

# Chapter III

## Current State of Longevity Industry in UK

# The State of Geroscience in UK Today: Geroscience Research Landscape 2017

The purpose of regenerative medicine is not to extend the period of time in which people live in a sick and disabled state, but to increase the period of time that people live in good health by delaying and even preventing the occurrence of age-related disease. Biomedical research has achieved a 30% increase in lifespan of mice, and much more in non-mammalian model organisms by various pharmacological, environmental and genetic interventions.



Mortality rates in the oldest age groups have traditionally reduced over time due to a combination of factors including the improvements in mortality

from circulatory diseases, driven partly by changing smoking habits, the diagnosis and treatment of cancers, and medical and technological advances in the treatment of many other illnesses and diseases.

According to today's statistics, men aged 65 in UK can now expect to live an additional 18.5 years, giving them a life expectancy of 83.5. Women aged 65 are predicted to live another 20.9 years, taking them to almost 86 years of age. We are on the verge of a paradigm shift in how we treat the diseases of aging. The first medicines to make us live longer and healthier lives already exist, and massive investments are catalyzing the creation of many more.

## Sources:

**National life tables UK: 2014 to 2016 (September 27, 2017)**

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/nationallifetablesunitedkingdom/2014to2016>

**An overview of lifestyles and wider characteristics linked to Healthy Life Expectancy in England: June 2017**

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthinequalities/articles/healthrelatedlifestylesandwidercharacteristicsofpeoplelivinginareaswiththehighestorlowesthealthylife/june2017>

**Life Expectancy in UK In 2017 Is Higher Than Ever - But Scotland Is Falling Behind; Jasmin Gray (September 27, 2017)**

[http://www.huffingtonpost.co.uk/entry/life-expectancy-uk\\_uk\\_59ca2b4ee4b01cc57ff533f2](http://www.huffingtonpost.co.uk/entry/life-expectancy-uk_uk_59ca2b4ee4b01cc57ff533f2)

<http://origin.who.int/mediacentre/factsheets/fs381/en/>

# The State of the Longevity Industry in UK: Longevity Industry Landscape 2018

It is time for all members of the geroscience community, not just investors and politicians, to help create a propitious environment for the maturation of the Longevity Industry. With a clear view of the real opportunities and risks ahead, the industry will truly come of age. While the main focus of this series of reports is to analyze the emerging Longevity industry, the reports also delve into the science of longevity, and Volume I is dedicated exclusively to an overview of the history, present and future state of ageing research from a scientific perspective. In recent years, scientists have elucidated the fundamental mechanisms or hallmarks of aging, opening the field of geroscience – the understanding and manipulation of the fundamental biological processes in age-related disease.

Biogerontology Research Foundation UK executives and trustees Dmitry Kaminskiy and Alex Zhavoronkov attended panel discussions at the Aging Societies conference 2016, organized by The Economist, in London, United Kingdom on November 29-30th 2016. The Aging Societies 2016 conference and related upcoming Business of Longevity conference in San Francisco on December 7th signalled an increasing interest in longevity science among investors and economists. The fact that top-tier business publications now regularly hold conferences on the subject of the Longevity Industry is perhaps one of the strongest indicators of its strength and viability today.

Today the Longevity Industry is recognised as a real, viable industry with significant interest from investors and key business opinion leaders. This was not the case a mere three years ago. From 2014-2016, it was not yet recognized as a serious industry with potential for actual ROI or development, even by dedicated supporters of Longevity. Many people including scientists and advocates were pessimistic about the state of the industry, and estimated that it would not achieve real progress and development until the early 2020s. Kaminskiy, however, made the prediction in 2014 that a major boom in the longevity Industry would occur in 2017, which was somewhat controversial at the time, but which has nonetheless proven to be correct. Indeed, today we are experiencing a dynamic of progress in the Longevity Industry that outpaces even his bold prediction at that time.

#### Sources:

**Global Trends - The Rising Longevity Industry (NOVEMBER 2016)**

<http://www.bg-rf.org.uk/press/global-trends-the-rising-longevity-industry>

# Personalizing the National Health Service

NHS England recently announced a strategy for driving the delivery of increasingly personalized medicine, defined in the corresponding strategy paper as “a move away from a ‘one size fits all’ approach to the treatment and care of patients with a particular condition, to one which uses emergent approaches in areas such as diagnostic tests, functional genomic technologies, molecular pathway, data analytics and real-time monitoring of conditions to better manage patients’ health and to target therapies to achieve the best outcomes in the management of a patient’s disease or predisposition to disease”.

The detailed strategy has yet to be revealed, but it has been proposed that a new NHS Personalized Medicine service will be built on four principles: better prediction and prevention of disease; more precise diagnosis of disease; more targeted or personalized treatments for disease; and a more participatory role for patients – a positive development in line with political moves towards more patient-centred models of care.

Genomic data typifies big data, being high in both volume and complexity, and requiring innovative computing solutions for storage, processing and analysis. Combining genomic information with other clinical data (from family history and disease symptoms to the results of different predictive or diagnostic tests and medical investigations) yields a veritable treasure trove – for health systems prepared to invest in the infrastructure, expertise and systemic changes needed to put this knowledge to practical use.

For example, better understanding of an individual’s genome could help health professionals to refine their estimates of disease risk, or choices of treatments, to be more accurate and effective. The potential cost savings from avoiding the use of drugs that will be ineffective or cause harmful (adverse) reactions alone could be significant. Personalized medicine has more to offer, however, especially in allowing highly accurate genomic characterization of tumours that lets doctors select treatments that specifically target key weaknesses of cancer cells; this maximizes efficacy and can also reduce unpleasant side effects for patients.

## Sources:

Philippa Brice. **The UK: your partner for genomics and personalised medicine**

<https://www.gov.uk/government/publications/the-uk-your-partner-for-genomics-and-personalised-medicine>

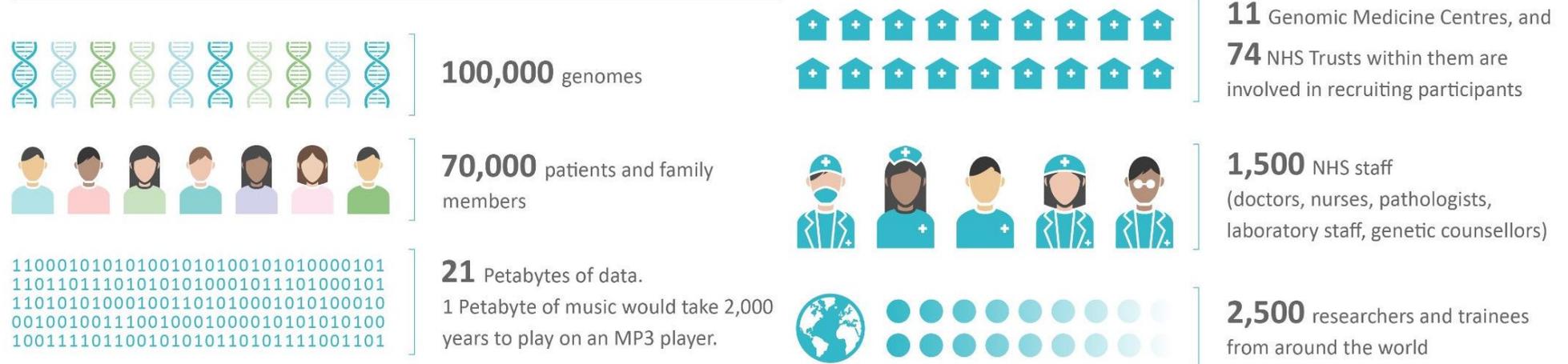
# Building on the 100,000 Genomes Project

