinical cancer models. Through 2017, we have concentrated on two areas of MRx0518 development, firstly unpicking the mode of action and secondly preparing for clinical studies.

We believe understanding mechanism is critical to the development of Live Biotherapeutics as a therapeutic class; we do not believe the field can continue to take an "ecobiotic" approach to therapeutics, simply relying on a correlation of the presence/absence of bacteria. We aim to understand how the bacteria influence disease by using MicroRx to pick out strains that have a functional effect on pathways that are known (by clinicians, regulators and industry alike) to be associated with disease. As recently announced, 4D has highlighted key aspects of the mode of action of MRx0518, identifying a specific component of the bacteria that stimulates pathways known to be associated with the body's response to cancer; these findings are to be investigated further in upcoming clinical trials.

Chief Executive Officer's Report continued

Oncology and other pending clinical programmes continued

Our approach to the clinical development of MRx0518 encompasses parallel studies to evaluate safety, efficacy and anti-tumour immunity in the monotherapy and combination settings.

Our first trial in oncology is a monotherapy study investigating the effect of MRx0518 on patients with solid tumours in the neoadjuvant setting. We are treating patients between diagnosis, where a biopsy is taken, and resection, with a follow-up post-surgery.

In addition to the safety data this trial will generate for MRx0518, the study will provide 4D the opportunity to investigate the impact on MRx0518 on a "clean" immune system. Patients enrolled in the study will have early stage disease and thus their immune system will not have been previously exposed to cycles of other cancer therapies. The early stage of intervention in this trial further demonstrates the lower risk our Live Biotherapeutics represent in terms of safety, but also provides potential insights into how MRx0518 may influence treatment regimes post-surgery.

Working with leading institutions as partners, such as Imperial College as well as the MD Anderson Cancer Center in Houston, one of the world's most respected institutions focussed on cancer patient care and research, our work in oncology has led to the development of strategies to understand the potential of Live Biotherapeutics, whether as a single agent, adjuvant or in combination.

Furthermore, our involvement with these groups and in this space has led us to look at the potential of addressing other diseases associated with the side effects of cancer treatment with our Live Biotherapeutics, further demonstrating the impact we believe Live Biotherapeutics can have in the oncology space.

In a similar way to the development of our cancer programmes, we are continuing to advance our programme in asthma. Targeting regulatory submission for the study in Q3 2018, 4D will investigate the use of MRx0004 in a phase I/II study in asthma patients with poorly controlled symptoms. The trial will primarily investigate the safety of MRx0004 and will additionally have a suite of secondary endpoints to give an indication of efficacy.

Development

Key to the success of our programmes is the ability to deliver therapies to patients. During 2017 4D further upgraded its development and manufacturing facility in León in Spain, and it is now a standalone fully operational GMP-certified facility for the production of Live Biotherapeutics.

The team at León has now provided multiple batches of clinical material across a number of programmes and, with 4D's development team, is working on the development and scale-up of the next strains coming through the R&D platform.

Research and intellectual property

Coming full circle back to research, and from where 4D started, our scientific teams continue to lead in the understanding of mechanisms of action of our existing programmes, to discover new potential disease areas of interest, and to support our clinical efforts.

2017 was particularly significant in the development of our understanding of how the microbiome and metabolite profiles of patients can be used in both the diagnosis of disease and the identification of patients likely to respond to our Live Biotherapeutics. In March 2017, we reported interim clinical data demonstrating our ability to differentiate IBS patients from healthy individuals based on both microbiome and metabolite profiles, and the commonalities of the microbiome across all IBS subtypes. This observational study was completed in August and we are now well advanced in preparation for a larger, multi-centre trial, to further validate this work, at sites in the UK, Ireland and the US.

In tandem with research, we have focussed on developing our intellectual property estate, the largest in the microbiome sector, to help secure and consolidate our leading position in the field, having at year end 207 granted patents and 320 patent applications, from 32 patent families. To enable this focus, we have had to postpone our desire to publish our work, but now, having gained a market-leading intellectual property position, over the coming year we will be actively seeking to publish our research in leading publications and at conferences.

Financial summary

In the year to December 2017, our cash and cash equivalents and short-term deposits reduced from £68.8 million to £50.0 million, with a loss before tax of £24.0 million (compared with £11.7 million in the year to December 2016), though this included £3.5 million of non-recurring costs arising from the revaluation of the contingent consideration on Cork after it achieved the first milestone. Our claim for research and development tax credit was £3.5 million (compared with £1.8 million in the year to December 2016).

Our cash burn for the year was in line with expectation, reflecting among other things the increased costs of taking our existing clinical programmes forward, and preparing our next wave of programmes for upcoming phase I and II trials.

The Group continues to manage its cash deposits prudently and invests its funds across a number of financial institutions which have investment grade credit ratings. The deposits range from instant access to twelve-month term deposits and are regularly reviewed by the Board. Cash forecasts are updated monthly to ensure that there is sufficient cash available for the Group's foreseeable requirements. More details on the Group's treasury policies are provided in note 24 to the financial statements.

Outlook

Throughout 2017, 4D made significant progress towards its goal of producing Live Biotherapeutics as safe and effective therapies. Over the next twelve to 24 months, the Group will, through its clinical programmes, seek to lead the way in generating robust clinical data to support the use of this new class of drugs across multiple indications.

Duncan Peyton
Chief Executive Officer
20 April 2018

Upcoming 4D pharma clinical studies 2018

Q2

Immuno-oncology
Clinical study: Phase Ib
LBP candidate: MRx0518
Anticipated study opening: Q2 2018

Q3

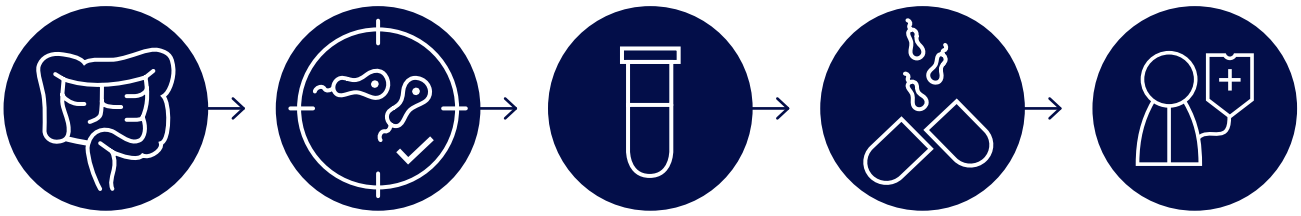
Irritable Bowel Syndrome
Clinical study: Phase II
LBP candidate: Blautix
Anticipated study opening: H2 2018

Crohn's Disease
Clinical study: Phase II
LBP candidate: Thetanix
Anticipated study regulatory submission: H2 2018

Asthma
Clinical study: Phase I/II
LBP candidate: MRx0004
Anticipated study regulatory submission: Q3 2018

Our Business Model and Strategy

Leading pharma in a rapidly emerging field



We source and isolate gut bacteria from healthy human donors

The Live Biotherapeutics we develop are single strain to impact a specific disease pathway

We work with partners and, through our trials, we develop and prove encapsulation

We manufacture Live Biotherapeutics in our primary site

We deliver our products to our clinic and ultimately to the patient

Creating value for

Patients | Partners | Employees | Regulators

World-leading research

Description

4D seeks via its research base to lead the understanding of how the microbiome functions in health and disease, and advance the potential of Live Biotherapeutics, including by way of long-term collaborations with world-leading academic institutions.

Performance

4D mines its discovery platform MicroRx to identify Live Biotherapeutics that show therapeutic effect, with defined functional mechanisms of action applicable to target indications. In MicroDx, 4D is building a platform to exploit the microbiome for diagnosis, to aid the treatment of disease via patient stratification and provide better patient outcomes.

Focus areas

4D focusses on understanding the functionality of Live Biotherapeutics and the mechanisms by which they affect host biology and influence disease, and to do so across a number of disease areas, to broaden the impact of the microbiome.

Rapid cost-effective development

Description

4D seeks to dramatically reduce the development timelines of its programmes by reference to traditional pharma, establishing accelerated development processes for its Live Biotherapeutics. 4D targets its programmes to be ready for patient trials within 24 months from concept.

Performance

4D exploits the enhanced safety profiles of therapeutics that originate from a healthy human. This reduces pre-clinical testing and lead optimisation timelines, and allows first-in-man clinical studies in patients as well as healthy individuals.

Focus areas

4D seeks to leverage on every key element of the development process, to mine clinically relevant data, which can be accessed more swiftly due to the accelerated timelines.

Development and delivery

Description

4D has long recognised the need to address and control manufacture and delivery issues early on, to ensure against any loss of flexibility and pace of development and maintain speed to the clinic, and further to enable multiple programmes to be run in parallel.

Performance

In 2016 4D established its own development and manufacturing facility in León, Spain, via the acquisition of the production assets of Instituto Biomar, S.A. Since then, 4D has taken it to a GMP-certified facility, enabling the development scale-up for its candidate strains and increasing clinical/production capacity to up to 100 million capsules per annum.

Focus areas

By bringing in house both manufacture for current and pending clinical programmes and development and scale-up of the strains coming through the R&D programme, 4D is continually expanding and refining proprietary know-how key to the development of Live Biotherapeutics.

New regulatory framework

Description

Live Biotherapeutics are a class of drugs whose regulatory environment is new and evolving.

Performance

4D is working with the regulators and clinicians, both in Europe and the United States, to help understand and define this emerging class of therapeutics and the clinical processes affecting them. 4D seeks to set new standards for safety and delivery, building upon its increasing clinical know-how and experience.

Focus areas

4D regularly engages with world-renowned key opinion leaders in its target indications, to help understand and inform new approaches to disease, and to its cause, diagnosis and treatment.

Intellectual property rights

Description

In this rapidly developing field, 4D believes it is vital to actively pursue patent protection for the innovations made.

Performance

4D has built up its intellectual property estate, the largest in the microbiome space in terms of coverage and geographical scope, to help secure and consolidate its leading position in the field.

Focus areas

Having successfully established this leading position, 4D is commencing an extended programme of publications and conferences.

Our Key Performance Indicators

Measuring our performance

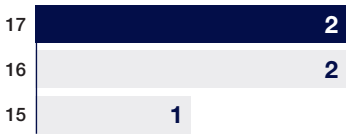
Although we are still in the early stages of our development, we track a series of metrics focussed primarily on science and product development whilst ensuring the business has sufficient resources which are being effectively allocated to ensure achievement of our strategic goals.

The Board of 4D and management monitor the progress of our business, maintaining discipline throughout the different functions of the business as part of our strategic aim of delivering therapeutic products to the market and becoming a self-sustaining and cash-generative business.

As we are currently in the pre-revenue stage of our development the core focus of the business is on innovation and progression of candidates in our pipeline through the clinic into approved products.

Number of clinical studies commenced

2 +0%

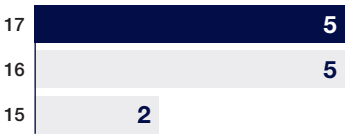


Pipeline progression performance measure – development of research

Long-term value will be created via successful progression of the pipeline through clinical trials into commercial products. We currently have 17 wholly owned Live Biotherapeutic programmes in the pipeline across various stages of development.

Number of candidates manufactured for clinical trials

5 +0%

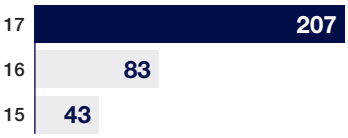


Pipeline progression performance measure – development of product

Without the ability to manufacture the products coming through the pipeline we will not be able to commercialise these.

Number of patents granted

207 +149%

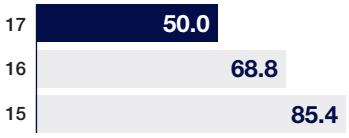


Research and innovation performance measure

4D was born out of innovation and this continues to be a cornerstone of the Group and in 2017 we continued to invest in people, facilities and technology. Our strategic aim is to commercialise Live Biotherapeutic products and as such a comprehensive portfolio of intellectual property is vital to the Group's ability to achieve this. The Group's portfolio of intellectual property is therefore a valuable asset and a significant amount of resource has been allocated to strengthening this portfolio during the year.

Cash, cash equivalents and cash on deposit (£m)

£50.0m -27%

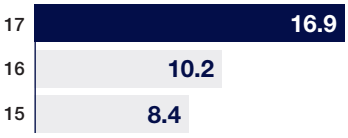


Financial resource measure

We need to ensure that we have sufficient cash in hand and on deposit to cover the anticipated future costs of developing the science through our various strategic milestones.

R&D spend (£m)

£16.9m +66%



Financial allocation of resources

The split of overheads between research and development ("R&D") and other costs, whilst not necessarily highlighting the qualitative aspects of that spend, does enable us to ensure that we are directing sufficient operating funds towards the advancement of our technology.

Risk and Risk Management

Identifying and understanding key risks to the business

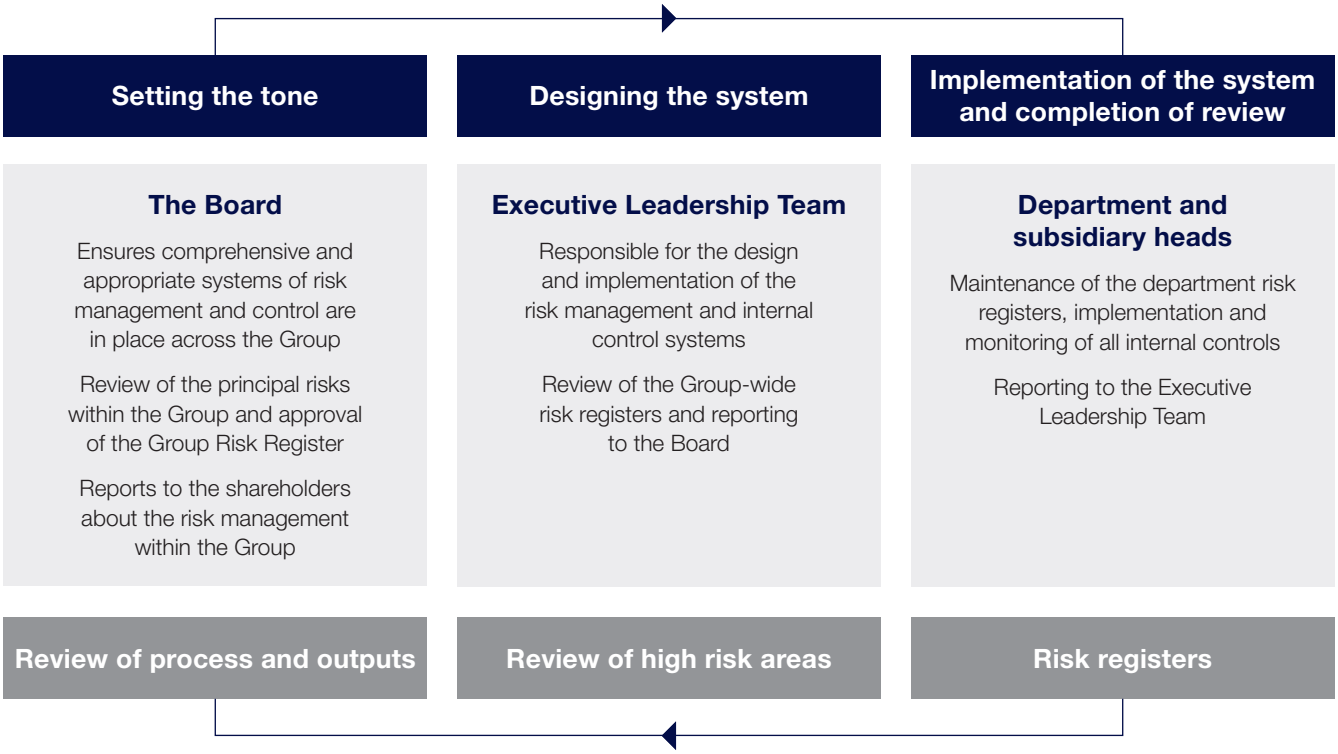
During the year the Group has continued to grow and with this growth the management and mitigation of risk has become more important. In line with the development of the business we have continued to develop our internal systems of risk management.

