

LifeArc

Ideas for life

A review of our work

lifearc.org



The LifeArc logo is displayed in a white, sans-serif font against a dark blue background. The background of the entire page is a photograph of a modern, multi-story building with a glass facade and a grey metal exterior, situated on a green lawn with several trees. The sky is clear and blue.

LifeArc

We champion human health

Our drug discovery laboratories on the Stevenage Open Innovation Campus

MISSION

We're an independent medical research charity

Great research is emerging from academia, universities and hospitals every day, but that research often needs extra support and momentum to get it out of the laboratory and into a commercial partner for further development. This is the principal reason why LifeArc[®] (formerly MRC Technology) was created over 25 years ago.

Our mission is to pioneer new ways to turn great science into greater patient impact. It is at the heart of how we work, from the way we bring together networks of partners to tackle specific disease areas, to the creation of new funds for investment and the special mix of expertise and experience we've built within the organisation.

Our track record of success has given us the financial freedom to act differently and invest in the health challenges we believe have a chance to improve people's lives.

This review of our work demonstrates how we're driving change in the medical research community to deliver more new therapeutics and diagnostics and the resulting impact we are having on patients' lives.

We can achieve more, and do it more quickly, by working with others and sharing resources under the common goal of putting the patient first. We remain committed to helping researchers, charities, funding councils and commercial partners realise the maximum patient impact from early stage research. If our work excites and interests you, and you would like to learn more about how we can make a bigger difference together, please talk to us.

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 [@lifearc1](https://twitter.com/lifearc1)



“In the year ahead, we want to progress even more treatments and diagnostics that help patients.”

Dr. Dave Tapolczay
CEO,
LifeArc

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Pioneering for patients

It's time to change the way we develop new medical innovation to benefit patients

FOREWORD

Medical research faces key challenges

It is human nature to be curious. The desire to understand human biology and how we are affected by our environment has been the subject of medical research for hundreds of years. As we make each new discovery, however, we often raise yet more questions.

While the scientific community has made significant progress in identifying and treating some diseases, researchers still have a long way to go in understanding even the basic science behind others, such as dementia. Society is facing new challenges too, including the evolution of antimicrobial resistance, which threatens to change the fundamental basis of medical practice within a generation. We exist to find answers to challenges such as these, but we don't do it alone.

The discovery and development of new medicines and diagnostics is challenging but the outlook for medical research remains positive. It is without doubt that patients have always been at the heart of healthcare, but medicines and medical research have moved on from treating an individual with a disease to treating an individual with their own particular disease. For this change in approach we need advanced diagnostics and better medicines.

You can read about our work to create a blood test for monitoring breast cancer on page 13 that substantially reduces the pain and discomfort experienced by patients during their cancer treatment. The article that follows explores our role in developing pembrolizumab, a new type of cancer treatment called immunotherapy that changed LifeArc for ever, with an example of how the drug impacts patients.

We must find new ways to collaborate

We can see that the world of research is changing. From advances in medicines and diagnostics, to the way our digital age allows information to be shared more quickly and fully than ever before, collaborative research is more of a reality today than it has ever been. While joint projects between two or more competitor companies are not unusual, and work with diverse research partners is fairly commonplace, the era of openly sharing all research and results is unlikely to happen anytime soon.

The importance of collaboration in medical research is also a key feature in our interview with Carol Bewick, from the Association of Medical Research Charities, on page 22.

Our recent rebranding presented the opportunity to change the way we collaborate. As a charity with the purpose to benefit more patients through better science, we will bring together multiple different organisations to collectively address the big medical research issues faced by society. On page 25, we talk about how we're putting this to work in dementia research and on page 27 how we're creating a research community to address antibiotic resistance.

In the remainder of the review we discuss how collaboration is accelerating the development of early stage medical discoveries and ensuring the progression of research that may otherwise not get to patients. We conclude with our work to accelerate therapeutics for children with cancer, and the exciting news about our new venture, SpringWorks Therapeutics.

INVESTING IN THE FUTURE OF MEDICAL RESEARCH

Using our income to drive research

Thanks to our involvement in the development of pembrolizumab, and the income it brings, we can invest in further medical research.

Over the next five years, LifeArc will have up to £500 million available to invest in future medical breakthroughs.

It is the perfect illustration of how companies with particular expertise can use their skills for the benefit of huge numbers of patients. In this case, as a charity, we will invest the money we receive directly back into our research pipeline to develop more new treatments.

We are investing in new projects

In early 2018, LifeArc will launch two new funds:

Our Philanthropic Fund will provide grants to support scientific innovation that complements funding from other medical research charities and organisations.

Our Seed Fund will invest in early stage therapeutics and biological research that aims to create financial returns, which we will reinvest to advance research into new ways of treating patients. Achieving a return on investment is crucial for our sustainability as it provides additional funding for medical research in the future.