One crucial element of the new NHS Personalized Medicine strategy is the plan to build upon the groundbreaking 100,000 Genomes Project. This aims not only to sequence 100,000 genomes from NHS patients and their families – this can be necessary for the identification of rare genetic causes of disease – but also to embed genome sequencing services into everyday NHS practice.

The first steps have already been taken in the creation of NHS Genomic Medicine Centres throughout England, and in plans to reconfigure provision of genomics services to a new model that will use the new high-throughput Genomics England Sequencing Centre near Cambridge created for the 100,000 Genomes Project and a network of Genomics Central Laboratory Hubs (centres of expertise in diagnostic molecular, cytogenetic and genomic analysis aligned with Biomedical Research Centres and Academic Health Science Centres) along with smaller Genomics Local Laboratory Hubs to provide common forms of diagnostic testing, as well as interpreting and reporting to doctors the results of more complex testing.

The aim is to create an efficient, integrated and comprehensive service that can combine multiple forms of scientific and clinical data to inform the practice of personalized medicine.

## The 100,000 Genomes Project in numbers



Sources: Philippa Brice. **The UK: your partner for genomics and personalised medicine**  
<https://www.gov.uk/government/publications/the-uk-your-partner-for-genomics-and-personalised-medicine>

# Building on 100,000 Genomes Project

The 100,000 Genomes Project, led by Genomics England, is sequencing the genomes of 100,000 NHS patients and combining this with NHS data. This groundbreaking work highlights the world-leading position the UK holds in genomics. We are already at an advanced stage of a systematic long-term plan for integrating genomic and personalised medicine into the day-to-day delivery of healthcare.

The NHS will be the world's first healthcare system to launch a genomics medicine service.

International interest in UK's approach to genomics and personalised medicine is growing. There is huge potential for this expertise to be shared with governments, healthcare providers and commercial companies.

This prospectus explains what genomics and personalised medicine are, how they can be applied, and why the UK is at the forefront of this field. The UK is investing heavily to set up the necessary infrastructure and levels of service integration to deliver population wide benefits from genomics.

We are in the process of creating an unparalleled end-to-end service, integrating every step of the genomic pathway to maximise patient benefit.

You can draw on this knowledge and experience to invest in the facilities and services needed to optimise these benefits.

Genomics is complex field, but finding suitable commercial partners in UK need not be. The simplest way to access this expertise is through Healthcare UK, UK government's specialists in international healthcare partnership working.

This was published originally by UK Trade and Investment which has since moved to the Department for International Trade (DIT).

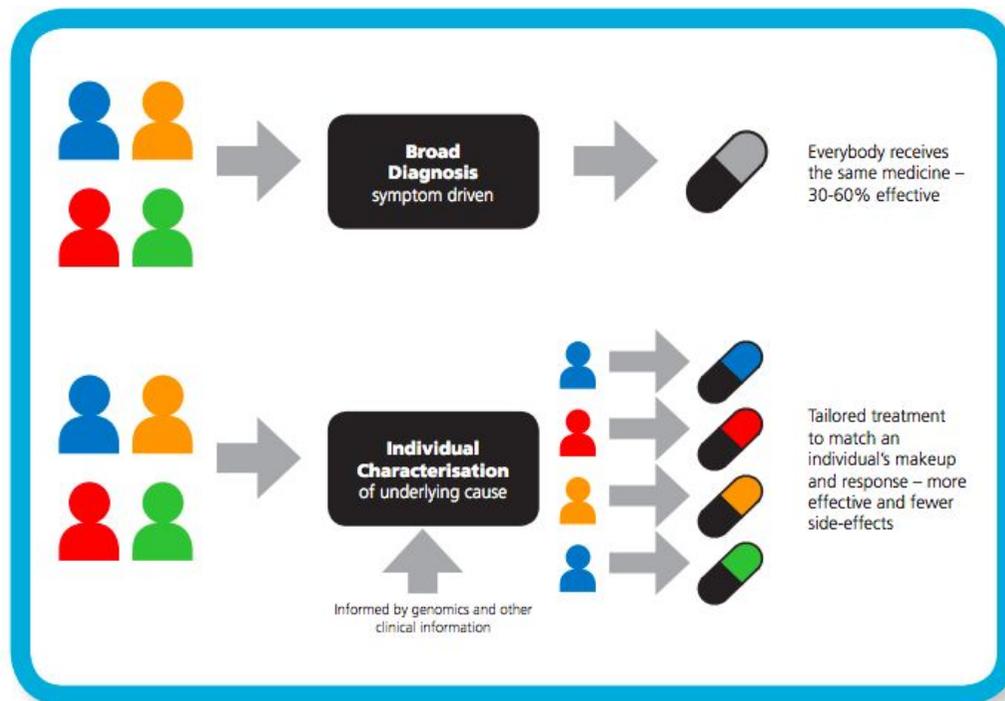
**Sources:**

**The UK: your partner for genomics and personalised medicine**

<https://www.gov.uk/government/publications/the-uk-your-partner-for-genomics-and-personalised-medicine>

# Future of Personalized Medicine

Traditionally, medicine has been built around clinical teams specialising in a particular organ system working back from a patient's symptoms to arrive at a diagnosis. Personalized medicine recognises that complex diseases should no longer be considered as a single entity. One disease may have many different forms, or 'subtypes', resulting from the complex interaction of our biological make-up and the diverse pathological and physiological processes in our bodies. These will not only vary between patients who have the same disease but also within an individual patient as they get older and their body changes. As we integrate and analyze genomic and other data, we can find common factors and causes of variation, resulting in the discovery of new pathways of disease, changing how diseases are treated. It enables us to recognise that the same underlying change in our DNA or genome can lead to problems in very different parts of the body, which would not have been previously identified with a more traditional care approach.



The current blockbuster approach to drug development assumes that all patients with a particular condition respond similarly to a given drug. All patients with the same condition receive the same first line treatment even though it may be only 30 to 60% effective. Personalized medicine will provide opportunities to improve how we treat disease. Based on comprehensive genomic and diagnostic characterisation, different subtypes of patients with a given condition can be identified, and treatment can be tailored to the underlying cause, as illustrated in the figure.