4D operates within a complex regulatory environment, which is subject to change. The nature of Live Biotherapeutic product development exposes us to a number of additional risks and uncertainties which could affect our ability to meet our strategic goals, our business model and our operating environment.

The Board is accountable for carrying out a robust assessment of the principal risks facing the Group, and has developed a risk management framework which provides the structure within which the principal risks affecting our business are managed and sets the tone, culture and appetite for risk.

The key objectives for this process are to ensure that the risk appetite of the Board is embedded throughout the Group and fully understood by all members of the team who have responsibility for managing the risk and making key business decisions. This will then be encoded in systems of internal controls, which will seek to mitigate the principal risks that could affect the strategy and operation of our business model and finally to ensure that identified risks are reported to the relevant stakeholders in a timely manner.

We are continuously developing and improving our risk management process through ongoing review and evaluation of the risks, clarifying our risk appetite and reviewing the longer-term viability of the business to make sure that we fully understand our risks and are managing them appropriately. These systems can be summarised as follows:



Risk and Risk Management continued

Third-party patents could limit the Group's freedom to operate

Why is it important?

A third-party patent could be granted that affects a 4D technology or product. This could lead to us having to negotiate a licence, seeking to revoke the patent in legal proceedings, or even being unable to commercialise the future product, materially affecting future revenues.

Current mitigating actions

4D is diligent in carrying out searches to identify potential third-party IP; a comprehensive freedom to operate strategy has been developed and implemented to ensure that no blocking patents owned by third parties are unexpectedly granted. The third-party patent landscape is under continuous review. The Group has developed and continues to develop comprehensive and wide-ranging filings of detailed patents across the Group's technology portfolio. There have been a significant number of patents granted since the inception of 4D (including US and European patents on each of the lead projects) with a substantial year-on-year growth of the portfolio and an increasing number of new applications filed.

Change in level of risk

No change

Product development in a breakthrough technology could encounter unforeseen delays to programmes

Why is it important?

Live Biotherapeutic products are a novel and emerging technology; neither 4D nor anyone else has taken a product through development to the marketplace. We are currently working on a number of wholly owned development programmes of our pipeline which will provide the Group with the opportunity to self-commercialise. Failure to complete development activities to plan may impact on the Group's ability to bring products to market on time which would affect the timings of future revenues and hinder the Group's ability to deliver its strategic goals.

Current mitigating actions

As we complete each stage of development and move through the clinic, we broaden our understanding of how to bring Live Biotherapeutic products to market. In addition, as we widen our programmes in different disease areas, we further mitigate the risk of failure of a single programme. While Live Biotherapeutic products are novel, the associated regulatory and clinical pathways are based on existing frameworks. During the year we have continued to make significant investments in our clinical team and we plan for this to continue in 2018 as we head into the clinic for both phase I and phase II trials.

Change in level of risk

Decrease

Security and resilience of our IT systems and data

Why is it important?

In any business, but particularly in a business growing so readily in terms of staff and sites and in an emerging field, it is vital that we know that our systems are secure and efficient to protect our data and ensure efficient collaboration.

Current mitigating actions

We commissioned a review of our systems in 2016 and in 2017 these were successfully rolled out across the Group. These systems provide the Group with a secure, efficient platform through which we are able to share information and collaborate effectively across all sites and with external partners.

Change in level of risk

Decrease

Failure to gain regulatory approval

Why is it important?

The biotechnology and pharmaceutical markets are highly regulated by government authorities in the UK, the US and Europe. These regulatory requirements are a major factor in determining whether a substance can be developed into a marketable product and the amount of time and cost associated with such development. Even if products are approved, they may still face subsequent regulatory difficulties which could result in delays and therefore financial loss.

Current mitigating actions

We have continued to invest in the clinical and regulatory team during the year.

Change in level of risk

Decrease

Exchange rate movements

Why is it important?

Although 4D reports its results in Sterling, a significant proportion of our operations trade in local currency and as such the Group has a large exposure to the Euro and to a lesser extent the US Dollar. Fluctuations in these currencies could therefore impact the Sterling operating costs and therefore the cash flows of the Group.

Current mitigating actions

We constantly monitor currencies and their movements against Sterling. As the Group is currently pre-revenue the exposure affects the cost of operations and although the size of the exposure is significant we have sufficient cash resources to manage these changes and have planned these prudently into our forward forecasts.

Change in level of risk

No change

UK referendum to leave the European Union ("EU") – Brexit

Why is it important?

The UK decision to leave the EU could have a significant impact on the way the Group operates, both in terms of our foreign subsidiaries, overseas suppliers and in eventual revenue from any products which get to market. At the moment we are not certain of the impact that this will have on trade tariffs, taxation, the impact on the nature of international trade including access to trade and the exchange rate which affects the relative cost and income that will be recognised in the accounts and in future planning.

Current mitigating actions

As the Group is currently pre-revenue the impact is currently limited to fluctuations in costs and as a result of the exchange rate and any cross border tariffs. Through constant monitoring of the situation the Group remains reactive and looks to adjust its policies accordingly to minimise any adverse factors resulting from the ongoing negotiations. The Group reviews its cash flow projections for changes in exchange rates and the impact it would have and manages its holdings in funds accordingly.

Change in level of risk

Increase

The Strategic Report on pages 2 to 13 was approved by the Board on 20 April 2018 and signed on its behalf by:

Duncan Peyton
Chief Executive Officer
20 April 2018

Board of Directors

We believe in the importance of good corporate governance

David Norwood

Non-Executive Chairman A R

David has had a long career building a number of science, technology and investment companies. He is the founder of IP Group plc, one of the UK's leading technology commercialisation businesses, and a shareholder in the Company. Previously, he was chief executive of stockbroker Beeson Gregory (acquired by Evolution Group plc) after it acquired IndexIT Partnership, a technology advisory boutique he had founded in 1999. He was a founding shareholder of Evolution Group plc (recently acquired by Investec), and also co-founder of Ora Capital plc.

He has been a founder and director of many UK technology companies including Oxford Nanopore Technologies Limited, Proximagen Limited, Synairgen plc, Ilika Technologies Limited, Oxford Catalysts and Plectrum Petroleum (acquired by Cairn Energy plc). He has also acted as seed investor and/or advisor to Wolfson Microelectronics Limited, Nanoco Technologies Limited, Tissue Regenix Group plc and Arc International (now part of Synopsys). He is also non-executive chairman of Abaco Capital plc and Genomics plc.

Alexander Stevenson

Chief Scientific Officer

Alex began his career as a microbiologist, working in research for a number of years before joining an NYSE-quoted drug development company. He subsequently moved into pharmaceutical and healthcare investment and has fulfilled a number of board-level investment and operational management roles. He was a director and shareholder in Aquarius Equity from 2008, where he was responsible for identifying new investments and developing and implementing scientific strategies both pre and post-investment. These included Tissue Regenix Group plc, C4X Discovery Holdings plc and Brabant Pharma (subsequently sold to Zogenix, Inc.).

Prior to joining Aquarius Equity, Alex worked for IP Group plc, where he specialised in life sciences investments identifying, developing and advising a number of companies in its portfolio, some of which went on to list on AIM. He joined IP Group following its acquisition of Techtran Group Limited in 2005.

A Audit and Risk Committee

R Remuneration Committee

■ Chairman

Duncan Peyton

Chief Executive Officer

Duncan has a proven track record in identifying, investing and growing businesses within the pharmaceutical sector. He was the founder of Aquarius Equity, a specialist investor in businesses within the life sciences sector, which provided investors with access to innovative, high growth potential companies that delivered significant capital growth. Duncan started his career in a bio-science start-up business, which ultimately went on to list on the London Stock Exchange, subsequently qualified as a corporate finance lawyer with Addleshaw Goddard, then Addleshaw Booth & Co, and later joined 3i plc as an investment manager.

Duncan founded Aquarius in 2005, which made founding investments into Nanoco Technologies Limited, Auralis Limited (subsequently sold to ViroPharma), Tissue Regenix Group plc, Brabant Pharma (subsequently sold to Zogenix) and C4X Discovery plc.

Thomas Engelen

Non-Executive Director A R

Thomas has been a founder and/or non-executive director of a number of UK life sciences companies including Colonis Pharma Limited, Warneford Partners Limited, Martindale Pharma Limited and Pneumagen Limited. Thomas has supported private equity and other investors in over 50 potential deal transactions, on targets in Europe and the USA, from cash constrained/chapter 11 to cash rich with enterprise value of up to $1 billion. Before this Thomas worked in life sciences for over 20 years in senior executive roles.

Starting in 1987 at Akzo Nobel Pharma, he worked with hospital products, diagnostics and medical equipment as general manager for the Middle East and Africa. After this he led Rosemont Pharmaceuticals in Leeds in niche oral liquid medicines, followed by being president of Organon in Brazil. He was promoted to VP The Americas, and lastly to CMO at Organon, in charge of the global product portfolio, based in the USA. Returning to Europe he led Novartis Consumer Health in the UK. Thomas has also acted as non-executive chairman at Akcros Holdings Limited, Penlan Healthcare and Quantum Pharmaceutical.

Corporate Governance Statement

Chairman's introduction

On behalf of the Board, I am pleased to present our Corporate Governance Statement for the year ended 31 December 2017.

Since the Company's initial public offering, as the Company and the Group have grown, the Board has maintained a regular review and evaluation of its effectiveness, and that of the wider governance structure of the Group.

As an AIM-quoted company, the Company is not required to comply with the UK Corporate Governance Code. The Board has nevertheless always sought to apply policies and procedures which reflect the principles of good governance and best practice reflected in the Code, as appropriate to the size, nature and stage of development of the Company.

We believe the Company's governance structure has facilitated the growth and development of the Group. However, as set out in the Corporate Governance Statement, as the Group continues to grow, we will maintain this evaluation and take the governance steps necessary to support the Group's development.

David Norwood
Non-Executive Chairman
20 April 2018

This section of the Annual Report describes the Group's corporate governance structures and processes and how they have been applied during the year ended 31 December 2017.

The Company's ordinary shares have been admitted to trading on AIM of the London Stock Exchange and the Company is subject to the continuing requirements of the AIM Rules. The UK Corporate Governance Code sets out the principles of good practice in relation to corporate governance which should be followed by companies with a full listing on the London Stock Exchange. Although the Company is not required to comply with the UK Corporate Governance Code by virtue of being an AIM-quoted company, the Board seeks to apply the QCA Corporate Governance Code for Small and Mid-Size Quoted Companies ("QCA Guidelines") to the extent appropriate and practical for a company of its nature and size. This section provides general information on the Group's adoption of the QCA Guidelines.

Board composition and responsibility

The Board consists of four Directors, two of whom are Non-Executive. The names of the Directors, together with their biographical details, are set out on page 14.

The Board has determined that Thomas Engelen is independent in character and judgement, and that there are no relationships or circumstances which could materially affect or interfere with the exercise of his independent judgement. Thomas previously provided ad hoc consultancy services to the Company's subsidiary 4D Pharma Research Limited which were consequential to his former role as one of its Non-Executive Directors. Such services ceased in early 2015, prior to 4D Pharma Research Limited becoming a wholly owned subsidiary, and the Board does not believe that such historical services compromise his independence in any way.

The Board has determined that David Norwood is not independent, by virtue only of his holding of ordinary shares in the Company, summarised on page 23. The Board has nevertheless determined that (save only for his holding of ordinary shares) there are no relationships or circumstances which could materially affect or interfere with the exercise of his independent judgement.

The Board remains satisfied with its composition and the balance between Executive and Non-Executive Directors, which allows it to exercise objectivity in decision making and proper control of the Group's business. The Board notes the recommendation in the QCA Guidelines that a company should have at least two independent non-executive directors and should not be dominated by one person or a group of people. The Board believes it meets this recommendation, save only in respect of the holding of ordinary shares in the Company by David Norwood.

Decision making

The Board's primary objective is to focus on adding value to the assets of the Group by identifying and assessing business opportunities and ensuring that potential risks are identified, monitored and controlled.

Material issues are reserved to a decision of the Board, including approval (and review of performance) of the Group's strategic aims and objectives; approval of the annual operating and capital expenditure budgets (and any material changes to them); approval of all financial statements and results; and maintenance of a sound system of internal control and risk management. The implementation of Board decisions and day-to-day operations of the Group are delegated to Executive Directors.

Corporate Governance Statement continued

Board composition

Executive	2
Non-Executive	2

Decision making *continued*

The Board meets both at regular intervals and also at short notice to consider specific matters (for example proposed material transactions). The Board receives appropriate and timely information prior to each meeting, with a formal agenda and Board and Committee papers being distributed several days before meetings take place. Any Director may challenge Group proposals, and decisions are taken democratically after discussion. Any Director who feels that any concern remains unresolved after discussion may ask for that concern to be noted in the minutes of the meeting. Any specific actions arising from such meetings are agreed by the Board and then followed up by management.

The Non-Executive Directors constructively challenge and help develop proposals on strategy and bring strong, independent judgement, knowledge and experience to the Board's deliberations. The Directors are given access to independent professional advice at the Group's expense when the Directors deem it is necessary in order for them to carry out their responsibilities.

The Group has effective procedures in place to deal with conflicts of interest. The Board is aware of other commitments of its Directors, and changes to these commitments are reported to the Board.

Appointment and re-election of Directors

All Directors of the Company have been appointed (or re-appointed) by shareholders; the Chairman was appointed to the Board by resolution of the shareholders of the Company on 5 February 2014 (prior to the admission of the Company shares to trading on AIM on 18 February 2014), and will offer himself for re-election at the forthcoming Annual General Meeting of the Company.

Each of the Directors is subject to retirement by rotation and re-election in accordance with the articles of association of the Company. All Directors appointed by the Board are subject to election by shareholders at the first Annual General Meeting after their appointment.