Up to
£500m

To invest
over the next
five years

including a
£5m
Philanthropic
Fund

and a
£25m
Seed
Fund

“We invest income from our research activities to further the discovery and development of new medicines and diagnostics that benefit patients. Now we’re helping other medical research organisations and charities deliver impact from their grant-funded science.”

**Andrew
Mercieca**
CFO,
LifeArc



Making it personal

The development of new diagnostic tests opens up the opportunity to treat the patient, not just the disease

DIAGNOSTICS

Unlocking the potential of new medicines

No two people are the same – different diseases affect people in different ways. Likewise, medicines that perform well in some patients may not do so in others. Personalised medicine allows us to precisely diagnose a specific disease, which means we can prescribe the most appropriate treatment for that person.

As a scientific community, we have developed a greater understanding of medicine through impressive collaborative projects, such as mapping the human genome. As a result, our ability to understand the biological differences between individuals has improved enormously.

However, one of the biggest problems facing patients today is the time it takes to reach a correct diagnosis, which is still a huge challenge. Patients with an incorrect diagnosis will likely be given incorrect treatment. While this may not do them any harm, it could cause them to suffer most unwelcome side effects. At the same time, the underlying cause of their disease is still not being treated and their illness could be progressing unchecked.

Not having a clear diagnosis and treatment plan can also be very detrimental to the mental health of patients and this is another hidden burden that they have to cope with, at an already difficult time. For healthcare systems, paying for medicines that are for the wrong illness takes away valuable resources that could be redeployed for the benefit of other patients.



“Our diagnostics laboratory is tackling the need for new diagnostics head-on, including a recent one for antibiotic resistance.”

Dr. Michael Dalrymple
Executive Director, Diagnostics
and Science Foresight, LifeArc



Peter Wasson,
scientist at LifeArc's
Centre for Diagnostic
Development, using
the Idylla platform

BREAST CANCER

New treatment monitoring test avoids risks from biopsy

Through their shared dedication to patients, LifeArc and diagnostics company Biocartis are developing a 'liquid biopsy' test for breast cancer patients using the automated Idylla™ platform.

The Idylla platform is a machine that accepts a small sample of blood, fed in via a cartridge, and can produce a result within 90 minutes.

The liquid biopsy involves taking a small blood sample, which is a relatively simple procedure, although the process for analysing it is anything but!

Michael Dalrymple said, "Instead of taking a biopsy from the cancer itself, which is invasive and carries significant risk to the patient, it is possible to detect tumour-related DNA in the blood from a small blood sample put in the Idylla machine. Monitoring the patient using a liquid biopsy is convenient as blood is routinely taken during the cancer treatment. Now it is possible to use this blood to monitor if the treatment becomes ineffective."

The collaboration with Biocartis is fundamental to the project's success because we each bring different skills and capabilities to solve the problem. As Dalrymple explained, "As LifeArc is funding development work in our own laboratories, we share the risks of research with Biocartis. They have a proven track record of delivering diagnostic tests to the patient and, if commercially viable, LifeArc will benefit from any sales generated. We will then use this to fund further diagnostics research."

"We believe the availability of this test will have significant impact on how breast cancer is treated."

Dr. Michael Dalrymple
Executive Director,
Diagnostics and Science
Foresight, LifeArc

Although survival rates are improving, there is still a long way to go:

1 in 3

the chance of being diagnosed with cancer during your lifetime.

65%

as you get older you are more likely to develop cancer. Over two thirds of cancers currently diagnosed are in those over 65.

980

new cases of cancer are diagnosed each day in the UK

Source:
Office For National Statistics, UK
cancerresearchuk.org (2017)

DRUG DISCOVERY

Personalised medicine for cancer patients

Personalised medicine, also known as 'precision medicine', is revolutionising the way we diagnose and treat a range of serious diseases. We now understand that cancer is not one disease, but a term used to describe a variety of conditions that all have the same root cause: abnormal cell growth.

Tumours can be classified according to their genetic make-up instead of where they originate in the body. This is because cancers growing in different parts of the body may share the same genetic abnormality and will likely respond to similar treatments. This is giving rise to tests that are paired with a particular therapy and can help to predict an expected outcome. These tests are known as 'companion diagnostics'. A particular cancer may exhibit a unique type of identity tag, known as a 'biomarker', which can be specifically tested for and for which a targeted therapy has also been developed. Because of the accuracy of both the test and the medicine, there is a greater chance of achieving a positive outcome for the patient.

During cancer treatment, which can last months and even years, cancer cells may find a way to bypass the medicine being used and cause patients to suffer a relapse and experience a regrowth of their tumour, perhaps in a different part of their body. When this happens, doctors need to use different treatments that act in another way to attack the cancer from a different angle.