Sources:

<https://www.england.nhs.uk/wp-content/uploads/2016/09/improving-outcomes-personalised-medicine.pdf>

# Future of Personalized Medicine in UK

The UK is by no means alone in its ambitions to reform healthcare to capitalize upon personalized medicine; indeed, it has provoked a proliferation of similar national schemes, notably in the USA where the Precision Medicine Initiative launched last year (and informally dubbed the ‘Million Genomes Project’) aims to recruit a cohort of a million US citizens for research to underpin the delivery of more individualized care.

There are many other efforts to match or exceed the scope of the 100,000 Genomes Project. However, the UK has not only something of a head start, but also a potential advantage in the National Health Service – a gilt edged opportunity to create a seamlessly integrated system and resource for both on-going genomic research and improved clinical care.

So important is the potential of personalized medicine for the UK that a new All-Party Parliamentary Group (APPG) on Personalized Medicine has just formed. Chaired by Jo Churchill, MP, and with a secretariat provided by health policy think-tank the PHG Foundation (formerly Public Health Genetics Unit), the crossbench group of MPs and peers will examine new opportunities offered by genomics, life sciences and digital health technologies for better patient care in the NHS, helping to ensure that the UK makes the most of investment in these areas to maximize the health benefits for the UK population.

Precisely what the personalized medicine of the future will resemble cannot be reliably predicted, but the developments we are already seeing could very well herald the start of truly transformational changes for healthcare.

There are mighty challenges ahead for both science and medicine as they set out to push the boundaries of knowledge, create new solutions to handling big data effectively, and test new paradigms of care, especially in incorporating new areas such as mobile health (mhealth) that could further personalize medical care. No wonder NHS England has referred to the shift towards personalized medicine as “one of the most fundamental changes in NHS history”.

## Sources:

**Philippa Brice. The UK: your partner for genomics and personalised medicine**

<https://www.gov.uk/government/publications/the-uk-your-partner-for-genomics-and-personalised-medicine>

# Future of Personalized Medicine in UK

Technological developments across a range of areas are coming together to provide the necessary ingredients to spread a personalised medicine approach across healthcare. Genomic technologies are an increasingly large part of the evolution of modern medicine and our understanding of genomic implications is growing.

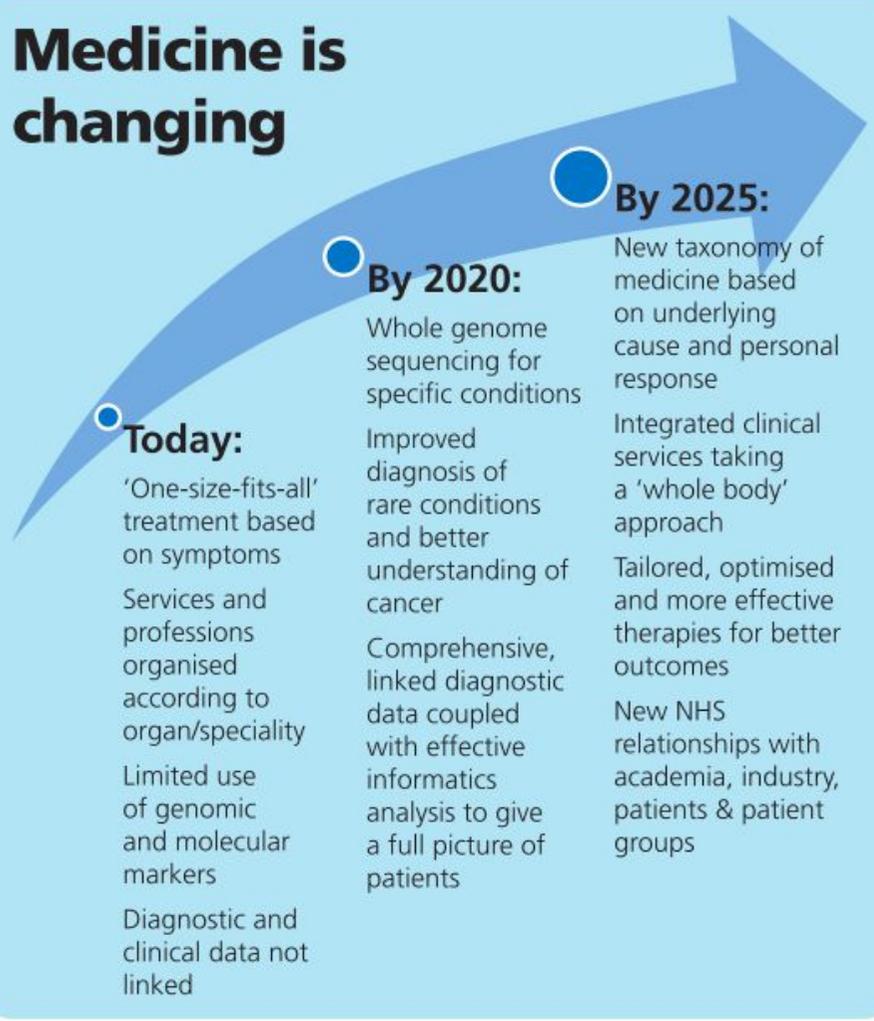
The speed and repertoire of diagnostics more generally is increasing. And informatics advances are making discoveries and connections at an enormous pace. This is the dawn of a new era in medicine that will need to move and evolve at the scale and pace of scientific and technological advances if real improvements for patients and the public are going to be made. The figure sets out the changes we might see in the coming decade. Clinical advice and leadership is vital.

We have been working with the Academy of Medical Sciences to develop exemplar clinical pathways in key priority areas, such as diabetes and cardiovascular disease, where there is a real opportunity to improve outcomes for patients and our population. We will continue to work with the Academy as well as with the Academy of Medical Royal Colleges, its constituent colleges and other professional groups, to build the evidence base and clinical understanding.

## Sources:

<https://www.england.nhs.uk/wp-content/uploads/2016/09/improving-outcomes-personalised-medicine.pdf>

## Medicine is changing



### Today:

- 'One-size-fits-all' treatment based on symptoms
- Services and professions organised according to organ/speciality
- Limited use of genomic and molecular markers
- Diagnostic and clinical data not linked

### By 2020:

- Whole genome sequencing for specific conditions
- Improved diagnosis of rare conditions and better understanding of cancer
- Comprehensive, linked diagnostic data coupled with effective informatics analysis to give a full picture of patients

### By 2025:

- New taxonomy of medicine based on underlying cause and personal response
- Integrated clinical services taking a 'whole body' approach
- Tailored, optimised and more effective therapies for better outcomes
- New NHS relationships with academia, industry, patients & patient groups

# Future of Personalized Medicine in UK

NHS England has established a national network of 13 Genomic Medicine Centres delivering genomic services across the country. Each of the Genomic Medicine Centres is working in partnership with local providers, across populations of 3 to 5 million, to enable:

- patients and family members, with their informed consent, to participate in the project;
- greater patient and public involvement in the dialogue about genomic medicine;
- clinical and diagnostic data to be captured and collated in new datasets that inform the overall interpretation of the genome sequence and its expression;
- new tracking, collection and handling processes for samples, including the introduction of fresh frozen cancer samples for optimal DNA extraction;
- the creation of genomic medicine multi-disciplinary teams for rare diseases and cancer to help analyse what their genetic information means for that patient; and
- shared risk and decision making through new governance and partnership arrangements across the NHS, with active support from the Academic Health Science Networks.