Board evaluation

Given its composition and flexibility, the Board has been able, since the admission of the Company's shares to trading on AIM, to maintain a regular evaluation of its effectiveness and that of its Committees. It is believed that the Board and its Committees have functioned well throughout this period, meeting with appropriate regularity and with Directors free to voice differing opinions. In particular, the Board still considers its composition to be appropriate (in view of the size and requirements of the Group's business, and the need to maintain a practical balance between Executives and Non-Executives). However, it also considers that the Group is nearing the position where the Board would benefit from additional independent input. The Board is actively considering potential candidates for a further independent Non-Executive Director.

Committees

The Board has established an Audit and Risk Committee and a Remuneration Committee, with formally delegated duties and responsibilities. The Board has, since the admission of the Company's shares to trading on AIM, kept under regular review the possible establishment of a nomination committee. The Board remains of the view that, given the current composition of the Board, it is not appropriate to have a nomination committee. This will continue to be kept under regular review by the Board.

The Audit and Risk Committee

The Audit and Risk Committee comprises Thomas Engelen as Chairman and David Norwood as the other member of the Committee. Thomas Engelen is an independent Director and has recent and relevant financial experience. The Committee has primary responsibility for monitoring the quality of internal controls, ensuring that the financial performance of the Company is properly measured and reported on, and reviewing reports from the Company's auditor relating to the Company's accounting and internal controls, in all cases having due regard to the interests of shareholders. A report from the Chairman of the Audit and Risk Committee is on pages 18 and 19.

The Remuneration Committee

The Company has established a formal and transparent procedure for developing policy on Executive remuneration and for fixing the remuneration packages of individual Directors and senior management. The Remuneration Committee comprises Thomas Engelen as Chairman and David Norwood as the other member of the Committee. The Committee reviews the performance of the Executive Directors and senior management and determines their terms and conditions of service, including their remuneration and the grant of incentives, having due regard to the interests of shareholders. A report from the Chairman of the Remuneration Committee is on pages 20 and 21.

The Board believes that, in accordance with the QCA Guidelines, the Audit and Risk Committee and the Remuneration Committee have the necessary character, skills and knowledge to discharge their duties and responsibilities effectively; notwithstanding that (given the overall composition of the Board) there is not a majority of members who are independent Non-Executive Directors. Each Committee is, however, chaired by an independent Non-Executive Director.

Meetings

The number of Board and Committee meetings attended by each of the Directors during the year is shown below:

	Full Board	Audit and Risk Committee	Remuneration Committee
Number of meetings in year	7	1	1
Attendance:			
Executive Directors			
Duncan Peyton	7	—	—
Dr Alexander Stevenson	7	—	—
Non-Executive Directors			
David Norwood	7	1	1
Thomas Engelen	6	1	1

Approach to risk and internal control

The Board is responsible for establishing and maintaining the Group's systems of internal control. The primary responsibility for monitoring the quality of internal control has been delegated to the Audit and Risk Committee. Reference is made to the statement on Risk and Risk Management on pages 11 to 13.

Communicating vision and strategy

The Directors seek to visit institutional shareholders at least twice a year. In addition, all shareholders can attend the Company's Annual General Meeting, where there is an opportunity to question the Directors as part of the agenda, or more informally after the meeting. Communication with shareholders is seen as an important part of the Board's responsibilities, and care is taken to ensure that all price-sensitive information is made available to all shareholders at the same time.

Report of the Audit and Risk Committee

The Committee acts independently of management to ensure the interests of shareholders are protected in relation to financial reporting, internal controls and risk management.

Members

- Thomas Engelen (Chairman)
- David Norwood

As Chairman of the Audit and Risk Committee, I am pleased to present our report for the year ended 31 December 2017. The Audit and Risk Committee is a sub-committee of the Board and is responsible for reviewing all aspects of the financial reporting of the business and all aspects of internal control. The Committee represents the interests of our shareholders in relation to the integrity of information and the effectiveness of the audit processes in place.

Key responsibilities

The Committee acts independently of management to ensure the interests of shareholders are protected in relation to financial reporting, internal controls and risk management.

The principal duties of the Committee are to:

- monitor the integrity of the Group's financial reporting including the review of significant financial reporting judgements;
- advise the Board on whether, taken as a whole, the Annual Report and Accounts are fair, balanced and understandable;
- advise the Board on principal risks, their mitigation and risk appetite;
- review the robustness of our risk management and internal controls;
- oversee the external audit process including monitoring the auditor's independence, objectivity, effectiveness and performance; and
- approve any engagement by the external auditor outside of the Group's audit.

The Committee manages the relationship with the external auditor on behalf of the Board to ensure that the external auditor continues to be independent, objective and effective in its work, and also considers the re-appointment of the auditor each year.

RSM UK Audit LLP was appointed as auditor in 2014 following a comprehensive tender process. Each year the Committee considers the continued independence of the external auditor and the effectiveness of the external audit process, to determine whether to recommend to the Board that the current auditor be re-appointed.

The Committee has reviewed the external audit process in the year through meetings and reviewing the reports from the external audit team. The Committee has concluded that the external audit process was effective and is satisfied that the scope of the audit is appropriate and that significant judgements have been robustly challenged.

Composition and meetings

The Audit Committee during the year under review has consisted of two Non-Executive Directors. The Committee is chaired by me, Thomas Engelen, with David Norwood as the other member. I am an independent Director and have recent and relevant financial experience.

There was one meeting held in the year ended 31 December 2017 in April.

Committee meetings are also attended by Stephen Dunbar, the Finance Director, and representatives from the external auditor.

Significant issues relating to the financial statements

The specific issues considered by the Audit Committee in the year under review, in relation to the financial statements, are shown below.

Valuation of goodwill and other intangible assets

Testing of goodwill and other intangible assets for potential impairment is complex and requires a number of management estimates and sensitivities to be applied, which inevitably requires judgement and is a recurring matter.

The forecasting tools developed by management to help assess the values of intangible assets and goodwill were updated for variables that were known to have changed.

The Committee reviewed the reports together with the assumptions, judgements and sensitivities applied to the valuations and underlying models for impairment testing purposes. Following this review and after discussions with management the Committee is satisfied that no impairment charge should be recorded in the year to 31 December 2017 and that the disclosures in the financial statements are appropriate.

Thomas Engelen
Chairman of the Audit and Risk Committee
20 April 2018

Report of the Remuneration Committee

The Committee aims to attract, retain and motivate the executive management of the Company, and set remuneration at an appropriate level.

Members

- Thomas Engelen (Chairman)
- David Norwood

As Chairman of the Remuneration Committee, I am pleased to present our report for the year ended 31 December 2017.

This report does not constitute a Directors' remuneration report in accordance with the Companies Act 2006. As a company whose shares are admitted to trading on AIM, the Company is not required by the Companies Act 2006 to prepare such a report.

Key responsibilities

The Remuneration Committee is a sub-committee of the Board. Its principal purpose is to determine and agree with the Board the framework and broad policy for remuneration, and to determine the remuneration packages and service contracts of the Executive Directors, the Company Secretary and such other members of the executive management as it considers appropriate. Among other things, the Committee shall approve the design of, and determine targets for, any performance incentive schemes operated by the Company and approve the awards made under such schemes.

Composition and meetings

During the year the members of the Committee were me, Thomas Engelen, an independent Non-Executive Director, and David Norwood, the Non-Executive Group Chairman. All members served on the Committee throughout the year and to the date of this report. I was Chairman of the Committee throughout this period.

There was one meeting held of the Committee in the year ended 31 December 2017, held in April. The meeting was convened to consider and review the Group's remuneration policy, and to approve annual awards to senior management under the Group's Long Term Incentive Plan. There were no changes to the remuneration or service agreements of the Executive Directors during the period.

Policy on Executive remuneration

The Committee aims to attract, retain and motivate the executive management of the Company, and set remuneration at an appropriate level to promote the long-term success of the Group, in line with its strategic objectives.

The overall policy of the Board is to ensure that executive management is provided with appropriate incentives to encourage enhanced performance and, in a fair and responsible manner, rewarded for its contribution to the success of the Group.

The main elements of the remuneration packages for Executive Directors and senior management are as follows:

Basic annual salary

The base salary is reviewed annually. The review process is undertaken by the Remuneration Committee and takes into account several factors, including the current position and development of the Group, individual contributions and market salaries for comparable organisations.

The Company does not provide an occupational pension scheme for Executive Directors, nor does it make contributions into the private pension schemes of Executive Directors.

Directors' remuneration

The remuneration of the Directors who served on the Company's Board during the year to 31 December 2017 is as follows:

	31 December 2017		31 December 2016	
	Base salary and fees £000	**Total £000**	Base salary and fees £000	Total £000
Executive Directors				
Duncan Peyton	**101**	**101**	101	101
Dr Alexander Stevenson	**101**	**101**	101	101
Non-Executive Directors				
David Norwood	**25**	**25**	25	25
Thomas Engelen	**25**	**25**	25	25
	252	**252**	252	252

There were no bonus or pension schemes for the Directors during the year ended 31 December 2017.

Discretionary annual bonus

All Executive Directors and senior managers are eligible for a purely discretionary annual bonus. This takes into account exceptional individual contribution, business performance and technical and commercial progress, along with financial results.

Long-term incentives

The Group operates a long-term share incentive scheme; all Group Executive Directors and employees are eligible for the granting of awards under the scheme. Details of the awards made under the scheme during the year are provided in note 21 to the financial statements. All such awards vest after three years and are subject to individual performance criteria. There were no awards during the year to the Directors of the Company.

Benefits in kind

The Company provides taxable healthcare benefits for Executives.

Policy on Non-Executive Directors' remuneration

Non-Executive Directors receive a fixed fee and do not receive any pension payments or other benefits, nor do they participate in bonus or incentive schemes. The Board reviews Non-Executive remuneration to ensure that it is in line with current market rates in order to attract and retain high calibre individuals.

Service contracts

Duncan Peyton and Dr Alexander Stevenson have service agreements with an indefinite term providing for a maximum of twelve months' notice by either party.

Non-Executive Directors are employed on letters of appointment which may be terminated on not less than three months' notice.

Directors' interests in share capital

At 31 December 2017, and at the date of this report, David Norwood held 7,000,000 ordinary shares in the Company's share capital, or 10.7% (31 December 2016: 10.8%); each of Duncan Peyton and Dr Alexander Stevenson held 6,250,286 ordinary shares in the Company's share capital, or 9.5% (31 December 2016: 9.6%); and Thomas Engelen held 500,000 shares in the Company's share capital, or 0.8% (31 December 2016: 0.8%).

No Director was granted any share options in the year ended 31 December 2017; none of the Directors held any share options at 31 December 2017.

Thomas Engelen
Chairman of the
Remuneration Committee
20 April 2018

Directors' Report

The Directors present their report together with the audited consolidated financial statements, along with the Auditor's Report for the year ended 31 December 2017.

Research and development spend

2017	**£16.9m**
2016	**£10.2m**

Pages 2 to 24 inclusive (together with sections of the Annual Report incorporated by reference) comprise a Directors' Report that has been drawn up and presented in accordance with and in reliance upon applicable English company law and the liabilities of Directors in connection with that report shall be subject to the limitations and restrictions provided by such law.

Strategic Report

In accordance with section 414C(11) of the Companies Act 2006 and the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013, the Group has chosen to set out in the Strategic Report information required by schedule 7 of the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008.

Directors

The Directors who held office during the year, and as at the date of signing the financial statements, and brief biographical descriptions of the Directors, are set out on page 14.

The beneficial and non-beneficial interests of the Directors in the Company's ordinary shares of 0.25 pence are disclosed in the Report of the Remuneration Committee on pages 20 and 21.

No Director had an interest in any contract that was significant in relation to the Group's business at any time during the year.

Directors' indemnity insurance

The Group has maintained insurance throughout the year for its Directors and officers against the consequences of actions brought against them in relation to their duties for the Group. Such provision remains in force as at the date of approval of the Directors' Report.

Research and development activities

The principal activity of the Group is research and development, a review of which is included in the CEO's Report on pages 5 to 7.

Total research and development spend in the year to 31 December 2017 was £16.9 million (31 December 2016: £10.2 million). No development expenditure was capitalised in the current year or the year to 31 December 2016.

Subsequent events

There have been no important events affecting the Company or the Group since the year end.

Dividends

The Directors do not recommend payment of a dividend nor was there a dividend in the year to 31 December 2016.

Employment policies

The Group is committed to ensuring the health and safety of its employees in the workplace. This includes the provision of regular medical checks.

The Group is committed to keeping employees as fully informed as possible with regard to the Group's performance and prospects and seeks their views, wherever possible, on matters which affect them as employees.

Financial instruments

Details of the Group's financial risk management objectives and policies are disclosed in note 24 to the financial statements.

Substantial shareholders

The Company has been notified of the following interests of shareholders of 3% or more of the issued ordinary share capital of the Company at 31 December 2017, based on the ordinary shares in issue of 65,493,842 (31 December 2016: 64,858,150):

	Number of 0.25 pence ordinary shares as at 31 December 2017	**% of issued capital**	Number of 0.25 pence ordinary shares as at 31 December 2016	% of issued capital
Woodford Investment Management	**17,514,561**	**26.7**	17,514,561	27.0
Invesco Asset Management Limited	**9,163,617**	**14.0**	9,163,617	14.1
David Robert Norwood	**7,000,000**	**10.7**	7,000,000	10.8
Duncan Joseph Peyton	**6,250,286**	**9.5**	6,250,286	9.6
Dr Alexander James Stevenson	**6,250,286**	**9.5**	6,250,286	9.6
Lansdowne Partners	**3,000,000**	**4.6**	3,000,000	4.6

There were no notified significant changes in these holdings between 31 December 2017 and the date of the signing of these financial statements.

Share capital and funding

As at 31 December 2017 share capital comprised 65,493,842 ordinary shares of 0.25 pence each. There is only one class of share and all shares are fully paid. No share carries any right to fixed income, and each share carries the right to one vote at general meetings of the Company.

Full details of the Group's and the Company's share capital movements during the year are given in note 20 to the financial statements.

Details of shares under option are provided in note 21 to the financial statements.

Corporate Governance Statement

The Group's statement on corporate governance can be found in the Corporate Governance Statement on pages 15 to 17.

Going concern

The CEO's Report on pages 5 to 7 outlines the business activities of the Group, along with the factors which may affect its future development and performance, and discusses the Group's financial position, along with details of its cash flow and liquidity. Reference is made to the statement on Risk and Risk Management on pages 11 to 13.

Having prepared management forecasts and made appropriate enquiries, the Directors are satisfied that the Group has adequate cash and other resources for the foreseeable future, as the Group is at the start-up stage of its business lifecycle. Accordingly, they have continued to adopt the going concern basis in preparing the Group and Company financial statements.

Disclosure of information to the auditor

The Directors who held office at the date of approval of this Directors' Report confirm that:

- so far as they are each aware, there is no relevant audit information of which the Group's auditor is unaware; and
- each Director has taken all the steps that he ought to have taken as a Director to make himself aware of any relevant audit information, and to establish that the Group's auditor is aware of that information.