New science is giving cancer nowhere to hide

Throughout our lives, we are exposed to organisms in our environment including bacteria and viruses, which can lead to many types of infection. We have evolved a highly specialised defence mechanism to identify and combat such disease-causing 'pathogens' through what is known as an immune response. Immunotherapy is a new approach to treating diseases that harnesses the body's own defence mechanisms by inducing, enhancing or suppressing an immune response.

The scientists and experts at LifeArc helped develop pembrolizumab (Keytruda®), which is an immunotherapy licensed in a number of cancer types including melanoma, non-small cell lung cancer and classical Hodgkin lymphoma.

A key difference from conventional forms of cancer treatment is that pembrolizumab enables the patient's immune system to recognize a tumour cell and then either inhibit or destroy it. Dr. David Matthews, Associate Director, Biotherapeutics, LifeArc said: "These are drugs known as checkpoint inhibitors; they take the brakes off the immune system and prevent the tumour from hiding from the patient's own defences. Once the tumour is exposed to the immune system, the body is pretty effective at destroying it safely."

LifeArc has helped to developed four drugs currently available to treat patients: Keytruda® (cancer); Tysabri® (multiple sclerosis); Actemra® (rheumatoid arthritis) and Entyvio® (Crohn's disease).

“As well as the four drugs that have been developed from our work in the lab, we are excited that a further seven projects are already in clinical trials.”

Dr. Justin Bryans
Executive Director,
Drug Discovery,
LifeArc





“This drug helped me enormously, keeping my overall disease stable for quite some time. I tolerated it very well and, most importantly, it enabled me to lead a perfectly normal and useful life for the duration of the treatment.”

Jenny Kenworthy

Alex Brown, LifeArc scientist who helped develop pembrolizumab, with patient Jenny at our Stevenage laboratories

PATIENT IMPACT

The experience of a skin cancer patient

Jenny Kenworthy from Cambridgeshire has two daughters and five grandchildren, she was diagnosed with skin cancer in January 2003.

For several years her oncology team at Addenbrooke’s Hospital treated her with a number of different medicines, with varying degrees of success, before prescribing pembrolizumab.

Jenny visited the LifeArc offices and laboratories to meet the scientists who helped develop the drug. “To say how important the work of these scientists is in getting a drug from the lab to patients is a huge understatement,” she said. “Without the work of people like this, their dedication, belief and commitment, we wouldn’t be seeing the enormous advances in the treatment of diseases, which were once untreatable,” she added. “I am full of enormous admiration for everyone at LifeArc and their work in accelerating the process of getting a drug to where it is needed - the patient.”

Getting innovation to the patient

We have been helping organisations move research from the laboratory to the patient for over 25 years

TECHNOLOGY TRANSFER

Partnering research with industry is vital for success

Technology transfer is the process of moving research from one organisation to another for the purpose of further development and commercialisation. It helps make sure that any future financial benefit derived from commercialisation passes to those involved in the early stages of research and development.

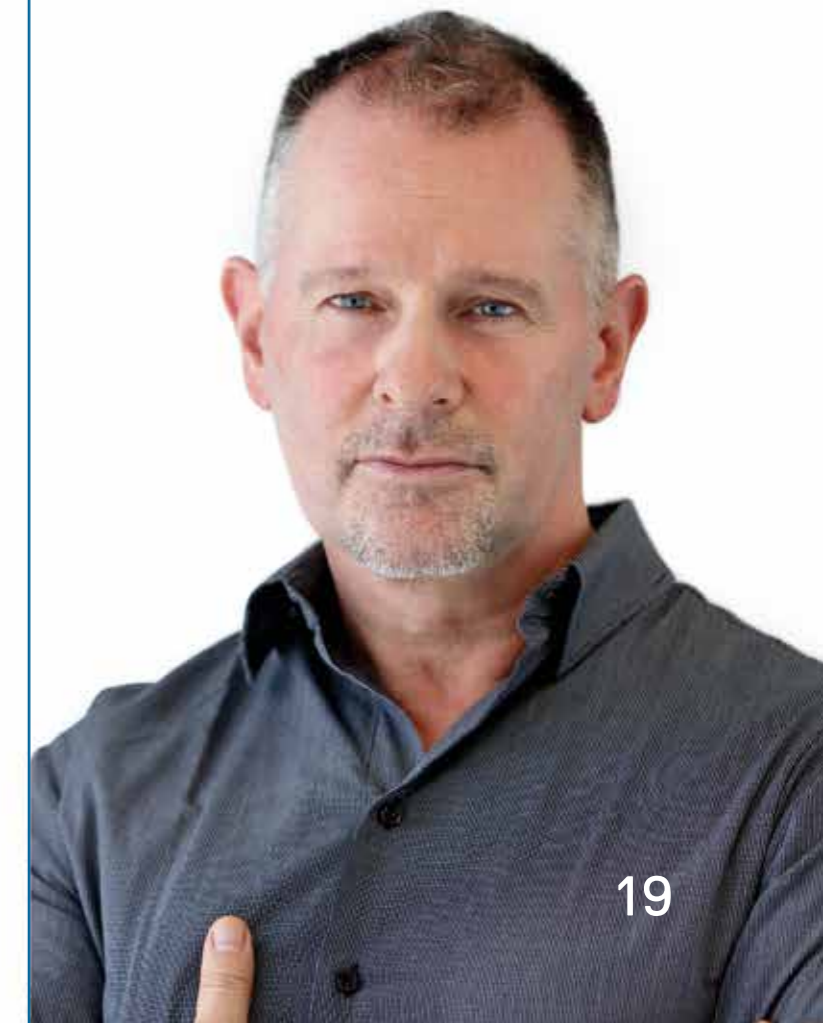
In medical research, technology transfer typically starts with an early stage discovery project that has been developed in a laboratory. Once suitable intellectual property protection is in place, the research will then be licensed to a small biotech company where additional research and preclinical development is conducted to progress it to the next stage. It is then often licensed to a larger pharmaceutical company for clinical trials, registration and, ultimately, for treating patients.