The Project is coordinated by Genomics England, who have procured whole genome sequencing services and analytical providers. They have created a unique database that enables approved researchers, clinicians, and industry to work on de-identified data to enhance clinical interpretation and answer arising research questions.

Knowledge from the Project will enable clinical teams to better characterise an individual's condition, learn from others with the same disease and connect seemingly different conditions with the same underlying genetic cause. Through the project we are laying the foundations for a personalised medicine approach across the NHS. This is not light years away; it is already changing people's lives.

**Sources:**

<https://www.england.nhs.uk/wp-content/uploads/2016/09/improving-outcomes-personalised-medicine.pdf>

# Future of Personalized Medicine in UK

In an article entitled UK report urges action to combat AI bias, Tina Woods of Collider Health writes:

*“The AI Select Committee Report published in April 2017 argues that data held by the NHS could be considered a unique source of value for the nation and that when shared should be done in a manner which allows for that value to be recouped. They recommend that a framework for the sharing of NHS data should be prepared and published by the end of 2018 by NHS England (specifically NHS Digital) and the National Data Guardian for Health and Care, with the support of the Information Commissioner’s Office (ICO) and the clinicians and NHS Trusts which already have experience of such arrangements (such as the Royal Free London and Moorfields Eye Hospital NHS Foundation Trusts), as well as the Caldicott Guardians. This framework should set out clearly the considerations needed when sharing patient data in an appropriately anonymised form, the precautions needed when doing so, and an awareness of the value of that data and how it is used. It must also take account of the need to ensure SME access to NHS data, and ensure that patients are made aware of the use of their data and given the options. The Committee recommends that wherever possible and appropriate, and with regard to its potential commercial value, publicly-held data be made available to AI researchers and developers. Mechanisms for enabling individual data portability, such as the Open Banking initiative, and data sharing concepts such as data trusts, will spur the creation of other innovative and context-appropriate tools, eventually forming a broad spectrum of options between total data openness and total data privacy.”*

**Sources:**

<https://techcrunch.com/2018/04/16/uk-report-urges-action-to-combat-ai-bias/>

# Future of Personalized Medicine in UK

In a recent report written for the government from the life sciences sector, entitled "Life sciences: industrial strategy", John Bell notes that:

*"It is clear that one of the major challenges with healthcare systems over the next twenty years will be to better manage the healthy ageing of a large part of the population. As we move to a setting where almost 30% of the population will be over the age of 65, a wide range of engineering, digital monitoring and technology-based solutions will be required to maintain mobility, allow people to stay at home, and provide much more effective out-of-hospital care. This is the basis for an entirely new industry that could effectively use the NHS and care systems as test beds for products. A more systematic effort to create commercial products could reduce cost and improve outcomes for this population, be it through digital monitoring of disease or mobility, aids for maintaining a safe environment in the home, engineering solutions for mobility, 'smart homes' devices to enhance functionality in the home environment, or aids for people with musculoskeletal disorders. Therefore, there is a significant commercial opportunity; this is primarily an opportunity for digital and engineering medtech companies and could be embedded in the NHS to provide commercial evaluation capabilities. The Life Sciences Strategy recommends the creation of regional Digital Innovation Hubs (expected to roll out early 2018) that support the use of data for research purposes within the legal framework and meet the strict parameters for sharing data and the security standards set out by the National Data Guardian. These Hubs will create controlled environments for real-world clinical studies, the application of novel clinical trial methodology, and the comprehensive evaluation of new innovations so that patients can benefit from scientific breakthroughs much faster."*

**Sources:**

<https://www.gov.uk/government/publications/life-sciences-industrial-strategy>

# The Four 'P's of Personalized Medicine

## 1. **Prediction** and **prevention** of disease

Using genomic technologies and other diagnostics we will be able to identify people most at risk of disease even before the onset of their symptoms. Earlier detection will open up the prospect of new treatment options and support people to make informed lifestyle choices. This will create the potential to reduce the growing burden of disease, particularly for long term conditions such as cardiovascular diseases, cancer, chronic respiratory diseases and diabetes.

## 2. More **precise** diagnoses

Currently a diagnosis is made based on tests and investigations of a patient's symptoms. But whilst two patients might share the same symptoms, the cause of them could be different. Knowledge of each individual's complex molecular and cellular processes, informed by other clinical and diagnostic information, will enable us to fully understand the abnormal function and determine the true cause of the symptoms. This ability to diagnose more precisely can be optimised when coupled with new and improved technologies such as those that provide rapid and real time results and those that can be used at the point of care. Patients and health professionals can make shared decisions about medicines and adjust dosing in real time.

### Sources:

<https://www.england.nhs.uk/wp-content/uploads/2016/09/improving-outcomes-personalised-medicine.pdf>

# The Four 'P's of Personalised Medicine

## 3. Targeted and **personalised** interventions

Personalised medicine offers the opportunity to move away from 'trial-and-error' prescribing to optimal therapy first time round. Currently key pharmaceutical interventions are effective in only 30-60% of patients due to differences in the way an individual responds to and metabolises medicines. Knowledge of the genetic variants responsible for individual drug response can be used to create an individual's 'pharmacogenomic' profile, identifying optimal treatment. We are already beginning to see the development of simple point of care tests, based on genomic knowledge, which enable clinicians in a wide variety of settings to identify the best therapy. This marks the beginning of an end to the frustrating and costly practice of 'trial-and-error' prescribing. The development and regulatory approval of so called companion diagnostics - a diagnostic test, device or imaging tool used as a companion to a therapeutic drug - is already making this a reality.

## 4. A more **participatory** role for patients

The ability for a clinician to discuss with their patients information about individual genomic characteristics, lifestyle and environmental factors, and interpret personal data from wearable technology will drive a new type of conversation. They can consider lifestyle changes, and when treatments might not be necessary. It might also lead patients to consider preventative measures when there is high likelihood of a disease developing. This is a new era of medicine and it requires new knowledge amongst professionals, patients and the public to have confidence in using the information available to them.