Auditor

RSM UK Audit LLP has indicated its willingness to continue in office. Ordinary resolutions to re-appoint RSM UK Audit LLP as auditor and to authorise the Directors to agree their remuneration will be proposed at the forthcoming Annual General Meeting.

Annual General Meeting

The Annual General Meeting of the Company will be held on 21 May 2018 at 11 a.m. at the Gridiron Building, 1 Pancras Square, London N1C 4AG.

Recommendation

The Board considers that the resolutions to be proposed at the Annual General Meeting are in the best interests of the Company and it is unanimously recommended that shareholders support these proposals as the Board intends to do in respect of its own holdings.

The Directors' Report was approved by the Board on 20 April 2018 and was signed on its behalf by:

Duncan Peyton
Chief Executive Officer
20 April 2018

Statement of Directors' Responsibilities

In relation to the Annual Report and financial statements

The Directors are responsible for preparing the Strategic Report, the Directors' Report and the financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare Group and Company financial statements for each financial year. The Directors are required by the AIM Rules of the London Stock Exchange to prepare Group financial statements in accordance with International Financial Reporting Standards ("IFRS") as adopted by the European Union ("EU") and have elected under company law to prepare the Company financial statements in accordance with IFRS as adopted by the EU.

The Group financial statements are required by law and IFRS adopted by the EU to present fairly the financial position of the Group and the Company and the financial performance of the Group. The Companies Act 2006 provides in relation to such financial statements that references in the relevant part of that Act to financial statements giving a true and fair view are references to their achieving a fair presentation.

Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Company and of the profit or loss of the Group and the Company for that period.

In preparing each of the Group and Company financial statements, the Directors are required to:

a. select suitable accounting policies and then apply them consistently;

b. make judgements and accounting estimates that are reasonable and prudent;

c. state whether they have been prepared in accordance with IFRSs adopted by the EU; and

d. prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group and the Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Group's and the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Group and the Company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the 4D pharma plc website.

Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Independent Auditor's Report

To the members of 4D pharma plc

Opinion

We have audited the financial statements of 4D pharma plc (the 'parent company') and its subsidiaries (the 'group') for the year ended 31 December 2017 which comprise the group statement of consolidated total comprehensive income, the group and parent company statements of financial position, the group and parent company statements of changes in equity, the group and parent company statements of cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union and, as regards the parent company financial statements, as applied in accordance with the provisions of the Companies Act 2006.

In our opinion:

- the financial statements give a true and fair view of the state of the group's and of the parent company's affairs as at 31 December 2017 and of the group's loss for the year then ended;
- the group financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union;
- the parent company financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union and as applied in accordance with the Companies Act 2006; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the group and parent company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed entities and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the group's or the parent company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) we identified, including those which had the greatest effect on the overall audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Impairment of intangible assets

(Refer to pages 38 and 39 regarding the accounting policy in respect of intangible assets, page 36 in respect of critical judgements and estimates applied by the Directors and note 11 to the financial statements on pages 48 and 49.)

The risk

No amortisation was provided against the intellectual property as whilst they were deemed to be separately identifiable under IFRS 3 Business Combinations, they are not yet generating economic benefit. Due to the regulatory and other uncertainties inherent in the development and the success of the Group's programmes there is a risk that if programme scales are not achieved an impairment may need to be required.

Our response

We have challenged management's workings and calculation by reference to the underlying valuation models and assumptions. We have assessed whether the models used in the prior year are still appropriate and have assessed the sensitivity analysis to consider whether there is appropriate headroom.

We highlight that management have used the base case valuation outcome in respect of the valuation models in each assessment which is considered to be prudent and appropriate given the stage of the programme lifecycles. We have assessed the adequacy of the financial statement disclosures.

Independent Auditor's Report continued

To the members of 4D pharma plc

Carrying value of intra-group balances

(Refer to page 40 regarding the accounting policy in respect of investments, page 40 regarding the accounting policy in respect of financial assets and note 12 to the financial statements on pages 50 and 51.)

The risk

The Company has material receivables from subsidiary undertakings that are currently loss making. As a consequence, there is a significant risk that these are impaired and need to be written down. At the 31 December 2017, the carrying value of amounts due from group undertakings amounted to £33,159k (2016: £24,114k) in the Company Statement of Financial Position.

Our response

As part of our procedures we obtained management's impairment review and underlying calculations and challenged the assumptions used therein before concluding whether or not there are any indicators of impairment against the carrying value of amounts due from group undertakings.

We reviewed forecasts and considered whether they were consistent with the forecasts prepared by management in relation to going concern. We challenged management and obtained explanations as to how future income estimates were calculated assessing whether they were reasonable and corroborated to supporting evidence.

Our application of materiality

When establishing our overall audit strategy, we set certain thresholds which help us to determine the nature, timing and extent of our audit procedures and to evaluate the effects of misstatements, both individually and on the financial statements as a whole.

During planning we determined a magnitude of uncorrected misstatements that we judge would be material for the financial statements as a whole (FSM). During planning FSM was calculated as £1,124,500, which was not changed during the course of our audit. We agreed with the Audit Committee that we would report to them all unadjusted differences in excess of £10,000 as well as differences below those thresholds that, in our view, warranted reporting on qualitative grounds.

An overview of the scope of our audit

As part of our planning we assessed the risk of material misstatement including those that required significant auditor consideration at the component and group level. Procedures were then performed to address the risk identified and for the most significant assessed risks of material misstatement, the procedures performed are outlined above in the key audit matters section of this report.

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic Report and the Directors' Report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the group and the parent company and their environment obtained in the course of the audit, we have not identified material misstatements in the Strategic Report or the Directors' Report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or

- the parent company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of directors

As explained more fully in the directors' responsibilities statement set out on page 24, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the parent company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: http://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Graham Bond FCA
(Senior Statutory Auditor)
For and on behalf of
RSM UK AUDIT LLP,
Statutory Auditor
Chartered Accountants
3 Hardman Street
Manchester
M3 3HF
20 April 2018

Group Statement of Total Comprehensive Income

For the year ended 31 December 2017

	Notes	**Year to 31 December 2017 £000**	Year to 31 December 2016 £000
Research and development costs	4	**(16,911)**	(10,220)
Administrative expenses	4	**(3,529)**	(2,866)
Foreign currency (losses)/gains	4	**(431)**	799
Operating loss before non-recurring costs		**(20,871)**	(12,287)
Non-recurring costs	5	**(3,474)**	—
Operating loss after non-recurring costs		**(24,345)**	(12,287)
Finance income	7	**482**	652
Finance expense	7	**(123)**	(71)
Loss before taxation		**(23,986)**	(11,706)
Taxation	8	**3,541**	1,843
Loss for the year		**(20,445)**	(9,863)
Other comprehensive income:			
Exchange differences on translating foreign operations		**1,057**	(389)
Loss for the year and total comprehensive income for the year		**(19,388)**	(10,252)
Loss per share			
Basic and diluted for the year	9	**(31.41)p**	(15.21)p

The basic and diluted loss per share are the same as the effect of share options is anti-dilutive.

The notes on pages 35 to 61 form an integral part of these financial statements.

Group Statement of Financial Position

At 31 December 2017

Registered no. 08840579

	Notes	At 31 December 2017 £000	At 31 December 2016 £000
Assets			
Non-current assets			
Property, plant and equipment	10	**5,211**	3,859
Intangible assets	11	**14,674**	14,299
Taxation receivables	15	**56**	23
		19,941	18,181
Current assets			
Inventories	13	**253**	238
Trade and other receivables	14	**3,238**	2,651
Taxation receivables	15	**4,308**	3,315
Short-term investments and cash on deposit	16	**38,133**	40,111
Cash and cash equivalents	16	**11,865**	28,661
		57,797	74,976
Total assets		**77,738**	93,157
Liabilities			
Current liabilities			
Trade and other payables	17	**4,982**	4,937
		4,982	4,937
Non-current liabilities			
Deferred tax	18	**965**	963
Other payables	19	**2,005**	774
		2,970	1,737
Total liabilities		**7,952**	6,674
Net assets		**69,786**	86,483
Capital and reserves			
Share capital	20	**164**	162
Share premium account	20	**108,296**	105,909
Merger reserve		**958**	958
Translation reserve		**668**	(389)
Other reserve		**(864)**	(864)
Share-based payments reserve	21	**440**	138
Retained earnings		**(39,876)**	(19,431)
Total equity		**69,786**	86,483

Approved by the Board and authorised for issue on 20 April 2018.

The notes on pages 35 to 61 form an integral part of these financial statements.

Duncan Peyton
Director
20 April 2018

Company Statement of Financial Position

At 31 December 2017

Registered no. 08840579

	Notes	At 31 December 2017 £000	At 31 December 2016 £000
Assets			
Non-current assets			
Property, plant and equipment	10	**576**	256
Intangible assets	11	**849**	889
Investment in subsidiaries	12	**11,671**	6,128
		13,096	7,273
Current assets			
Loans to subsidiaries	12	**33,159**	24,114
Trade and other receivables	14	**428**	350
Taxation receivables	15	**478**	455
Short-term investments and cash on deposit	16	**38,133**	40,111
Cash and cash equivalents	16	**11,060**	27,778
		83,258	92,808
Total assets		**96,354**	100,081
Liabilities			
Current liabilities			
Trade and other payables	17	**1,345**	1,018
		1,345	1,018
Non-current liabilities			
Other payables	19	**1,979**	774
		1,979	774
Total liabilities		**3,324**	1,792
Net assets		**93,030**	98,289
Capital and reserves			
Share capital	20	**164**	162
Share premium account	20	**108,296**	105,909
Merger reserve		**958**	958
Share-based payments reserve	21	**440**	138
Retained earnings		**(16,828)**	(8,878)
Total equity		**93,030**	98,289

The Company has elected to take the exemptions under section 408 of the Companies Act 2006 not to present the parent company's Statement of Comprehensive Income. The Company's loss for the year was £7.950 million (31 December 2016: £3.489 million).

Approved by the Board and authorised for issue on 20 April 2018.

The notes on pages 35 to 61 form an integral part of these financial statements.

Duncan Peyton
Director
20 April 2018

Group Statement of Changes in Equity

For the year ended 31 December 2017

	Share capital £000	Share premium £000	Merger reserve £000	Translation reserve £000	Other reserve £000	Share-based payment reserve £000	Retained earnings £000	Total equity £000
At 1 January 2016	**161**	**102,003**	**958**	**—**	**(864)**	**7**	**(9,568)**	**92,697**
Issue of share capital (net of expenses)	1	3,906	—	—	—	—	—	3,907
Total transactions with owners recognised in equity for the year	**1**	**3,906**	**—**	**—**	**—**	**—**	**—**	**3,907**
Loss and total comprehensive income for the year	—	—	—	—	—	—	(9,863)	(9,863)
Foreign currency losses arising on consolidation of subsidiaries	—	—	—	(389)	—	—	—	(389)
Issue of share-based compensation	—	—	—	—	—	131	—	131
At 31 December 2016	**162**	**105,909**	**958**	**(389)**	**(864)**	**138**	**(19,431)**	**86,483**
Issue of share capital (net of expenses)	2	2,387	—	—	—	—	—	2,389
Total transactions with owners recognised in equity for the year	**2**	**2,387**	**—**	**—**	**—**	**—**	**—**	**2,389**
Loss and total comprehensive income for the year	—	—	—	—	—	—	(20,445)	(20,445)
Foreign currency gains arising on consolidation of subsidiaries	—	—	—	1,057	—	—	—	1,057
Issue of share-based compensation	—	—	—	—	—	302	—	302
At 31 December 2017	**164**	**108,296**	**958**	**668**	**(864)**	**440**	**(39,876)**	**69,786**

Details regarding the purpose of each reserve within equity are given in note 22.

Company Statement of Changes in Equity

For the year ended 31 December 2017

	Share capital £000	Share premium £000	Merger reserve £000	Share-based payment reserve £000	Retained earnings £000	Total £000
At 1 January 2016	**161**	**102,003**	**958**	**7**	**(5,389)**	**97,740**
Issue of share capital (net of expenses)	1	3,906	—	—	—	3,907
Total transactions with owners recognised in equity for the year	**1**	**3,906**	**—**	**—**	**—**	**3,907**
Loss and total comprehensive income for the year	—	—	—	—	(3,489)	(3,489)
Issue of share-based compensation	—	—	—	131	—	131
At 31 December 2016	**162**	**105,909**	**958**	**138**	**(8,878)**	**98,289**
Issue of share capital (net of expenses)	2	2,387	—	—	—	2,389
Total transactions with owners recognised in equity for the year	**2**	**2,387**	**—**	**—**	**—**	**2,389**
Loss and total comprehensive income for the year	—	—	—	—	(7,950)	(7,950)
Issue of share-based compensation	—	—	—	302	—	302
At 31 December 2017	**164**	**108,296**	**958**	**440**	**(16,828)**	**93,030**

Details regarding the purpose of each reserve within equity are given in note 22.

Group Cash Flow Statement

For the year ended 31 December 2017

	Notes	**Year to 31 December 2017 £000**	Year to 31 December 2016 £000
Loss after taxation		**(20,445)**	(9,863)
Adjustments for:			
Depreciation of property, plant and equipment	10	**730**	405
Amortisation of intangible assets	11	**252**	213
Loss/(profit) on disposal of property, plant and equipment		**79**	(2)
Finance income	7	**(482)**	(652)
Finance expense	7	**123**	71
Contingent consideration	5	**3,474**	—
Share-based compensation	21	**302**	131
Cash flows from operations before movements in working capital		**(15,967)**	(9,697)
Changes in working capital:			
Increase in inventories		**(15)**	(210)
Increase in trade and other receivables		**(588)**	(762)
Increase in taxation receivables		**(1,009)**	(715)
Increase/(decrease) in trade and other payables		**389**	(2,142)
Cash outflow from operating activities		**(17,190)**	(13,526)
Cash flows from investing activities			
Purchases of property, plant and equipment		**(1,885)**	(2,243)
Purchase of software and other intangibles	11	**(194)**	(76)
Acquisition of subsidiaries net of cash acquired		**—**	(1,615)
Cash received on disposal of assets		**—**	15
Interest received		**509**	776
Monies drawn from deposit		**1,978**	43,553
Net cash inflow from investing activities		**408**	40,410
Cash flows from financing activities			
Hire purchase payments		**(14)**	—
Net cash outflow from financing activities		**(14)**	—
(Decrease)/increase in cash and cash equivalents		**(16,796)**	26,884
Cash and cash equivalents at the start of the year		**28,661**	1,777
Cash and cash equivalents at the end of the year	16	**11,865**	28,661

Company Cash Flow Statement

For the year ended 31 December 2017

	Notes	**Year to 31 December 2017 £000**	Year to 31 December 2016 £000
Loss after taxation		**(7,950)**	(3,489)
Adjustments for:			
Depreciation of property, plant and equipment	10	**95**	63
Amortisation of intangible assets	11	**221**	201
Loss on disposal of property, plant and equipment		**79**	—
Finance income		**(481)**	(652)
Finance expense		**120**	71
Contingent consideration	5	**3,474**	—
Share-based compensation		**131**	131
Cash flows from operations before movements in working capital		**(4,311)**	(3,675)
Changes in working capital:			
(Increase)/decrease in trade and other receivables		**(83)**	1,466
(Increase)/decrease in taxation receivables		**(23)**	81
Increase/(decrease) in trade and other payables		**303**	(1,750)
Cash outflow from operating activities		**(4,114)**	(3,878)
Cash flows from investing activities			
Purchases of property, plant and equipment	10	**(493)**	(104)
Purchase of software and other intangibles	11	**(182)**	(14)
Investment in share capital in subsidiary*		**—**	(2)
Loans to subsidiary undertakings	12	**(14,416)**	(14,237)
Interest received		**509**	776
Monies placed on deposit		**1,978**	43,553
Net cash (outflow)/inflow from investing activities		**(12,604)**	29,972
(Decrease)/increase in cash and cash equivalents		**(16,718)**	26,094
Cash and cash equivalents at the start of the year		**27,778**	1,684
Cash and cash equivalents at the end of the year	16	**11,060**	27,778

* During the year 4D pharma plc converted £5.372 million of loans to subsidiary undertakings into investments in 4D Pharma Leon, S.L.U., a subsidiary undertaking. Since this represented the conversion of existing loans, no further cash was transferred and so is not noted in the Cash Flow Statement above. Further details on the transaction can be found in note 12.