LifeArc has been offering technology transfer expertise to the UK's Medical Research Council for the past 25 years, helping them generate up to £700m in revenues. We also advise the London School of Hygiene and Tropical Medicine and numerous other charities.

Andrew Farquharson explained: "Academics who make significant medical discoveries can struggle to access the resources to effectively translate those discoveries into a viable commercial opportunity that is attractive to a partner. It is vital that research organisations make sure they identify the right pathway for commercialisation of research, to ensure patient impact."

"We have the breadth and depth of experience and skills our partners need to increase the number of projects that make it to the patient."

Andrew Farquharson
Executive Director,
Technology Transfer, LifeArc



MEDICAL RESEARCH CHARITIES

Charities deserve a fair deal

It's not just the academic world that requires help to make the most out of the intellectual property created by their research. We have advised 35 charities on how to strengthen their grant-funding terms and conditions, in addition to providing an in-depth review of any previously-funded research portfolios to identify areas where additional value for their patients could be realised.

A charity funding research into a new medicine or diagnostic test that eventually delivers commercial returns should expect to benefit in some way from their involvement. This helps make sure that charities get a fair deal, allowing them to continue to support and drive forward research for their patients.



“Not all charities have the resources in place to identify and protect potential revenue streams from their research, but this is where LifeArc can help.”

CANCER

LifeArc is working in partnership with Worldwide Cancer Research

To date, LifeArc has negotiated 11 Revenue Share Agreements so that Worldwide Cancer Research will receive a share of any commercial income from research funded by their supporters.

We have worked in partnership with Worldwide Cancer Research (WCR) since 2011 to ensure that intellectual property arising from their international portfolio of research grants is actively managed for the benefit of people affected by cancer. Dr. Helen Rippon said, “LifeArc’s extensive expertise in the commercialisation of medical research is invaluable. It is not an exaggeration to say that without this partnership we would struggle to oversee this crucial aspect of our research investment; a charity of our size simply does not have the resource to develop this function in-house.”

But LifeArc’s contribution goes far beyond the protection of financial investment. We also regularly advise WCR’s grantholders and their host institutions on intellectual property management, funding, commercialisation and access to research tools.

“We view our partnership with LifeArc as vital to ensuring the discovery research we support across the globe has the best chance of reaching patients and going on to reduce the number of lives cut short by cancer.” added Dr. Rippon, “It also creates a potential revenue stream for the charity that, if realised, will be immediately reinvested in pioneering cancer research”.



CHARITIES WORKING IN PARTNERSHIP

Collaboration is a powerful antidote

To maintain the steady flow of innovative therapeutics and diagnostic tools, there is a need for research teams to identify sources of appropriate knowledge and expertise outside their own organisations and build collaborative partnerships.

“Collaboration can make all the difference to patients and their loved ones, and we work together to make it happen. Collaboration is a powerful antidote to the challenges and barriers that face all of us in the pursuit of curing illness. Now, more than ever, we need collaboration to tackle the huge challenges of finding new cures,” said Carol Bewick.

“Five years ago, few charities collaborated outside of academia; their independence was something they were proud of. Keeping others at arm’s length was a way to protect themselves, but in reality a storm was brewing. Charities needed to start thinking more about what impact their research efforts were having on the people they served. They had to question whether they could show much progress in delivering new treatments and therapies so desperately needed,” recalls Bewick.