### Sources:

<https://www.england.nhs.uk/wp-content/uploads/2016/09/improving-outcomes-personalised-medicine.pdf>

# Preventive Medicine in UK

Preventive medicine in UK falls under the remit of the Department of Health, which has a number of umbrella institutions fulfilling this mandate. Its primary responsibilities include 'health protection', 'health improvement,' and 'health inequality' issues. These domains of preventive medicine broadly fall under the remit of Public Health, and indeed, Acheson described Public Health as, "the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society". Preventive public health medicine seeks to set out implementation programs to reduce the burden of disease. It relies on a finite resource of public funding and justifies its expenses through a process of health impact assessment.

It is acknowledged that the Government cannot provide for every possible health intervention and the basis of its monetary allocation is on a utilitarian distributive principle of, '*maximum good for maximum people*'. Indeed, the *Policy Appraisal and Health 1995*, *Saving Lives 1999*, and *Choosing Health 2004* document and elaborate the mandate of Health Impact Assessment as a viable and justified appraisal tool influencing health and more specifically preventative medicine expenditure. This health impact assessment policy has wide ranging effects on all resource aspects of our healthcare and although there is controversy surrounding the implications of these economic appraisal tools, measuring the impact of preventive medicine in the older person is germane for future policy development and allocation of resources.

**Sources:**

Puneet Kakar. Preventive Medicine in the Older Patient: A United Kingdom Perspective. *Int J Prev Med.* 2012 Jun; 3(6): 379–385.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3389434/>

# Industrial Strategy: The Grand Challenges

The Industrial Strategy sets out Grand Challenges to put the UK at the forefront of the industries of the future, ensuring that the UK takes advantage of major global changes, improving people's lives and the country's productivity. The first 4 Grand Challenges are focused on the global trends which will transform our future:



- growing the Artificial Intelligence and data driven economy
- clean growth
- future of mobility
- **ageing society**



**Ageing society:** The UK population is ageing, as it is across the industrialised world. The prospect of longer lives will require people to plan their careers and retirement differently. Ageing populations will create new demands for technologies, products and services, including new care technologies, new housing models and innovative savings products for retirement. The state has an obligation to help older citizens lead independent, fulfilled lives, continuing to contribute to society, must be created an economy which works for everyone, regardless of age.

In support of the Grand Challenge on data and artificial intelligence (AI), a new Centre for Data Ethics and Innovation is being established to enable and ensure safe, ethical and ground-breaking innovation in AI and data-driven technologies. The centre will work with government, regulators and industry, as well as across sectors and applications, to ensure that the UK's regulatory regime fully supports – and removes barriers to – the ethical and innovative use of data and AI. This will lay the foundations for AI adoption which could benefit households across the UK by up to £2,300 per year by 2030, and ensure that the positive impact of these technologies on the UK economy and society can be maximised.

Source: <https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges>;  
<https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future>

# Ministers Announce £300 Million Research Fund To Help Brits Reach 100

Ministers will inject more than £300 million into researching old age in order to support the ageing population. They say *“we need to ‘revolutionise’ the way people get older – ensuring they remain healthy and independent for longer.”*

The funding will support a research hub looking at dementia as well as a major project looking at the prevention and treatment of disease, involving more than 500,000 patients. Under the plans set out by Mr Greg Clark, a £210 million competitive fund will be established to invest in the development of innovative diagnostic tools, medical products and treatments.



It will include the creation of a series of regional centres across the UK to improve the diagnosis of patients using technologies such as artificial intelligence. A further £98 million will be invested in a healthy ageing programme to develop products and services to help people to live in their homes for longer. In addition, £40 million will go to the UK Dementia Research Institute, in partnership with University College London, to create a hub in which 350 leading scientists will research treatments for the condition.

An estimated 850,000 people in UK are living with the disease.

Care minister Caroline Dinenage added: *“As a society we are living longer – a child born today can expect to live to 100 years – but now we must seize the opportunity to improve the quality of lives lived longer.”*

The state pension age for men and women will rise to 66 by 2020, and Government actuaries believe it will reach 70 in the 2050s and 71 in the 2060s.

Source: <http://www.dailymail.co.uk/health/article-5489127/Ministers-announce-research-fund-help-ten-million-Brits-reach-100.html>

# Health and Treatment Optimisation

The CHHP Health optimisation programmes joins the best in medicine and applied physiology to achieve better health and treatment outcomes and sustain the highest possible quality of life.

The team of specialists work intensively, yet flexibly with the patient to rapidly and measurably reach the goals: improving health outcomes, minimising disease risks and ageing processes, optimising physical or cognitive capabilities, or maximising 'effective longevity'.

At CHHP the team delivers 'multidisciplinary care' to ensure the very best opinions and access to the most advanced treatment under one roof.

The internationally recognised team of specialists come from across the medical specialties including: cardiology; respiratory; weight management and metabolism (including diabetes); oncology; orthopaedics; and clinical and nutrition.

The CHHP Executive package is supported by Specialist Physiotherapists, Physiologists, Sports Scientists, Nutritionists and Cardiologists, who will help to identify how executives can improve their overall levels of health and fitness and translate this into their busy lives.

The CHHP Executive package analyses sleep quality, heart health, how the body copes with pressure and travel, along with body composition, to enable corporate executives to understand their health numbers and how to enhance their personal performance and productivity.



Source: <http://www.chhp.com/health-treatment-optimisation>

# UK and Israel Collaboration on Aging Process

The UK has launched a new £5m fund to promote scientific collaboration and research between Israel and the UK into the aging process and its effect on human health. The new fund, called Britain Israel Research and Academic Exchange (BIRAX) Ageing, will also promote research that into aging-related diseases such as Parkinson's, Alzheimer's, heart disease, multiple sclerosis and diabetes, which afflict millions of people worldwide. The initiative creates a community of British and Israeli researchers and academics, fosters new ties between universities and supports scientific research into urgent global healthcare issues.



The call will focus on two broad themes: research into the impact of aging processes on human health and studies that use precision medicine and big data to identify biomarkers, algorithms and computational techniques to help prevent the harmful effects associated with aging.

in UK, 18% of the population is over 65 years of age. Israel's elderly population is expected to reach 14.3% by 2040, and elderly populations worldwide are set to double in the next 30 years.

Focusing on early stage collaboration, the existing BIRAX program has so far brought together more than 1,000 scientists, including PhD and postdoctoral students, from 120 institutions, and resulted in breakthrough research published in 30 leading scientific publications. The program is a joint initiative of the British Council, the UK Science and Innovation network (SIN), the British Embassy in Israel, the Pears Foundation and the United Jewish Israel Appeal.