Notes to the Financial Statements

For the year ended 31 December 2017

1. General information

4D pharma plc (the "Company") is an AIM-quoted company incorporated and domiciled in the UK. The locations and principal activities of the subsidiaries are set out in note 12. The Company is incorporated in England and Wales. The registered office is 9 Bond Court, Leeds LS1 2JZ. These Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the "Group" and individually as "Group entities") for the year ended 31 December 2017.

The principal activities of the Group are the research and development of Live Biotherapeutic drug products.

The financial statements of 4D pharma plc and its subsidiaries (the "Group") for the year ended 31 December 2017 were authorised for issue by the Board of Directors on 20 April 2018 and the Statement of Financial Position was signed on the Board's behalf by Duncan Peyton.

The significant accounting policies adopted by the Group are set out in note 3.

2. Basis of preparation

(a) Statement of compliance

The Group's financial statements have been prepared in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS") and IFRS Interpretations Committee ("IFRSIC") interpretations as they apply to the financial statements of the Group for the year ended 31 December 2017 and the requirements of the Companies Act 2006 applicable to companies reporting under IFRS.

(b) Basis of measurement

The parent company and Group financial statements have been prepared on the historical cost basis except for the methods used to measure fair values of assets and liabilities, which are discussed in the respective notes and in note 3.

(c) Going concern

The Chief Executive Officer's Report on pages 5 to 7 outlines the business activities of the Group along with the factors which may affect its future development and performance. The Group's financial position is discussed in the Financial Review on pages 6 and 7 along with details of its cash flow and liquidity. Note 24 to the financial statements sets out the Group's financial risks and the management of those risks.

Having prepared management forecasts and made appropriate enquiries, the Directors are satisfied that the Group has adequate resources for the foreseeable future. Accordingly they have continued to adopt the going concern basis in preparing the Group and Company financial statements.

(d) Functional and presentational currency

These financial statements are presented in Pounds Sterling, which is the Group's functional currency. All financial information presented has been rounded to the nearest thousand.

(e) Use of estimates and judgements

The preparation of financial statements requires management to make estimates and judgements that affect the amounts reported for assets and liabilities as at the reporting date and the amounts reported for revenues and expenses during the year. The nature of estimation means that actual amounts could differ from those estimates. Estimates and judgements used in the preparation of the financial statements are continually reviewed and revised as necessary. While every effort is made to ensure that such estimates and judgements are reasonable, by their nature they are uncertain and, as such, changes in estimates and judgements may have a material impact on the financial statements.

The key sources of estimation uncertainty and critical accounting policies that have a significant risk of causing material adjustment to the carrying amount of assets and liabilities within the next financial year are discussed below.

(i) Taxation

Management judgement is required to determine the amount of tax assets that can be recognised, based upon the likely timing and level of future taxable profits together with an assessment of the effect of future tax-planning strategies. The value of the unrecognised tax losses for the Group at 31 December 2017 was £32.691 million. The value of the additional deferred tax asset not recognised at the year end is £5.645 million. Further information is included in note 8.

(ii) Research and development

Careful judgement by the Directors is applied when deciding whether the recognition requirements for development costs have been met. This is necessary as the economic success of any product development is uncertain until such time as technical viability has been proven and commercial supply agreements are likely to be achieved. Judgements are based on the information available at each reporting date which includes the progress with testing and certification and progress on, for example, establishment of commercial arrangements with third parties. In addition, all internal activities related to research and development of new products are continuously monitored by the Directors. Further information is included in note 3.

Notes to the Financial Statements continued

For the year ended 31 December 2017

2. Basis of preparation continued

(e) Use of estimates and judgements continued

(iii) Intangible fixed assets and goodwill

Estimated impairment of intangible fixed assets and goodwill

The Group tests annually whether intangible fixed assets and goodwill have suffered any impairment, in accordance with the accounting policy stated in note 3. The potential recoverable amounts of intangible fixed assets and goodwill have been determined based on value-in-use calculations. These calculations require the use of estimates both in arriving at the expected future cash flows and the application of a suitable discount rate in order to calculate the present value of these flows. There is a degree of judgement involved in making assessments of attributable values on acquisition and making impairment assessments. More detail is given in notes 3(h) and 3(i).

Valuation of intangibles on acquisition

Valuation of an early stage drug discovery pharmaceutical company is a notoriously difficult task. Analysis of financial history gives little indication of future performance. Despite this, for products currently in development, sales potentials can be estimated and management has used its own experience as well as consulting with external experts to establish best estimates of sales pricing and revenue forecasting and these can provide the starting point for valuing these products and ensuring that their value has not been impaired. In addition, clinical development risks, measured as product attrition failure rates, incurred as drugs progress through the clinic are reasonably well documented and can be applied as meaningful risk adjusters to account for the chance of development failure.

3. Significant accounting policies

The accounting policies set out below are applied consistently by Group entities.

(a) Basis of consolidation

(i) Business combinations

Business combinations are accounted for using the acquisition method as at the acquisition date – i.e. when control is transferred to the Group. Control is the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. In assessing control, the Group takes into consideration potential voting rights that are currently exercisable. The Group measures goodwill at the acquisition date as:

- the fair value of the consideration transferred; plus
- the recognised amount of any non-controlling interests in the acquiree; plus
- if the business combination is achieved in stages, the fair value of the pre-existing equity interest in the acquiree; less
- the net recognised amount (generally fair value) of the identifiable assets acquired and liabilities assumed.

Transaction costs, other than those associated with the issue of debt or equity securities, that the Group incurs in connection with a business combination are expensed as incurred.

(ii) Subsidiaries

Subsidiaries are entities controlled by the Group. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

3. Significant accounting policies continued

(a) Basis of consolidation continued

(iii) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. Unrealised gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment.

(b) Foreign currency transactions

Transactions in foreign currencies are initially recorded in the functional currency by applying the spot rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency rate of exchange ruling at the reporting date. All foreign currency transaction differences are recognised in the Income Statement.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the date of the transaction. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. These values are retranslated at the year-end rates with the movement between the original cost and retranslated cost being included in other comprehensive income and the translation reserve.

(c) Segmental reporting

An operating segment is a component of an entity that engages in business activities from which it may earn revenues and incur expenses, whose operating results are regularly reviewed by the Group's chief operating decision maker, being the Chief Executive Officer, to make decisions about resources to be allocated to the segment and assess its performance, and for which discrete financial information is available. As at the reporting date the Group operated as a single segment.

(d) Lease payments

Leases are classified as finance leases wherever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases which are expensed directly to the Income Statement.

Assets held under hire purchase agreements and finance leases are recognised as assets of the Group at their fair value or, if lower, at the present value of the minimum lease payments, each determined at the inception of the lease. The corresponding liability is included in the Group Statement of Financial Position as a hire purchase obligation. Lease payments are apportioned between finance charges and a reduction of the lease obligations so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged to the Group Income Statement. Rentals payable under operating leases are charged to the Group Income Statement on a straight-line basis over the term of the lease.

(e) Finance income and finance expense

Finance income comprises interest income on funds invested and changes in the fair value of financial assets at fair value through profit or loss. Interest income is recognised as interest accrues using the effective interest rate method.

Finance expense comprises interest expense on borrowings, changes in the fair value of financial assets at fair value through the Group Statement of Comprehensive Income, impairment losses recognised on financial assets and losses on hedging instruments that are recognised in profit or loss. All borrowing costs are recognised using the effective interest method.

Notes to the Financial Statements continued

For the year ended 31 December 2017

3. Significant accounting policies continued

(f) Income tax

Income tax expense comprises current and deferred tax. Income tax expense is recognised in the Income Statement except to the extent that it relates to items recognised directly in equity or in other comprehensive income.

Current income tax assets and liabilities for the current and prior years are measured at the amount expected to be recovered from, or paid to, the tax authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the reporting date.

Deferred income tax is recognised on all temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements with the following exceptions:

- where the temporary difference arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and that at the time of the transaction affects neither accounting nor taxable profit or loss; and
- in respect of taxable temporary differences associated with investments in subsidiaries where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred income tax assets and liabilities are measured on an undiscounted basis using the tax rates and tax laws that have been enacted or substantively enacted by the date and which are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred income tax assets are recognised to the extent that it is probable that future taxable profits will be available against which differences can be utilised. An asset is not recognised to the extent that the transfer or economic benefits in the future is uncertain.

(g) Property, plant and equipment

Property, plant and equipment are recognised initially at cost. After initial recognition, these assets are carried at cost less any accumulated depreciation and any accumulated impairment losses. Cost comprises the aggregate amount paid and the fair value of any other consideration given to acquire the asset and includes costs directly attributable to making the asset capable of operating as intended.

Depreciation is computed by allocating the depreciable amount of an asset on a systematic basis over its useful life and is applied separately to each identifiable component.

The following bases and rates are used to depreciate classes of assets:

Plant and machinery	– straight-line over five to ten years
Fixtures, fittings and office equipment	– straight-line over three to five years
Leasehold improvements	– straight-line over five to ten years

The carrying values of property, plant and equipment are reviewed for impairment if events or changes in circumstances indicate that the carrying value may not be recoverable, and are written down immediately to their recoverable amount. Useful lives and residual values are reviewed annually and where adjustments are required these are made prospectively.

A property, plant and equipment item is derecognised on disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the derecognition of the asset is included in the Income Statement in the year of derecognition.

(h) Intangible assets

Intellectual property and patents

The carrying value of intangible fixed assets is reviewed annually for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable.

At each reporting date the Group reviews the carrying value of its intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss.

Where the asset does not generate cash flows that are independent from other assets, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs. A cash-generating unit is the smallest identifiable group of assets that generates cash inflows from other assets or groups of assets.

F

3. Significant accounting policies continued

(h) Intangible assets continued

Intellectual property and patents continued

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset, for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognised as an expense immediately.

Where an impairment loss subsequently reverses, the carrying amount of the assets is increased to the revised climate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior years. A reversal of an impairment loss is recognised in profit or loss immediately.

Amortisation is provided on the fair value of the asset and is calculated on a straight-line basis over its useful life. Amortisation is recognised within the Statement of Comprehensive Income. Intellectual property and patents acquired as part of a business combination are only amortised once technical viability has been proven and commercial agreements are likely to be achieved.

Patents includes the costs associated with acquiring and registering patents in respect of intellectual property rights. Patents are amortised on a straight-line basis over their useful lives of up to 20 years from the date of filing the patent.

Goodwill

Goodwill on acquisitions, being the excess of the fair value of the cost of acquisition over the Group's interest in the fair value of the identifiable assets and liabilities acquired, is capitalised and tested for impairment on an annual basis.

Any impairment is recognised immediately in profit or loss and is not subsequently reversed. For the purpose of impairment testing goodwill is allocated to cash-generating units of 4D pharma plc, which represent the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

Software

Software is recognised initially at cost. After initial recognition, these assets are carried at cost less any accumulated amortisation and any accumulated impairment losses. Cost comprises the aggregate amount paid and the fair value of any other consideration given to acquire the asset and includes costs directly attributable to making the asset capable of operating as intended.

Amortisation is computed by allocating the amortisation amount of an asset on a systematic basis over its useful life and is applied separately to each identifiable component. Amortisation is applied to software over three to five years on a straight-line basis.

The carrying value of software is reviewed for impairment if events or changes in circumstances indicate that the carrying value may not be recoverable, and is written down immediately to their recoverable amount. Useful lives and residual values are reviewed annually and where adjustments are required these are made prospectively.

A software item is derecognised on disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on the derecognition of the asset is included in the Income Statement in the year of derecognition.

Internally generated intangible assets

Expenditure on research activities is recognised in the Statement of Comprehensive Income as incurred. Expenditure arising from the Group's development is recognised only if all of the following conditions are met:

- an asset is created that can be identified;
- it is probable that the asset created will generate future economic benefits;
- the development cost of the asset can be measured reliably;
- the Group has the intention to complete the asset and the ability and intention to use or sell it;
- the product or process is technically and commercially feasible; and
- sufficient resources are available to complete the development and to either sell or use the asset.

Where these criteria have not been achieved, development expenditure is recognised in profit or loss in the year in which it is incurred.

The Group has adopted the industry standard approach to the treatment of development expenditure by capitalising development costs at the point where regulatory approval is reached and the probability of generating future economic benefits is high.

Notes to the Financial Statements continued

For the year ended 31 December 2017

3. Significant accounting policies continued

(i) Impairment of assets

An asset's recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying value of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs of disposal, an appropriate valuation model is used; these calculations are corroborated by valuation multiples, or other available fair value indicators. Impairment losses on continuing operations are recognised in the Income Statement in those expense categories consistent with the function of the impaired asset.

(j) Investments in subsidiaries

Investments in and loans to subsidiaries are stated in the Company's Statement of Financial Position at cost less provision for any impairment plus the cost of any share options issued to employees of subsidiary companies. See note 3(o) for further details.

(k) Inventories

Inventories are stated at the lower of cost and net realisable value. Cost based on latest contractual prices includes all costs incurred in bringing each product to its present location and condition. Net realisable value is based on estimated selling price less any further costs expected to be incurred to disposal. Provision is made for slow-moving or obsolete items.

(l) Cash, cash equivalents and short-term investments

Cash and cash equivalents comprise cash at hand and deposits with maturities of three months or less. Short-term investments comprise deposits with maturities of more than three months, but no greater than twelve months.

(m) Trade and other payables

Trade and other payables are non-interest bearing and are initially recognised at fair value. They are subsequently measured at amortised cost using the effective interest rate method.