Partnerships must focus on patients

In 2014, the AMRC took the bold step of producing a guide to help charities begin to collaborate with industry. “We are now seeing the seeds of change with a plethora of new partnerships. In this year alone, we have seen several promising partnerships formed, including those stimulated by LifeArc. These partnerships are driven by the need to put patients first, to truly understand the impact of a disease or condition and to focus on what really matters,” said Bewick. “Patients are now active participants and partners in research.”

At LifeArc we believe that collaborations with charities are critical. We need to understand that the medicines and diagnostics we are developing will actually benefit patients’ lives and our charity partners help us access that insight. The ‘Patient First’ approach means the patient’s voice is heard in all collaborations.

“We need to recognise that today’s fragmented research structure is holding back progress. Joint funding, shared risk-taking and ‘team science’ are vitally important.”

Carol Bewick
Head of Member Engagement and Communications,
Association of Medical Research Charities



AMRC four year analysis of research impact across 40 charities:

224

registered, protected and licensed pieces of intellectual property

39

new companies created

397

medical products or new interventions

102

new software or technical products



“Combining the expertise of charities with the commitment from industry is making a huge impact on dementia research.”



abbvie



LifeArc



Dr. Meera Swami
Business Development
Manager, LifeArc

DEMENTIA

Collaboration is accelerating the search for new dementia treatments

At the 2013 G8 Summit in London there was a clear call to action – to find a disease modifying therapy or cure for dementia.

Following this call to action, LifeArc and its partners (Alzheimer's Research UK, Abbvie, Astex, Eisai, Eli Lilly and MSD) launched the Dementia Consortium in early 2014, to bring together research experts from the charitable, academic and private sectors to accelerate the development of new drugs for dementia. More than 100 projects have now been evaluated and eight are progressing in a bid to find much-needed new treatments for the millions of people affected by dementia.

Bringing seven different organisations to work together was not without its challenges as each one had different priorities and perceptions of risk. Most organisations are pragmatic, though, as Meera Swami, explained: “Our partners see the value in co-funding projects and contributing their knowledge to get new research moving forward.”

“Through the Consortium, we are looking at exciting new science that could hold the key to a breakthrough in how we treat dementia. We are also taking the opportunity to look at some other areas that could be important in the development of new medicines for Alzheimer's disease and other neurodegenerative diseases,” said Swami.

One of the Consortium's latest projects is a joint venture with the University of Manchester to develop novel medicines for Alzheimer's disease that target the immune system.

“The Consortium works by sharing the risks and costs of research projects with LifeArc delivering the scientific outputs. Combining the knowledge of the pharmaceutical companies with the patient experience of the charity has significantly advanced medical research that would not otherwise have happened,” noted Dave Tapolczay.

The Dementia Consortium has £4.5 million in funding to push these projects forward. Catherine Kettleborough, Associate Director, Biology at LifeArc, said: “The really crucial component is not the money that the pharma companies bring to the table, but their insight into the diseases. For them to share that information is a real breakthrough in open collaboration that benefits everyone.”

Learn more at:
dementiaconsortium.org

“We have reached a critical point and must act now on a global scale to slow down antimicrobial resistance.”

Prof. Dame Sally Davies
 Chief Medical Officer for England

BUGS ARE REVOLTING

Fighting antibiotic resistance

A growing list of infections – such as pneumonia, tuberculosis, sepsis and gonorrhoea – are becoming harder to treat.

In the report *Review on Antimicrobial Resistance*, Professor Dame Sally Davies, stated that: “Tackling antimicrobial resistance requires a wide range of approaches and developing alternatives to antibiotics, in humans and animals, is critical to the fight.”

In the same report, it is predicted that by 2050, resistance to currently available antibiotics will prevent common medical procedures and operations from taking place, due to the risk of the patient developing a bacterial infection that would be resistant to treatment. There is a huge need to identify new targets and develop novel antibacterial agents to combat this rising problem of resistance that would send us back to the medical dark ages.

To date, the majority of antibacterial drug discovery programs have focused on very specific aspects of resistance, or just a single pathogen. LifeArc is collaborating with Canada’s Centre for Drug Research and Development (CDRD) and the Defence Science and Technology Laboratory (dstl) at Porton Down, to explore features that are common across a number of pathogens.

The collaboration will identify the most encouraging areas for research from a drug discovery perspective. Once these new findings have been scientifically validated, results will be published and the most promising will advance into drug discovery programs at LifeArc.

Professor Timothy Atkins, Senior Fellow at dstl, stressed the importance of this particular collaboration: “To protect the world population against the threat of infectious disease, we need to develop novel antimicrobials that are active against a broad spectrum of pathogens. To achieve this challenging goal, we need to be working with scientists at the forefront of their respective disciplines.” he added. “This is why we’re extremely enthusiastic about the prospect of working alongside LifeArc and CDRD to bring our individual expertise to bear on this globally important issue.”