Source: <https://www.timesofisrael.com/uk-sets-up-5m-fund-for-collaboration-with-israel-on-aging-process/>

# Convergence of UK Silver Tsunami and Longevity Science

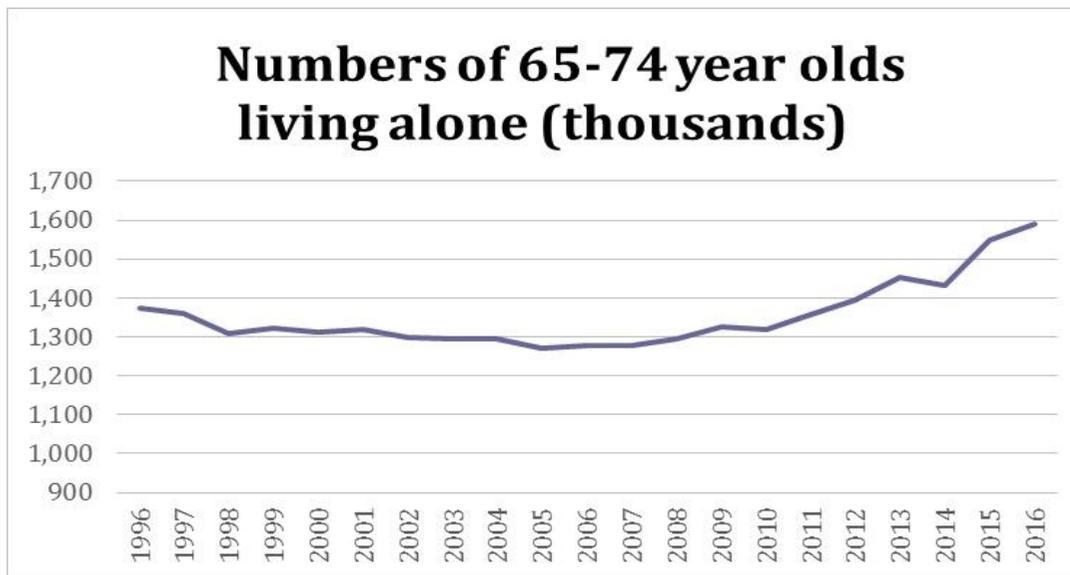
"There is about £2.2bn spent on pathology services in the NHS. You may be able to reduce that by 50%. AI may be the thing that saves the NHS," he said.

The system will save billions of pounds by enabling the diseases to be picked up much earlier.

Taking this example and applying it more generally to a wider array of diseases, the NHS could create significant cost savings by better diagnosing and treating patients with the assistance of machine vision of X-rays, MRIs, cell culture results, epidemiological data crunching, and so forth.

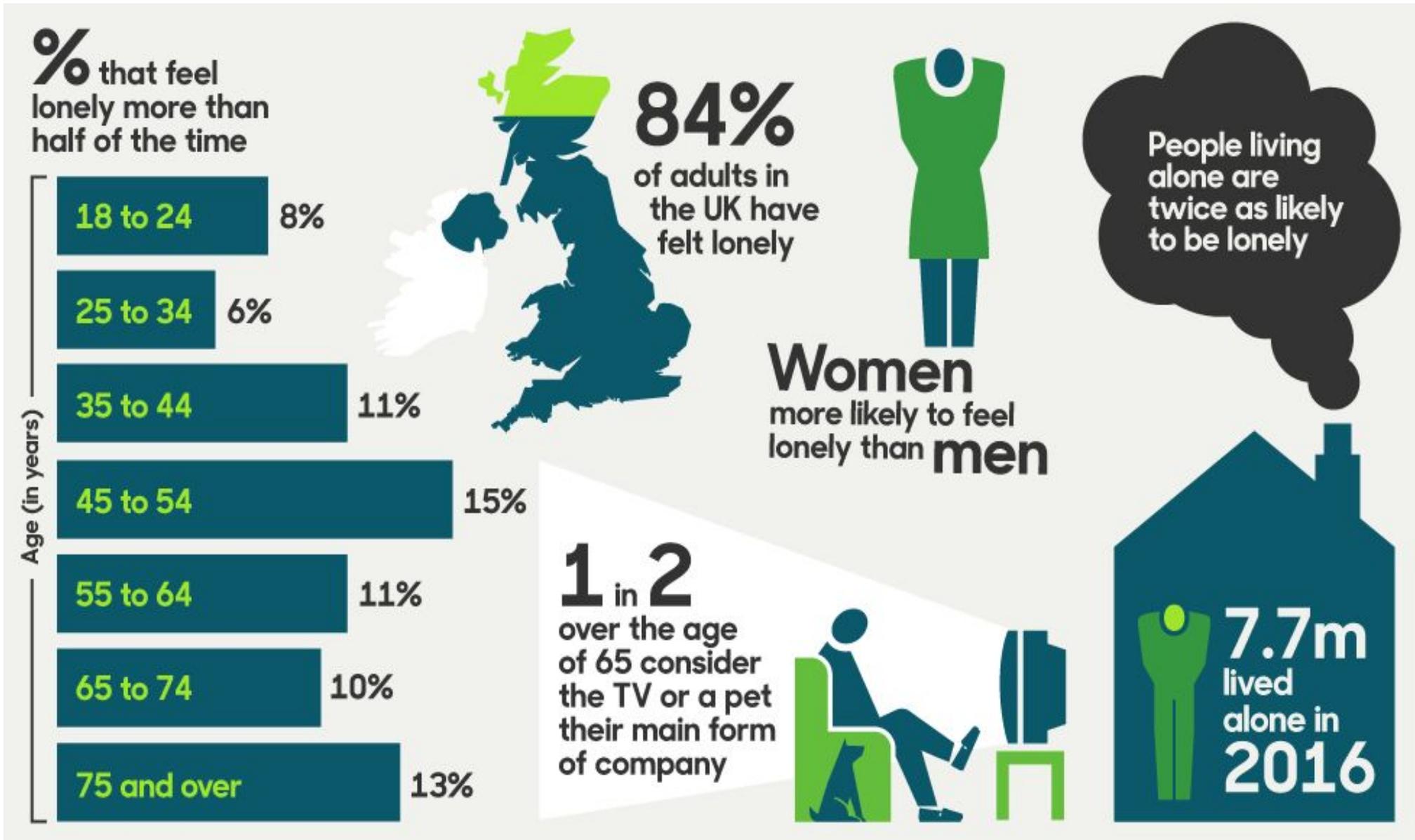
A lot of work is currently done by expensive, error-prone humans that need not be.

*Nick Ackland (UK) lost his forearm in an accident and has been testing an advanced bionic arm and hand that is so precise he can use a keyboard*



Source: <http://blog.ilcuk.org.uk/2017/08/02/social-crises-housing-isolation-and-an-ageing-population/>





<http://www.bbc.co.uk/guides/ztjj2p3>

So while the UK has some of the problems of ageing at the highest level in terms of loneliness, disease and disability, it also houses the most promising research and development to counteract these issues sooner rather than later.