(n) Financial assets and liabilities

Financial assets and liabilities are recognised when the Group becomes party to the contracts that give rise to them and are classified as financial assets and liabilities at fair value through the Group Statement of Comprehensive Income. The Group determines the classification of its financial assets and liabilities at initial recognition and re-evaluates this designation at each financial year end.

A financial asset or liability is generally derecognised when the contract that gives rise to it is settled, sold or cancelled or expires.

At the year end, the Group had no financial assets or liabilities designated at fair value through the Group Statement of Comprehensive Income.

(o) Share-based payments

Equity-settled share-based payment transactions are measured with reference to the fair value at the date of grant, recognised on a straight-line basis over the vesting period, based on the Company's estimate of shares that will eventually vest. Fair value is measured using a suitable option pricing model.

At each reporting date before vesting, the cumulative expense is calculated, representing the extent to which the vesting period has expired and management's best estimate of the achievement or otherwise of non-market conditions and the number of equity instruments that will ultimately vest. The movement in cumulative expense since the previous reporting date is recognised in the Group Statement of Comprehensive Income, with a corresponding entry in equity.

Where the terms of an equity-settled award are modified or a new award is designated as replacing a cancelled or settled award, the cost based on the original award terms continues to be recognised over the remainder of the original vesting period. In addition, an expense is recognised over the remainder of the new vesting period for the incremental fair value of any modification, based on the difference between the fair value of the original award and the fair value of the modified award, both as measured on the date of modification. No reduction is recognised if this difference is negative.

Where awards are granted to the employees of the subsidiary company, the fair value of the awards at grant date is recorded in the Company's financial statements as an increase in the value of the investment with a corresponding increase in equity via the share-based payment reserve.

3. Significant accounting policies continued

(p) Share capital

Proceeds on issue of shares are included in shareholders' equity, net of transaction costs. The carrying amount is not remeasured in subsequent years.

(q) New accounting standards and interpretations

Adoption of IFRS

The Group and Company financial statements have been prepared in accordance with IFRS, IAS and IFRS Interpretations Committee ("IFRSIC") effective as at 31 December 2017. The Group and Company have not chosen to adopt any amendments or revised standards early.

IFRS issued but not yet effective

At the date of issue of these financial statements, the following accounting standards and interpretations, which have not been applied, were in issue but not yet effective. The potential effects for the implementation of IFRS 16 are currently under consideration as they are expected to be significant. However, for the remaining standards listed below, the Directors do not anticipate adoption will have a material impact on the financial statements or they consider the implementation too uncertain to speculate on the impact on the accounts at this point in time.

IFRS 9	Financial Instruments	Effective 1 January 2018
IFRS 15	Revenue from Contracts with Customers	Effective 1 January 2018
IFRS 17	Insurance Contracts	Effective 1 January 2021
IFRIC 22	Foreign Currency Transactions and Advance Consideration	Effective 1 January 2018
IFRIC 23	Uncertainty over Income Tax Treatments	Effective 1 January 2019
Various standards	Annual Improvements to IFRSs 2015–2017 Cycle	Various
Amendments to IAS 40	Transfers of Investment Property	Effective 1 January 2018
Amendments to IAS 28	Long-term Interests in Associates and Joint Ventures	Effective 1 January 2019
Amendments to IFRS 9	Prepayment Features with Negative Compensation	Effective 1 January 2019
Amendments to IFRS 4	Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts	Effective 1 January 2018
Amendments to IFRS 2	Classification and Measurement of Share-based Payment Transactions	Effective 1 January 2018

IFRS 16 Leases

IFRS 16 introduces a comprehensive model for the identification of lease arrangements and accounting treatments for both lessors and lessees. IFRS 16 will supersede the current guidance including IAS 17 Leases and the related interpretations when it becomes effective.

IFRS 16 distinguishes leases and service contracts on the basis of whether an identifiable asset is controlled by a customer. Distinctions of operating leases (off Statement of Financial Position) and finance leases (on Statement of Financial Position) are removed for lessee accounting, and are replaced by a model where a right-of-use asset and corresponding liability have to be recognised for all leases by lessees (i.e. all on Statement of Financial Position) except for short-term leases and leases of low value assets.

The right-of-use asset is initially measured at cost and subsequently measured at cost (subject to certain exceptions) less accumulated depreciation and impairment losses, adjusted for any measurement of the lease liability. The lease liability is initially measured at the present value of the lease payments that are not paid at that date. Subsequently, the lease liability is adjusted for interest and lease payments, as well as the impact of lease modifications, amongst others. Furthermore, the classification of cash flows will also be affected as operating lease payments under IAS 17 are presented as operating cash flows, whereas under the IFRS 16 model, the lease payments will be split into a principal and interest portion which will be presented as financing and operating cash flows respectively.

In contrast, for finance leases where the Group is a lessee, as the Group has already recognised an asset and a related finance lease liability for the lease arrangement, the Directors of the Company do not anticipate that the application of IFRS 16 will have a significant impact on the amounts recognised in the Group's consolidated financial statements.

The Directors are currently assessing the impact of IFRS 16 as the changes are likely to have a significant impact on the financial results.

Notes to the Financial Statements continued

For the year ended 31 December 2017

4. Operating loss

By nature:	**Year to 31 December 2017 £000**	Year to 31 December 2016 £000
Operating loss is stated after charging:		
Research and development expense		
Depreciation of property, plant and equipment	**686**	349
Amortisation of intangible assets	**229**	213
Staff costs (see note 6)	**3,335**	1,604
Operating lease rentals:		
– Land and buildings	**118**	457
– Equipment	**37**	2
– Other contractual commitments	**1,916**	1,837
Other research and development costs	**10,590**	5,758
	16,911	10,220
Administrative expenses		
Depreciation of property, plant and equipment	**44**	34
Amortisation of intangible assets	**23**	22
Loss/(profit) on disposal of property, plant and equipment	**79**	(2)
Staff costs (see note 6)	**1,141**	840
Operating lease rentals:		
– Land and buildings	**113**	44
– Equipment	**1**	—
Auditor's remuneration	**49**	56
Legal and professional	**253**	838
Consultancy	**5**	202
Other administrative costs	**1,821**	832
	3,529	2,866
Foreign currency losses/(gains)	**431**	(799)
Auditor's remuneration:		
Audit services:		
– Fees payable to Company auditor for the audit of the parent and the consolidated accounts	**35**	38
– Auditing the financial statements of subsidiaries pursuant to legislation	**10**	10
– Non-audit services	**4**	8
Total auditor's remuneration	**49**	56

5. Non-recurring costs

As detailed in other payables (see note 19) on 23 August 2017 contingent consideration became due following the achievement of 4D Pharma Cork Ltd's initial milestone.

The contingent liability was initially calculated upon the acquisition based on the discounted probability of the potential liability at the time of acquisition. With the successful completion of the first milestone the management has had to reassess the probability of success of subsequent milestones and therefore increase the contingent liability. This has resulted in the non-recurring cost in the year to 31 December 2017 of £3.474 million (31 December 2016: £Nil).

6. Staff costs

	Year to 31 December 2017			Year to 31 December 2016		
	Research and development £000	**Administrative £000**	**Total £000**	Research and development £000	Administrative £000	Total £000
Wages and salaries	**2,597**	**868**	**3,465**	1,371	621	1,992
Social security costs	**528**	**104**	**632**	201	74	275
Pension contributions	**51**	**26**	**77**	32	14	46
Share-based compensation	**159**	**143**	**302**	—	131	131
	3,335	**1,141**	**4,476**	1,604	840	2,444
Directors' remuneration (including benefits in kind) included in the aggregate remuneration above comprised:						
Emoluments for qualifying services	**—**	**252**	**252**	—	252	252

Directors' emoluments (excluding social security costs, but including benefits in kind) disclosed above include £101,323 (31 December 2016: £101,238) paid to the highest paid Director.

The Directors were not granted any share options in the year ended 31 December 2017 or the year ended 31 December 2016 and none of the Directors held any share options at 31 December 2017.

An analysis of the highest paid Director's remuneration is included in the Report of the Remuneration Committee.

The average number of employees during the year (including Directors) was as follows:

Group	**Year to 31 December 2017 Number**	Year to 31 December 2016 Number
Directors	**4**	4
Scientific and administrative staff	**89**	53
	93	57

Company	**Year to 31 December 2017 Number**	Year to 31 December 2016 Number
Directors	**4**	4
Scientific and administrative staff	**17**	6
	21	10

7. Finance income and finance expense

	Year to 31 December 2017 £000	Year to 31 December 2016 £000
Finance income		
Bank interest receivable	**482**	652
Finance expense		
Hire purchase interest	**(2)**	—
Unwinding of discount	**(120)**	(71)
Other interest payable	**(1)**	—
	(123)	(71)
	359	581

Bank interest receivable includes £128,926 (31 December 2016: £156,681) which is receivable after the year end.

Notes to the Financial Statements continued

For the year ended 31 December 2017

8. Taxation

The tax credit is made up as follows:

	Year to 31 December 2017 £000	Year to 31 December 2016 £000
Current income tax		
Total current income tax	**(3,557)**	(1,843)
Adjustment in respect of prior years	**16**	—
Current deferred tax		
Current year charge	**—**	—
Total deferred tax	**—**	—
Total income tax credit recognised in the year	**(3,541)**	(1,843)

The income tax credit can be reconciled to the accounting loss as follows:

	Year to 31 December 2017 £000	Year to 31 December 2016 £000
Loss before taxation	**(23,986)**	(11,706)
Tax at the average standard rate of 18.95% (31 December 2016: 20.1%)	**(4,544)**	(2,356)
Effects of:		
Expenses not deductible for tax purposes	**714**	56
Adjustments to foreign currency translations on subsidiaries	**—**	8
Enhanced research and development expenditure	**(2,561)**	(1,410)
Property, plant, equipment and software timing differences	**6**	20
Deferred tax not provided on losses	**1,853**	1,154
Adjustment in respect of prior years	**17**	—
Effects of variation on tax reclaims over the standard rate	**974**	685
Tax income tax credit recognised in the year	**(3,541)**	(1,843)

The tax rate for the current year is lower than the prior year, due to changes in the UK corporation tax rate from 20% to 19% from 1 April 2017. Further reductions to the UK corporation tax rates were substantively enacted as part of the Finance Bill 2016 on 6 September 2016. These reduce the main rate to 17% from 1 April 2020 with the revised rate forming the basis for the UK portion of the deferred tax calculation noted below.

At 31 December 2017, the Group had tax losses available for carry forward of approximately £32.691 million (31 December 2016: £12.262 million). The Group has not recognised deferred tax assets relating to such earned forward losses of approximately £5.645 million (31 December 2016: £2.452 million).

At 31 December 2017, the Company had tax losses available for carry forward of approximately £7.827 million (31 December 2016: £2.974 million). The Company has not recognised deferred tax assets relating to such earned forward losses of approximately £1.331 million (31 December 2016: £0.595 million).

Group's management considers that there is insufficient evidence of future taxable income, taxable temporary differences and feasible tax-planning strategies to utilise all of the cumulative losses. If future income differs from current projections, this could significantly impact the tax charge or benefit in future years.

The management has therefore concluded that a deferred tax asset should not be recognised until such point that the probability of its realisation becomes more certain.

9. Loss per share

(a) Basic and diluted

	Year to 31 December 2017 £000	Year to 31 December 2016 £000
Loss for the year attributable to equity shareholders	**(20,445)**	(9,863)
Weighted average number of shares:		
Ordinary shares in issue	**65,084,561**	64,858,150
Basic loss per share	**(31.41)p**	(15.21)p

The basic and diluted loss per share are the same as the effect of share options is anti-dilutive.

(b) Adjusted

Adjusted loss per share is calculated after adjusting for the effect of non-recurring expenses in relation to the reassessment of the contingent liability.

Reconciliation of adjusted loss after tax:

	Year to 31 December 2017 £000	Year to 31 December 2016 £000
Reported loss after tax	**(20,445)**	(9,863)
Non-recurring costs	**3,474**	—
Adjusted loss after tax	**(16,971)**	(9,863)
Adjusted basic loss per share	**(26.08)p**	(15.21)p

Notes to the Financial Statements continued

For the year ended 31 December 2017

10. Property, plant and equipment

Group	Plant and machinery £000	Fixtures, fittings and office equipment £000	Leasehold improvements £000	Total £000
Cost				
At 31 December 2015	**1,124**	**94**	**104**	**1,322**
Additions	1,894	88	261	2,243
Additions on business combinations	625	—	334	959
Disposals	(15)	—	—	(15)
Exchange rate adjustment	(44)	(2)	(16)	(62)
At 31 December 2016	**3,584**	**180**	**683**	**4,447**
Additions	1,381	102	446	1,929
Disposals	—	(1)	(111)	(112)
Reclassifications	24	(73)	—	(49)
Exchange rate adjustment	257	1	61	319
At 31 December 2017	**5,246**	**209**	**1,079**	**6,534**
Depreciation				
At 31 December 2015	**201**	**6**	**—**	**207**
Provided during the year	318	32	55	405
Released on disposal	(2)	—	—	(2)
Exchange rate adjustment	(20)	—	(2)	(22)
At 31 December 2016	**497**	**38**	**53**	**588**
Provided during the year	592	34	104	730
Released on disposal	—	—	(33)	(33)
Reclassifications	2	(12)	—	(10)
Exchange rate adjustment	38	—	10	48
At 31 December 2017	**1,129**	**60**	**134**	**1,323**
Net book value				
At 31 December 2017	**4,117**	**149**	**945**	**5,211**
At 31 December 2016	3,087	142	630	3,859
At 31 December 2015	923	88	104	1,115

Included in the totals above are the following assets held under hire purchase or finance leases; these agreements are secured against the assets to which they relate.

10. Property, plant and equipment continued

Group assets under hire purchase and finance lease agreements	Plant and machinery £000	Total £000
Cost		
At 31 December 2015 and 31 December 2016	**—**	**—**
Additions	44	44
Exchange rate adjustment	2	2
At 31 December 2017	**46**	**46**
Depreciation		
At 31 December 2015 and 31 December 2016	**—**	**—**
Provided during the year	8	8
At 31 December 2017	**8**	**8**
Net book value		
At 31 December 2017	**38**	**38**
At 31 December 2015 and 31 December 2016	—	—

During the year the Group reviewed the assets capitalised under computer equipment and identified the components relating to software. Where components relate to software, these have been reclassified in tangible fixed assets with the value included in intangibles under the software heading. See note 11 for details.

Company	Plant and machinery £000	Fixtures, fittings and office equipment £000	Leasehold improvements £000	Total £000
Cost				
At 31 December 2015	**200**	**75**	**104**	**379**
Additions	56	41	7	104
Transfer to subsidiary entities	(168)	—	—	(168)
At 31 December 2016	**88**	**116**	**111**	**315**
Additions	99	96	298	493
Disposals	—	(1)	(111)	(112)
Reclassifications	34	(34)	—	—
At 31 December 2017	**221**	**177**	**298**	**696**
Depreciation				
At 31 December 2015	**7**	**3**	**—**	**10**
Provided during the year	18	22	23	63
Released on disposal	(14)	—	—	(14)
At 31 December 2016	**11**	**25**	**23**	**59**
Provided during the year	33	28	34	95
Released on transfer to subsidiary entities	—	—	(33)	(33)
Reclassifications	5	(6)	—	(1)
At 31 December 2017	**49**	**47**	**24**	**120**
Net book value				
At 31 December 2017	**172**	**130**	**274**	**576**
At 31 December 2016	77	91	88	256
At 31 December 2015	193	72	104	369

There were no assets held under hire purchase or finance leases in the Company.