Finding new ways to help our partners

We reach beyond our own science by giving access to our rich network of advice, funding and expertise

SUPPORTING INITIATIVES

We're finding new ways to help others push the boundaries

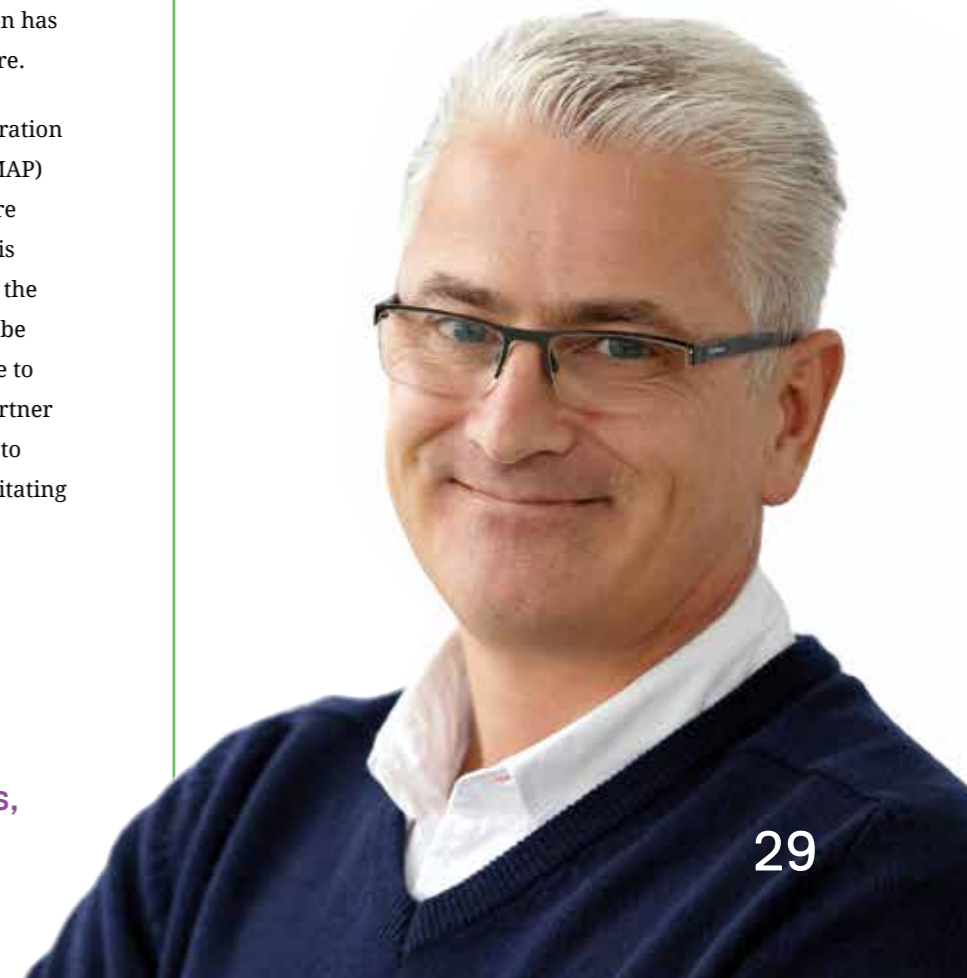
As we have established, research is complex, expensive and has a high failure rate, which is why many projects are put on hold when resources are scarce.

This is particularly true in areas of science that are very demanding, such as those that affect the central nervous system, and this is especially so when it starts to degenerate, as with dementia. It's not to say the results from such stalled research projects are of no value, rather that a decision has been taken to prioritise the funding elsewhere.

That's why LifeArc created the Neurodegeneration Medicines Acceleration Programme (NeuroMAP) to bring together multiple charities who share an interest in driving forward research that is stalled for non-scientific reasons. By sharing the cost of development, promising projects can be progressed to a point where they are suitable to be moved back to the active portfolio of a partner organisation. In doing so, LifeArc is helping to deliver new medicines to patients with debilitating neurological disease.

Dr. David Pardoe
Head, Innovation & Initiatives,
LifeArc

“There's huge potential in research projects that have been put on hold. If we can find new ways of funding the most promising ones, we could fast-track the development of new treatments.”





Mike Johnson
Executive Director,
Business Development, LifeArc

“We need new and collaborative models to drive stalled medicines so they get to patients.”

JUMP STARTING RESEARCH

SpringWorksTherapeutics: Unlocking science

LifeArc’s joint venture with Pfizer, Bain Capital and OrbiMed.