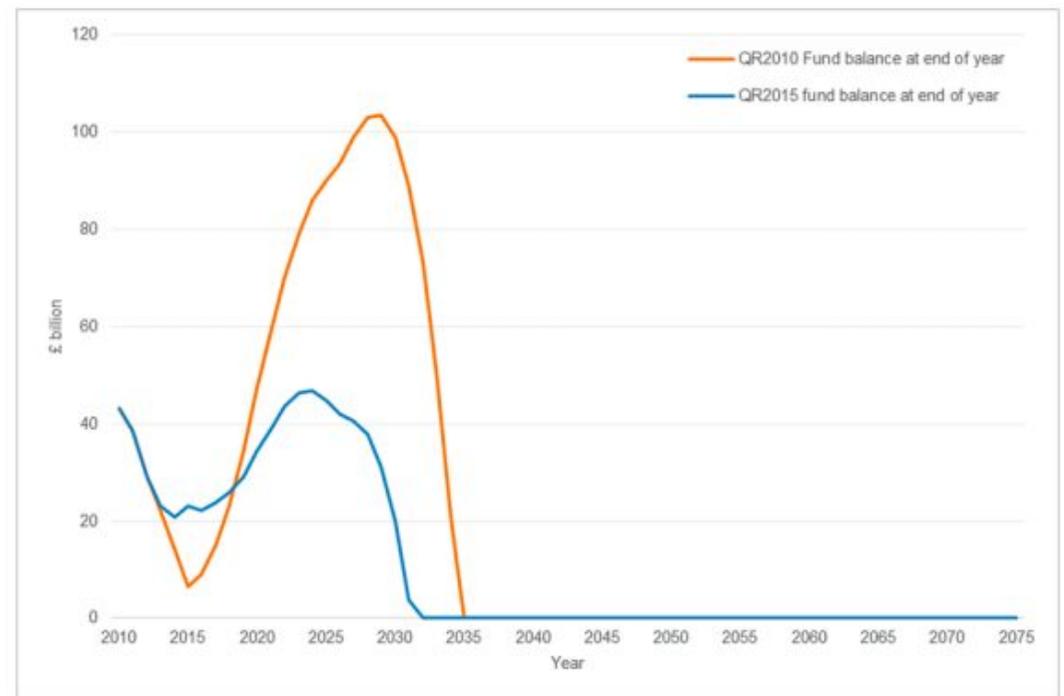
# National Insurance Fund

“National insurance contributions made by employers and workers will need to rise by billions of pounds to sustain the state pension, under projections from the government actuary.” states Josephine Cumbo, Pensions Correspondent.

Two reports on NIF published in 2010 and 2015 gave a very unoptimistic predictions about the future if the Fund. As can be seen on the picture, it is predicted that Fund will be a bankrupt by 2035.

The slower projected increase in the Fund largely reflects changes in assumptions relating to earnings growth. Specifically:

- This review assumes lower earnings increases (of around 1% pa) for the three years 2016-17 to 2018-19;
- The period of lower short-term earnings growth is assumed to continue for an additional three years, to 2021-22, for this review;
- This review assumes lower long-term earnings growth (down from 4.45% pa to 4.30% pa).



Source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/653374/QR\\_2017\\_report\\_Oct\\_2017.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/653374/QR_2017_report_Oct_2017.pdf)  
<https://www.ft.com/content/dc16d7b4-f51f-11e7-88f7-5465a6ce1a00>

# Innovation Warehouse & the AgeTech & Longevity Hub

Innovation Warehouse was founded in 2010 as a community for digital high-growth start-ups in London.

The idea was brought to life by a group of entrepreneurs and angel investors with significant experience and a proven track record of working with start-ups.

Every day, over 200 entrepreneurs, angels and mentors work together from their Smithfield coworking location.

In 2018, Innovation Warehouse established London's AgeTech & Longevity Hub, providing mentoring and corporate finance services to early-stage technology companies in these fast-developing sectors.

They believe that one of the most important fields of innovation and endeavour is to work to extend healthier lifespans and maintain quality of life for our growing, ageing population. They seek a present where people age better and live longer independently.



**BECOME PART OF OUR  
EMERGING AGETECH &  
LONGEVITY HUB**

Innovation Warehouse has established London's AgeTech & Longevity Hub, providing mentoring and corporate finance services to early-stage technology companies in these fast-developing sectors. We believe that one of the most important fields of innovation and endeavour is to work to extend healthier lifespans and maintain quality of life for our growing, ageing population.

# Innovation Warehouse & the AgeTech & Longevity Hub

Innovation Warehouse's AgeTech & Longevity Hub is a start-up incubator and accelerator focusing on early-stage investment in digital technology companies that target societal ageing as the main problem they wish to confront. Their typical investment size ranges from £150k - £500k.

[ABOUT US](#)[COWORKING AND OFFICES](#)[STARTUP GROWTH](#)[INVESTMENT](#)[LONDON AGETECH & LONGEVITY HUB](#)[EVENTS](#)[INNOVATION NEWS](#)

We want to meet early stage technology companies with commercial propositions addressing the following opportunities:

- Commercial businesses with an ageing component
- The Silver Economy – providing services for the 'wants' of the older demographic
- Supporting independent living – addressing the 'needs' of the older demographic
- Longevity – extending healthy lifespans
- Geroscience

AI, Genomics, IoT, Data, Robotics, FinTech, E-Commerce, Ageless Design, HealthTech, Wearables – all have a part to play.

Through our partnerships with organisations such as [Aging 2.0](#), academic, commercial and medical bodies, as well as our network of active investors we are able to assist early stage businesses breaking into in this new and exciting sector.

Early stage digital technology companies

Typical investment sizes range between £150k – £500k

Speak to us, work here with us, pitch to us...

[APPLY TO PITCH](#)

# Charles Alessi's Speech at Aging 2.0

Dr Charles Alessi has recently joined HIMSS as the organisation's first Chief Clinical Officer, bringing a wealth of knowledge and expertise in all aspects of clinical practice. He will also be continuing in his current role as Senior Advisor and Lead for Preventable Dementia with Public Health England, an executive agency sponsored by the UK Government's Department of Health and Social Care, aiming to address health inequalities and improve wellbeing.



Charles Alessi

Aging2.0's Grand Challenges is a new global initiative to drive collaboration around the biggest challenges and opportunities in aging.

The event took place on 14 March, at the London Chapter, where Dr. Charles Alessi provided an "Introduction to Public Health England's Productive Healthy Ageing framework".