Notes to the Financial Statements continued

For the year ended 31 December 2017

11. Intangible assets

Group	Software £000	Patents £000	Intellectual property £000	Goodwill £000	Total £000
Cost					
At 31 December 2015	**15**	**1,076**	**1,923**	**3,316**	**6,330**
Additions	71	5	—	—	76
Additions on business combinations	—	—	2,584	5,683	8,267
Exchange rate adjustment	(2)	—	—	—	(2)
At 31 December 2016	**84**	**1,081**	**4,507**	**8,999**	**14,671**
Additions	194	—	—	—	194
Reclassifications	49	—	—	—	49
Exchange rate adjustment	4	—	—	391	395
At 31 December 2017	**331**	**1,081**	**4,507**	**9,390**	**15,309**
Amortisation					
At 31 December 2015	**2**	**157**	**—**	**—**	**159**
Provided during the year	13	200	—	—	213
At 31 December 2016	**15**	**357**	**—**	**—**	**372**
Provided during the year	52	200	—	—	252
Reclassifications	10	—	—	—	10
Exchange rate adjustment	1	—	—	—	1
At 31 December 2017	**78**	**557**	**—**	**—**	**635**
Net book value					
At 31 December 2017	**253**	**524**	**4,507**	**9,390**	**14,674**
At 31 December 2016	69	724	4,507	8,999	14,299
At 31 December 2015	13	919	1,923	3,316	6,171

11. Intangible assets continued

Company	Software £000	Patents £000	Total £000
Cost			
At 31 December 2015	**—**	**1,076**	**1,076**
Additions	14	—	14
At 31 December 2016	**14**	**1,076**	**1,090**
Additions	182	—	182
At 31 December 2017	**196**	**1,076**	**1,272**
Amortisation			
At 31 December 2015	**—**	**—**	**—**
Provided during the year	2	199	201
At 31 December 2016	**2**	**199**	**201**
Provided during the year	22	199	221
Reclassifications	1	—	1
At 31 December 2017	**25**	**398**	**423**
Net book value			
At 31 December 2017	**171**	**678**	**849**
At 31 December 2016	12	877	889
At 31 December 2015	—	1,076	1,076

Goodwill amounting to £9.390 million, intellectual property amounting to £4.507 million and patent rights amounting to £1.081 million relate to a single cash-generating unit ("CGU"), contained in the acquisitions of 4D Pharma Research Limited, 4D Pharma Leon, S.L.U. and 4D Pharma Cork Limited (formerly Tucana Health Limited). These entities together provide the necessary facilities and resources to enable the Group to successfully research, manufacture, gain approval for and commercialise Live Biotherapeutic products.

Goodwill, which has arisen on the business combinations, represents staff and accumulated know-how after fair value has been attributed to all other assets and liabilities acquired. Intellectual property of £1.923 million recognised on the business combinations represents bacteria identified by the Group's know-how and processes and at different stages of research and development, from early identification to patented strains of bacteria. Intellectual property of £2.584 million represents the methods and know-how in relation to the MicroDx platform acquired as part of 4D Pharma Cork Limited (formerly Tucana Health Limited).

During the year goodwill, intellectual property, patents and associated property, plant and equipment was tested for impairment in accordance with IAS 36 Impairment of Assets. The recoverable amount of the CGU exceeds the carrying amount of goodwill, intellectual property, patents and associated property, plant and equipment. The recoverable amount of the CGU has been measured using a value-in-use calculation and, as such, no impairment was deemed necessary. The key assumptions used, which are based on both management's past experience as well as externally provided reports, obtained in the prior year, for the value-in-use calculations are those relating to the risk-adjusted net present value of candidates that have been identified as potential future products as at 31 December 2017 and for which estimated potential peak sales and future cash flows have been estimated. In addition, an external valuation of intellectual property contained via the acquisition of 4D Pharma Cork Limited (formerly Tucana Health Limited) has been used. Valuation of an early stage drug discovery pharmaceutical company is a notoriously difficult task and an analysis of financial history gives little indication of future performance. Despite this, for products currently in development, sales potentials can be estimated and management has used its own experience as well as consulting with external experts to establish best estimates of sales pricing and revenue forecasting and these can provide the starting point for valuing these products and ensuring that their value has not been impaired.

The recoverable amount of goodwill, intellectual property, patents and associated property, plant and equipment exceeds the carrying amount by 4,985%. The key assumption considered most sensitive for the value-in-use calculation is that regarding the discount rate applied to the net present value calculations. Management has performed sensitivity analysis on this key assumption and increased this from 10% to 20%. Due to the headroom which exists between the recoverable amount and the carrying value there is no reasonable possible change in this assumption that would cause the CGU's carrying value to exceed its recoverable amount.

Notes to the Financial Statements continued

For the year ended 31 December 2017

12. Investment and loans to subsidiaries

Company	Ordinary shares £000
Non-current assets	
At 31 December 2015	**2,323**
Additions in the year	3,805
At 31 December 2016	**6,128**
Loans converted to shares	5,372
Share-based payments issued to employees in subsidiaries	171
At 31 December 2017	**11,671**
By subsidiary	
4D Pharma Research Limited	2,403
4D Pharma Cork Limited	3,837
4D Pharma Leon, S.L.U.	5,431
At 31 December 2017	**11,671**

Company	Loans to subsidiary undertakings £000
Current assets	
At 31 December 2015	**8,916**
Additions in the year	15,198
At 31 December 2016	**24,114**
Additions in the year	14,417
Loans converted to shares	(5,372)
At 31 December 2017	**33,159**
By subsidiary	
4D Pharma Research Limited	29,251
4D Pharma Cork Limited	1,215
4D Pharma Leon, S.L.U.	2,693
At 31 December 2017	**33,159**

On 3 October 2017 the Company converted €6.052 million of existing loans into ordinary shares in 4D Pharma Leon, S.L.U. at a rate of €1.127: £1 creating an additional investment in shares of £5.372 million and reducing the Group loans by a corresponding amount.

Details of the share-based payments issued to employees in subsidiaries are included in note 21.

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12. Investment and loans to subsidiaries continued

Subsidiary undertakings

Subsidiary undertaking	Country of incorporation	Registered office	Principal activity	Holding at 31 December 2017
4D Pharma Research Limited	Scotland	Life Sciences Innovation Building, Cornhill Road, Aberdeen AB25 2ZS	Research and development	**100%**
4D Pharma Cork Limited	Ireland	Room 447, Food Sciences Building, University College Cork, Western Road, Cork T12 YN60	Research and development	**100%**
4D Pharma Leon, S.L.U.	Spain	Parque Tecnológico de León, Parcela, M–10.4, 24009, Armunia, León, Spain	Production of Live Biotherapeutics	**100%**
Microbiomics Limited	England and Wales	9 Bond Court, Leeds LS1 2JZ	Dormant	**100%**
The Microbiota Company Limited	England and Wales	9 Bond Court, Leeds LS1 2JZ	Dormant	**100%**

The shares in all the companies listed above are held by 4D pharma plc.

The following wholly owned subsidiaries were dormant and were wound up during the year to 31 December 2017:

Subsidiary undertaking	Country of incorporation
Schosween 18 Limited	England and Wales

The following companies were exempt from the requirements of the Companies Act 2006 relating to the audit of individual accounts for the financial year ended 31 December 2017, by virtue of section 479A of the Companies Act 2006:

Subsidiary undertaking	Company number
The Microbiota Company Limited	09132301
Microbiomics Limited	08871792

13. Inventories

	At 31 December 2017 Group £000	At 31 December 2017 Company £000	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Consumables and materials	**253**	**—**	238	—

The Directors consider that the carrying amount of inventories is the lower of cost and market value.

During the year £1.388 million (31 December 2016: £1.641 million) of inventories were expensed to the Income Statement.

14. Trade and other receivables

	At 31 December 2017 Group £000	At 31 December 2017 Company £000	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Prepayments	**3,238**	**428**	2,651	350
	3,238	**428**	2,651	350

The Directors consider that the carrying amount of trade and other receivables approximates to their fair value.

Notes to the Financial Statements continued

For the year ended 31 December 2017

15. Taxation receivables

Non-current receivables	At 31 December 2017 Group £000	At 31 December 2017 Company £000	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Corporation tax	**56**	**—**	23	—
	56	**—**	23	—

Non-current assets include research and development tax claims in overseas subsidiaries that are repayable in more than one year.

Current receivables	At 31 December 2017 Group £000	At 31 December 2017 Company £000	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Corporation tax	**3,522**	**445**	2,269	410
VAT	**786**	**33**	1,046	45
	4,308	**478**	3,315	455

The Directors consider that the carrying amount of taxation receivables approximates to their fair value.

16. Cash, cash equivalents and deposits

	At 31 December 2017 Group £000	At 31 December 2017 Company £000	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Short-term investments and cash on deposit	**38,133**	**38,133**	40,111	40,111
Cash and cash equivalents	**11,865**	**11,060**	28,661	27,778
	49,998	**49,193**	68,772	67,889

Under IAS 7 Statement of Cash Flows, cash held on long-term deposits (being deposits with maturity of greater than three months and no more than twelve months) that cannot readily be converted into cash has been classified as a short-term investment. The maturity on this investment was less than twelve months at the reporting date.

Cash and cash equivalents at 31 December 2017 include deposits with original maturity of three months or less of £5 million (Group) and £5 million (Company).

The Directors consider that the carrying value of cash and cash equivalents approximates their fair value. For details on the Group's credit risk management refer to note 24.

17. Trade and other payables

Current	At 31 December 2017 Group £000	At 31 December 2017 Company £000	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Trade payables	**1,803**	**1,000**	1,163	254
Other payables	**695**	**27**	35	35
Contingent consideration	**—**	**—**	2,560	—
Taxation and social security	**264**	**146**	581	482
Hire purchase and finance leases	**10**	**—**	—	—
Accruals	**2,210**	**172**	598	247
	4,982	**1,345**	4,937	1,018

Trade and other payables principally comprise amounts outstanding for trade purchases and ongoing costs. Trade payables are non-interest bearing and are typically settled on 30 to 45-day terms.

17. Trade and other payables continued

The Directors consider that the carrying value of trade payables, other payables and accruals approximates to their fair value.

The Group has financial risk management policies in place to ensure that any trade payables are settled within the credit time frame and no interest has been charged by any suppliers as a result of late payment of invoices during the reporting year presented herein.

18. Deferred tax

	Group £000
At 31 December 2015	**385**
Arising on the fair value of intellectual property on the acquisition of subsidiaries	578
At 31 December 2016	**963**
Exchange rate movement	2
At 31 December 2017	**965**

All deferred tax liabilities relate to the tax arising on fair value adjustment on the acquisition of subsidiaries and as such there is no provision for deferred tax in the Company.

19. Other payables

Non-current payables	**At 31 December 2017 Group £000**	**At 31 December 2017 Company £000**	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Contingent consideration	**1,979**	**1,979**	774	774
Hire purchase and finance leases	**26**	**—**	—	—
	2,005	**1,979**	774	774

Contingent consideration

The non-current contingent consideration is made up as follows:

	At 31 December 2017 Group £000	**At 31 December 2017 Company £000**	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Brought forward	**774**	**774**	—	—
Contingent consideration	**—**	**—**	985	985
Reassessment of contingent consideration to be satisfied in shares	**4,395**	**4,395**	—	—
Discounting of estimated future cash flows	**(921)**	**(921)**	(282)	(282)
Part settlement of contingent consideration in shares	**(2,389)**	**(2,389)**	—	—
Unwinding of discount	**120**	**120**	71	71
	1,979	**1,979**	774	774
Analysed as follows:				
Within one year	**—**	**—**	—	—
More than one year	**1,979**	**1,979**	774	774
	1,979	**1,979**	774	774

The above contingent consideration relates to the amounts due on the remaining milestones which form part of the original contingent acquisition costs for the entire issued share capital in Tucana Health Limited (now 4D Pharma Cork Limited) on 10 February 2016.

The contingent consideration is based on milestones, the first of which reflects the technical validation of the MicroDx diagnostic platform, enabling the stratification of IBS patients. MicroDx has been designed to diagnose, stratify and monitor the treatment of patients based on their gut microbiome, the bacteria which colonise the human gastrointestinal tract.

Notes to the Financial Statements continued

For the year ended 31 December 2017

19. Other payables continued

Contingent consideration continued

On 23 August 2017 635,692 ordinary shares were allotted in 4D pharma plc for an aggregate value of €2.6 million (at £3.7575 per 4D pharma plc share, being the average mid-market price of a 4D share for the five business days immediately preceding the date of allotment) and were admitted on 31 August 2017.

The following table lists the inputs used in valuing the provision:

The Group and the Company	**2017**	2016
Share price	**755p**	757p
Cost of capital	**17.50%**	17.50%

Hire purchase and finance leases

	At 31 December 2017 Group £000	**At 31 December 2017 Company £000**	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Hire purchase and finance leases	**26**	**—**	—	—
Analysed as follows:				
Due between one and two years	**11**	**—**	—	—
Due between two to five years	**15**	**—**	—	—
	26	**—**	—	—

Repayment and interest rates on hire purchase and finance lease agreements are fixed at the contract date. The average effective borrowing rate for hire purchase and finance leases at 31 December 2017 was 3.95% over a weighted average remaining period of 39 months; there were no such agreements during the year to 31 December 2016.

All hire purchase and finance lease agreements are secured by the Group against the assets to which they relate.

20. Share capital

The Group and the Company	Ordinary shares Number	Share capital £000	Share premium £000	Total £000
Allotted, called up and fully paid ordinary shares of 0.25p				
At 1 January 2016	**64,365,198**	**161**	**102,003**	**102,164**
Shares issued on 10 February 2016	410,603	1	3,099	3,100
Shares issued on 8 April 2016	82,349	—	807	807
At 31 December 2016	**64,858,150**	**162**	**105,909**	**106,071**
Shares issued on 23 August 2017	635,692	2	2,387	2,389
At 31 December 2017	**65,493,842**	**164**	**108,296**	**108,460**

The balances classified as share capital and share premium include the total net proceeds (nominal value and share premium respectively) on issue of the Company's equity share capital, comprising 0.25 pence ordinary shares.

The Company issued 635,692 shares equating to €2.6 million in share capital at a five previous working day mid-market value of £3.7575 per share on 23 August 2017 with the payment representing the settlement of deferred consideration on the acquisition of 4D Pharma Cork Limited (formerly Tucana Health Limited) on achievement of its first milestone. The milestone achieved reflects the technical validation of the MicroDx diagnostic platform enabling the stratification of IBS patients. MicroDx has been designed to diagnose, stratify and monitor the treatment of patients based on their gut microbiome, the bacteria which colonise the human gastrointestinal tract.