With a purpose of working in partnership with patient foundations and medical research charities, the new company established initial funding of \$103m (£78m) to advance medicines that have stalled in development. SpringWorks Therapeutics will advance research into investigational therapies that have stalled for reasons unrelated to scientific promise. Lara Sullivan, President of SpringWorks, explained: “Through our differentiated business model, biopharmaceutical companies have the opportunity to provide these innovative therapies a new avenue for faster development, giving hope to more patient communities in need of new treatments. In simple terms, this means we are unlocking the potential of medicines that may not otherwise be developed further to ultimately benefit patients.”

The SpringWorks business model is rooted in creating partnerships with a variety of like-minded stakeholders. These include but are not limited to scientists, biopharmaceutical partners, patient groups, funders and philanthropists.

“There is a critical need for new treatments and by working together we identify sound scientific projects that have stalled for various reasons and progress them into the development of new drugs. Through many years’ experience, LifeArc has successfully fostered collaborations that progress new therapies

for critical diseases, so it is a natural extension of our experience to help more patients benefit from advances in medical science,” said Mike Johnson.

Improvements in research methodology, combined with greater productivity in early research and development phases, can mean biopharmaceutical companies often have more development programs than they can realistically afford to move forward.

SpringWorks has begun its work with four promising clinical programs licensed from Pfizer for desmoid tumours; neurofibromatosis; post-traumatic stress disorder (PTSD) and hereditary xerocytosis – all conditions for which there is currently no cure.

“While Pfizer licensed four compounds to SpringWorks Therapeutics at launch, we anticipate that over time, we will source additional projects from pharmaceutical and biopharma companies, as well as academia.” Sullivan added. “This means that other research that is of value to patients has a new route to creating patient benefit,” said Dave Tapolczay, CEO at LifeArc, “and that’s why LifeArc exists: to break down the barriers that prevent great science being transformed into greater patient benefit.” he concluded.

It is estimated that 35,000 children across Europe are diagnosed with cancer every year

1 in 500

children develop cancer before the age of 14

250

will die each year from cancer in the UK

No.1

cause of death by disease in children

Source:
www.childrenwithcancer.org.uk

CHILDHOOD CANCERS

Smaller charities campaigning for new treatments

The genetic abnormalities that lead to cancer can occur at any age. Cancer is the major cause of death by disease for children under 14 years of age but medicines that specifically target childhood cancers are scarce.

One of the main problems is that it is very difficult to conduct clinical trials in children. It is not only sensitive ethical issues that need to be considered but also that the human immune system is still developing during the first decade of life. Treatments that enlist the body's immune system to fight cancer will not produce the same results if the immune system is still developing. It therefore becomes almost impossible to predict how a treatment will perform from one child to the next.

This is a research problem and requires a research-based solution. Cesare Spadoni, Founder and Chairman of the childhood cancer charity aPODD (accelerating Paediatric Oncology Drug Development), explains: "We can only improve the current outlook for childhood cancer if we get new drugs, but we have not seen an improvement in some areas for more than 30 years."

Many small charities exist that are often set up by the relatives of those directly affected by childhood cancer. These charities are scattered around the world, raising small pockets of funding to conduct early stage research. This disconnected and sporadic model of research funding is not effective. By joining forces the charities are better able to fund significant research efforts that could ultimately lead to new treatments for children with cancer.

"It is unlikely that a single charity will have the financial resources to support a clinical development project. But if we could contribute into a common fund then this could be used for clinical development," Spadoni added.

LifeArc



aPODD



We worked with aPODD to launch the KIDS CANCER - ACT NOW campaign to identify promising childhood cancer research, co-fund its development and accelerate it through to clinical trials.

"KIDS CANCER - ACT NOW identifies research projects with the potential to fight childhood cancer that have been developed for adult indications, or those that have not yet been developed for children. It then finds charities with an interest in the specific disease area to co-fund development of that science.

Dr. David Pardoe added: "We draw on the collective knowledge and resources of multiple organisations that share the common purpose of treating childhood cancer, to drive research and development forward. It's about leveraging capabilities and funding inside each organisation and helping them do more; to go further and to do it faster."

Let's talk

We're always on the lookout for new partners and opportunities, with the aim of getting research to patients

OUR CALL TO ACTION

Let's work together to create patient impact

In this review, we've highlighted projects that are turning great science into greater patient impact.

As a charity, with the interests of patients at heart, we can afford to shine a light on new approaches to progress medical research where others might struggle. We create transformative ideas and new ways of working. Innovation in healthcare is not packed with 'Eureka' moments. Instead, promising breakthroughs are built on rigorous processes and iteration of former findings. Our aim is to create a collaborative environment where more medical research is accelerated towards the patient.

Together we have achieved a great deal; countless patients across the globe have been treated or diagnosed by projects LifeArc has been part of. But there is still so much more to do.

Whether you are a patient advocate, academic research group, charity, funder, innovator or biopharmaceutical company, if you believe there are ways we could work together and create more patient impact, talk to us.

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 @lifearc1

Our charitable objects

As a registered UK charity, our mission has to be clearly laid out in law. The objects of LifeArc, as set out in our Articles of Association, are:

► To promote the public benefit by improving human health and medical research, in particular by assisting the progress of the scientific discoveries and new technologies arising from research into therapeutic treatments, drugs, diagnostics, other technologies or information resources.

► To work with industry, charities, universities, the health service and other relevant bodies as well as conducting our own research and development as needed to accelerate the progress of these discoveries and technologies to the stage at which they are:

(i) capable of being made generally available to the medical profession and the public for practical application for the improvement of health and/or

(ii) are transferred or licensed to a third party to progress development of such discoveries or technologies towards such goals.

Key numbers

Here are just a few facts about us

FINANCIALS



£500m

Available to invest over the next five years

£200k

Spent per week on research and development

£700m

Income generated for the MRC

£78m

Invested with partners into SpringWorks Therapeutics

£25m

Seed Fund

£5m

Philanthropic Fund

COLLABORATIONS



35

Medical research charities supported

40

Collaborations with universities across the globe

3

Partners working together to tackle antibiotic resistance

7

Dementia Consortium partners

9

Charities working together in the ACT NOW network

9

Organisations we share drug target assessments with

SCIENCE



7

Clinical trials progressing based on our work

15

Medicines in preclinical development

60

Antibodies humanised

29

Drug discovery projects underway in our labs

4

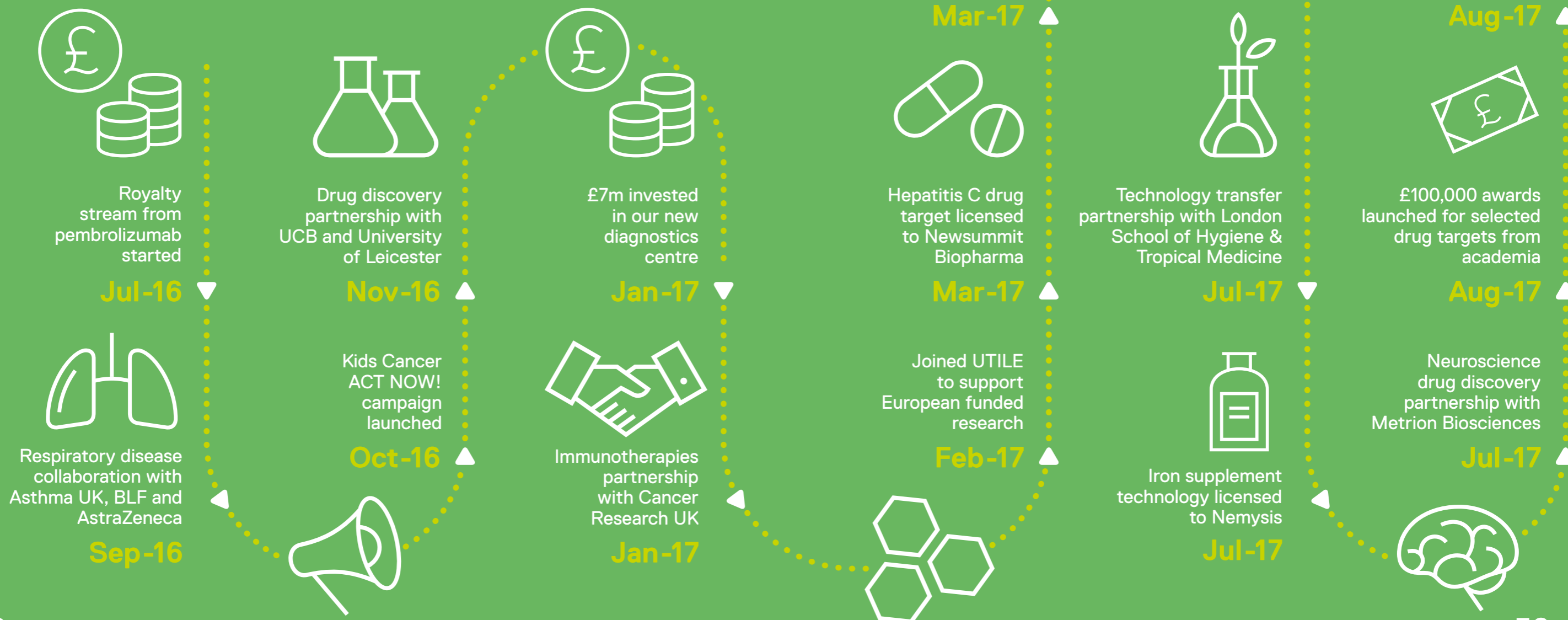
Medicines already available to patients based on our work

1

Diagnostic on the market

Progress points

On the route to patients



LifeArc

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