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21. Share-based payment reserve

The Group and the Company	£000
At 31 December 2015	**7**
Share-based compensation	131
At 31 December 2016	**138**
Share-based compensation	302
At 31 December 2017	**440**

The share-based payment reserve accumulates the corresponding credit entry in respect of share-based payment charges. Movements in the reserve are disclosed in the Group Statement of Changes in Equity.

A charge of £301,570 has been recognised in the Statement of Comprehensive Income for the year (31 December 2016: £131,336).

Share option schemes

The Group operates the following unapproved share option scheme:

4D pharma plc 2015 Long Term Incentive Plan ("LTIP")

Share options were granted to staff members on 10 November 2015, 11 May 2016 and 24 May 2017. Share options are awarded to management and key staff as a mechanism for attracting and retaining key members of staff. These options vest over a three-year period from the date of grant and are exercisable until the tenth anniversary of the award. Exercise of the award is subject to the employee remaining a full-time member of staff at the point of exercise.

The fair value benefit is measured using a Black Scholes model, taking into account the terms and conditions upon which the share options were issued.

The Group and the Company	**2017 Number**	2016 Number
Outstanding at the start of the year	**101,056**	40,909
Granted during the year	**240,406**	60,147
Outstanding at 31 December	**341,462**	101,056
Exercisable at 31 December	**—**	—

Weighted average exercise price of options

The Group and the Company	**2017 Pence**	2016 Pence
Outstanding at the start of the year	**0.25**	0.25
Granted during the year	**0.25**	0.25
Outstanding at 31 December	**0.25**	0.25

For the share options outstanding as at 31 December 2017, the weighted average remaining contractual life is 2.03 years (31 December 2016: 2.13 years).

No share options were exercised during the year (31 December 2016: none) and no share options were exercisable at 31 December 2017 or at 31 December 2016.

The following table lists the inputs to the models used at the respective year ends:

The Group and the Company	**2017**	2016
Expected volatility	**52.50%**	52.50%
Risk-free interest rate	**0.41%**	1.4%
Expected life of options	**3 years**	3 years
Weighted average exercise price	**0.25p**	0.25p
Weighted average share price at date of grant	**321p**	771p

Notes to the Financial Statements continued

For the year ended 31 December 2017

21. Share-based payment reserve continued

Share option schemes continued

The range of exercise prices of share options outstanding at the end of the reporting period is between 321 pence and 771 pence per share option.

The expected life of the options is based on historical data and is not necessarily indicative of exercise patterns that may occur. The expected volatility reflects the assumption that the historical volatility is indicative of future trends, which may also not necessarily be the actual outcome.

No dividends were assumed to be paid in the foreseeable future.

The model assumes, within the calculation of the charge, delivery of options that are dependent on a judgemental comparison to the total shareholder return against a specified comparator group of companies upon passing of the vesting period.

No other features of options granted were incorporated into the measurement of fair value.

22. Capital and reserves

The components of equity are as follows:

Share capital

The share capital account includes the par value for all shares issued and outstanding.

Share premium account

The share premium account is used to record amounts received in excess of the nominal value of shares on issue of new shares.

Merger reserve

The merger reserve comprises the premium arising on shares issued as consideration for the acquisition of subsidiary undertakings where merger relief under section 612 of the Companies Act 2006 applies.

Translation reserve

The translation reserve is composed of the exchange rate movements in non-cash assets for foreign subsidiaries which arise on the translation of foreign subsidiaries. Movements in the reserve are disclosed in the Group Statement of Changes in Equity.

Other reserve

The other reserve represents the balance arising on the acquisition of the former non-controlling interest in 4D Pharma Research Limited.

Share-based payment reserve

The share-based payment reserve accumulates the corresponding credit entry in respect of share-based compensation charges. Movements in the reserve are disclosed in the Group Statement of Changes in Equity.

Retained earnings

Retained earnings includes the accumulated profits and losses arising from the Group Statement of Comprehensive Income and certain items from other comprehensive income attributable to equity shareholders net of distributions to shareholders.

23. Commitments

Operating lease commitments

The Group leases premises under non-cancellable operating lease agreements. The future aggregate minimum lease and service charge payments under non-cancellable operating leases are as follows:

	At 31 December 2017 Group £000	**At 31 December 2017 Company £000**	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Land and buildings:				
– Not later than one year	**296**	**150**	265	43
– After one year but not more than five years	**1,087**	**600**	604	117
Other leases:				
– Not later than one year	**2**	**2**	—	—
– After one year but not more than five years	**3**	**3**	—	—
	1,388	**755**	869	160

Capital expenditure

The Group has no committed capital expenditure at 31 December 2017 nor at 31 December 2016.

The Company has no committed capital expenditure at 31 December 2017 nor at 31 December 2016.

Contractual commitments

The Group has the following non-cancellable contractual commitments at the balance sheet date:

	At 31 December 2017 Group £000	**At 31 December 2017 Company £000**	At 31 December 2016 Group £000	At 31 December 2016 Company £000
Research and development:				
– Not later than one year	**2,642**	**2,099**	1,220	1,220
– After one year but not more than five years	**5,146**	**4,738**	1,874	438
	7,788	**6,837**	3,094	1,658

24. Financial risk management

Overview

This note presents information about the Group's exposure to various kinds of financial risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital.

The Board of Directors has overall responsibility for the establishment and oversight of the Group's risk management framework. The Executive Directors report regularly to the Board on Group risk management.

It is, and has been throughout the year, the Group's policy that no speculative trading in financial instruments is undertaken.

Capital risk management

The Company reviews its forecast capital requirements on a half-yearly basis to ensure that entities in the Group will be able to continue as a going concern while maximising the return to stakeholders.

The capital structure of the Group consists of equity attributable to equity holders of the parent, comprising issued share capital, reserves and retained earnings as disclosed in note 20 and in the Group Statement of Changes in Equity. Total equity was £69.786 million at 31 December 2017 (31 December 2016: £86.483 million).

The Company is not subject to externally imposed capital requirements.

Liquidity risk

The Group's approach to managing liquidity is to ensure that, as far as possible, it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation.

Notes to the Financial Statements continued

For the year ended 31 December 2017

24. Financial risk management continued

Liquidity risk continued

The Group manages all of its external bank relationships centrally in accordance with defined treasury policies. The policies include the minimum acceptable credit rating of relationship banks and financial transaction authority limits. Any material change to the Group's principal banking facility requires Board approval. The Group seeks to mitigate the risk of bank failure by ensuring that it maintains relationships with a number of investment grade banks.

At the reporting date the Group was cash positive with no outstanding borrowings, except for a hire purchase agreement secured against the assets to which it relates.

Categorisation of financial instruments 31 December 2017	Fixed rate £000	Floating rate £000	Non-interest bearing £000	Total £000
Group				
Cash, cash equivalents and short-term deposits	**38,133**	**11,865**	**—**	**49,998**
Trade and other payables	**—**	**—**	**(4,944)**	**(4,944)**
Hire purchase and finance leases	**(36)**	**—**	**—**	**(36)**
	38,097	**11,865**	**(4,944)**	**45,018**
Company				
Cash, cash equivalents and short-term deposits	**38,133**	**11,060**	**—**	**49,193**
Inter-company loans	**—**	**—**	**33,159**	**33,159**
Trade and other payables	**—**	**—**	**(1,321)**	**(1,321)**
	38,133	**11,060**	**31,838**	**81,031**

Categorisation of financial instruments 31 December 2016	Fixed rate £000	Floating rate £000	Non-interest bearing £000	Total £000
Group				
Cash, cash equivalents and short-term deposits	50,111	18,661	—	68,772
Trade and other payables	—	—	(3,758)	(3,758)
	50,111	18,661	(3,758)	65,014
Company				
Cash, cash equivalents and short-term deposits	50,111	17,778	—	67,889
Inter-company loans	—	—	24,114	24,114
Trade and other payables	—	—	(289)	(289)
	50,111	17,778	23,825	91,714

All categories of financial assets and liabilities are measured at amortised cost with the exception of the contingent consideration which is measured at fair value through the Statement of Total Comprehensive Income using a level 3 valuation technique.

The values disclosed in the above table are carrying values. The Board considers that the carrying amount of financial assets and liabilities approximates to their fair value.

Interest rate risk

As the Group has no significant borrowings the risk is limited to the reduction of interest received on cash surpluses held at bank which receive a floating rate of interest. The exposure to interest rate movements is immaterial.

Maturity profile

The Directors consider that the carrying amount of the financial liabilities approximates to their fair value.

As all financial assets are expected to mature within the next twelve months an aged analysis of financial assets has not been presented.

24. Financial risk management continued

Maturity of liabilities and cash outflows

Group	2017 Less than one year £000	2017 Between one and two years £000	2017 Between two and five years £000	2016 Less than one year £000	2016 Between one and two years £000	2016 Between two and five years £000
Trade and other payables	**4,943**	**—**	**—**	3,758	—	—
Hire purchase and finance leases	**10**	**11**	**15**	—	—	—
	4,953	**11**	**15**	3,758	—	—

As all financial liabilities in the Company are expected to mature within the next twelve months no maturity of liabilities has been presented.

Foreign currency risk

The Group's principal functional currency is Sterling. However, the Group has two subsidiaries whose functional currency is the Euro and the Group as a whole undertakes certain transactions denominated in foreign currencies.

The Group is exposed to currency risk on sales and purchases that are denominated in a currency other than the respective functional currency of the Company. These are primarily US Dollars (USD) and Euros (EUR). Transactions outside of these currencies are limited.

The Group may use forward exchange contracts as an economic hedge against currency risk, where cash flow can be judged with reasonable certainty. Foreign exchange swaps and options may be used to hedge foreign currency receipts in the event that the timing of the receipt is less certain. There were no open forward contracts as at 31 December 2017 or at 31 December 2016 and the Group did not enter into any such contracts during these years.

The split of Group assets between Sterling and other currencies at the year end is analysed as follows:

Group	2017 GBP £000	2017 USD £000	2017 EUR £000	2017 Total £000	2016 GBP £000	2016 USD £000	2016 EUR £000	2016 Total £000
Cash, cash equivalents and deposits	**48,676**	**90**	**1,232**	**49,998**	67,413	11	1,348	68,772
Trade and other payables	**(3,439)**	**(35)**	**(1,469)**	**(4,943)**	(831)	(80)	(2,847)	(3,758)
Hire purchase and finance leases	**—**	**—**	**(36)**	**(36)**	—	—	—	—
	45,237	**55**	**(273)**	**45,019**	66,582	(69)	(1,499)	65,014

Sensitivity analysis to movement in exchange rates

The Directors have considered the transactions in foreign currency and have concluded that, as there is no sales revenue and the majority of the Group transactions are denominated in Sterling, the exposure to exchange rate risk is negligible.

Notes to the Financial Statements continued

For the year ended 31 December 2017

25. Related party transactions

Key management compensation	**Year to 31 December 2017 £000**	Year to 31 December 2016 £000
Executive Directors:		
Salaries and short-term benefits	**202**	202
Employer's National Insurance and social security costs	**25**	25
	227	227
Fees for services provided as Non-Executive Directors:		
Salaries and short-term benefits	**50**	50
Employer's National Insurance and social security costs	**4**	2
	54	52
Other key management:		
Salaries and short-term benefits	**775**	451
Employer's National Insurance and social security costs	**134**	54
Employer's pension contributions	**26**	—
Share-based payment charge	**302**	131
	1,237	636

Group

Transactions with Directors and related entities

During the year Aquarius Equity Partners Limited, an entity controlled by Duncan Peyton and Dr Alexander Stevenson, charged the Group £2,116 for office expenses (31 December 2016: £8,368). As at 31 December 2017 £Nil was due from Aquarius Equity Partners Limited (31 December 2016: £3,144).

Transactions with key personnel and related entities

During the year summ.it assist llp, an entity in which Stephen Dunbar is a partner, recharged the Group £3,593 for IT equipment and software (31 December 2016: £23,690), £377 for IT support (31 December 2016: £4,126), £65,939 for accounting and bookkeeping services (31 December 2016: £60,328), £12,500 for staff recruitment fees (31 December 2016: £Nil) and £3,718 for other costs (31 December 2016: £3,199). At the year end £5,065 was due to summ.it assist llp (31 December 2016: £6,766).

3C SAS, an entity owned by Christophe Carité, provided consultancy services to the Group of £Nil (31 December 2016: £182,324) and recharged costs of £Nil (31 December 2016: £73,029). At the year end £Nil was due to 3C SAS (31 December 2016: £Nil).

Biomar Microbial Technologies, an entity in which Antonio Fernandez is a director, charged rent and building service costs to the Group of £302,487 (31 December 2016: £104,987). At the year end £5,469 was due to Biomar Microbial Technologies (31 December 2016: £27,411).

Company

Transactions between 100% owned Group companies have not been disclosed as these have all been eliminated in the preparation of the Group financial statements.

Transactions with Directors and related entities

During the year Aquarius Equity Partners Limited, an entity controlled by Duncan Peyton and Dr Alexander Stevenson, charged the Company £2,116 for office expenses (31 December 2016: £8,368). As at 31 December 2017 £Nil was due from Aquarius Equity Partners Limited (31 December 2016: £3,144).

25. Related party transactions continued

Company continued

Transactions with key personnel and related entities

During the year summ.it assist llp, an entity in which Stephen Dunbar is a partner, recharged the Company £3,593 for IT equipment and software (31 December 2016: £23,590), £377 for IT support (31 December 2016: £4,126), £65,939 for accounting and bookkeeping services (31 December 2016: £53,950), £12,500 for staff recruitment fees (31 December 2016: £Nil) and £3,718 for other costs (31 December 2016: £3,199). At the year end £5,065 was due to summ.it assist llp (31 December 2016: £5,854).

3C SAS, an entity owned by Christophe Carité, provided consultancy services to the Company of £Nil (31 December 2016: £182,324) and recharged costs of £Nil (31 December 2016: £73,029). At the year end £Nil was due to 3C SAS (31 December 2016: £Nil).

All related party transactions during the current and previous year were considered to be at arm's length.

Company Information

Country of incorporation

United Kingdom

Company number

08840579

Directors

DR Norwood (Non-Executive Chairman)
DJ Peyton
AJ Stevenson
T Engelen (Non-Executive)

Company secretary and registered office

LS Dale
4D pharma plc
9 Bond Court
Leeds LS1 2JZ

Auditor

RSM UK Audit LLP
3 Hardman Street
Manchester M3 3HF

Nominated advisor and joint broker

Zeus Capital Limited
82 King Street
Manchester M2 4WQ

and

10 Old Burlington Street
London W1S 3AG

Joint broker

Bryan Garnier & Co. Limited
Beaufort House
15 St. Botolph Street
London EC3A 7BB

Registrar

Link Asset Services
The Registry
34 Beckenham Road
Beckenham
Kent BR3 4TU

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