## **Workplace - healthy productive ageing:**

- Percentage of people who are 65+ in work now are 10.4% up from 6.6% of the workforce (1992);
- Older people are as productive as younger ones as they have more appreciation of nuance;
- If everyone worked for a year longer, GDP would increase by 1%; People do not yet appreciate that work has benefits other than economic ones, and is generally beneficial for mental health and social wellbeing;
- Increasing pensionable age is essentially sensitive, it will increase healthy life years.
- Using measure of Dependency not Multimorbidity - Care Free Life Years (CFLY) for people with significant multimorbidity (More than 4 LTCs) or those approaching end of life

Source: <https://www.aging2.com/events/details/aging-20-london-presents-london-grand-challenges-launch-event>

# Charles Alessi's Speech at Aging 2.0

## Metrics to drive Health and Care System:

- Years in Work (YIW) ratios for people in employment (YIW as against expected life work years)
- Using measure of Dependency not Multimorbidity - Care Free Life Years (CFLY) for people with significant multimorbidity (More than 4 LTCs) or those approaching end of life

## Work - Further interventions:

- Managing “Transitions” in Employment (British Armed Forces)
- Instituting effective digital personalised health and wellbeing initiatives for staff
  - Promoting mental health and wellbeing (ROI via reduced presenteeism and absenteeism £2.37 per £1 invested over 1 year)
  - Interventions to prevent stress, depression and anxiety (ROI £2.00 per £1.00 over 2 years)
  - Managing food and nutrition making it easier and more convenient to make healthy choices (Zipongo)
  - Managing musculoskeletal healthcare

# Charles Alessi's Speech at Aging 2.0

## Further interventions to enhance Ageing:

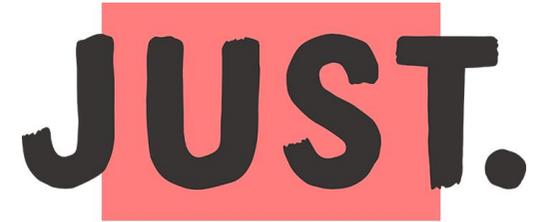
- Managing Social Isolation pays dividends (R.O.I of £1.26 over 5 years on every £1 spent) *Commissioning Effective Interventions 2017 - London School of Economics*
- Promoting Salutogenic approaches (Antonovsky 1946)
- Instituting "Patient Activation" to encourage people to manage their health
- Utilisation

## Workplace - healthy productive ageing:

- Percentage of people who are 65+ in work now are 10.4% up from 6.6% of the workforce (1992)
- Older people are as productive as younger ones as they have more appreciation of nuance
- If everyone worked for a year longer, GDP would increase by 1%
- People do not yet appreciate that work has benefits other than economic ones, and is generally beneficial for mental health and social wellbeing
- Increasing pensionable age is essentially senseless, it will increase healthy life years

# Just Group

Just Group plc is a specialist UK financial services group focussing on attractive segments of the UK retirement income market. The Group is a leading and established provider of retirement income products and services to individuals and corporate clients.



Just has a strong social purpose by providing people with advice, guidance, products and services, helping them achieve security, certainty and peace of mind in later life.

Just Group's strategy includes:

1. Grow the markets and broaden the distribution reach
2. Give customers a distinctly 'Just' experience every time
3. Make smart risk choices
4. Focus on strong financial management
5. Diversify their business away from any single business line or market

On 24th May 2018 Just Group has developed a new business - HUB Pension Solutions - to transform the way trustees, pension scheme members and financial advisers implement and participate in scheme transfer exercises.

**David Cooper, the chief executive of the HUB companies** said:

*"We've transformed the way scheme exercises can now be undertaken. HUB Pension Solutions uses digital technology to radically disrupt the way scheme specific information can be interrogated and delivered to pension scheme members and financial advisers in real time at the click of a button."*

**Sources:** <http://www.justgroupplc.co.uk/about-us/company-overview>

<http://www.justgroupplc.co.uk/~media/Files/J/JRMS-IR/news-doc/2018/Just%20Group%20develops%20new%20business%20-%20HUB%20Pension%20Solutions%2024052018.pdf>

# Innovating for Ageing

*Innovating for Ageing* was launched by Just, with the support of the International Longevity Centre, in January 2018. The project aims to identify solutions to the growing problem of vulnerability in later life by bringing together experts, innovators and groups who work to support vulnerable consumers.



**INNOVATING  
FOR AGEING**

Its objective is to identify and support the development of products and services that will address the challenges faced by ageing consumers at risk of vulnerability due to physical disability, illness, dementia or financial exclusion.

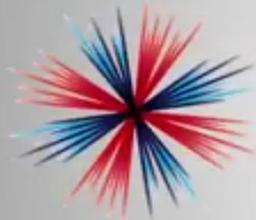
On June 19th 2018 the project will bring together groups with expertise in working with vulnerable people, with experts and innovators who can provide solutions to the problems faced by vulnerable consumers. The world's first vulnerable consumers innovation sprint will help us all better support consumers at risk of vulnerability due to, for example, physical disability, illness, dementia or financial exclusion.

**David Sinclair, Director of ILC-UK**, said he was keen to talk to individuals and organisations interested in participating in the Innovating for Ageing initiative:

*“Our ageing society is a driver for increasing levels of vulnerability – more people with dementia, with sight and hearing loss, and multiple long-term health conditions, for example. This project aims to seek out technological and policy innovations and solutions, with an aim to removing barriers and ultimately rethinking the products and services that are available on the market.”*

**Sources:** <https://www.innovatingforageing.uk/event/19jun18-workshop/>  
[http://www.ilcuk.org.uk/index.php/news/news\\_posts/innovating\\_for\\_ageing\\_just\\_and\\_ilc\\_uk\\_launch\\_new\\_initiative\\_to\\_develop\\_crea](http://www.ilcuk.org.uk/index.php/news/news_posts/innovating_for_ageing_just_and_ilc_uk_launch_new_initiative_to_develop_crea)

# Healthy Ageing Industrial Strategy Challenge Fund



**INDUSTRIAL  
STRATEGY**

UK Research  
and Innovation

**We are investing £98 million...**

The Healthy Ageing Industrial Strategy Challenge Fund £98 million challenge fund to demonstrate innovation that creates economic value at scale and demonstrates the ability to support "years full of life" which match the gift of the extension of peoples' lives.

As interim Director of the Healthy Ageing Industrial Strategy Challenge Fund, Eric Kihlstrom works across industry, Government, 3rd sector and academia to unlock opportunities that come with demographic changes.

**to help us live better,  
for longer.**

# Alcohol Consumption Among Elders in UK

As we get older the amount of water within the body decreases, but alcohol stays in the liver longer and is not metabolised efficiently. Drinking even in small amount for those that are in their 30s, 40s, or 50s may quickly impair a senior's judgement and coordination, leading to falls or other serious injuries.

According to "*Alcohol consumption among the over 50s: international comparisons*" written by Lucy Gell, Petra Meier and Elizabeth Goyder: "In England, higher income is associated with excessive and binge drinking (The NHS Information Centre 2010). Despite declines in alcohol consumption with increasing age, many older adults drink at a level that is considered hazardous or harmful to health. For example in England, 19.3% of adults aged 55-64 years, 14.1% of adults aged 65-74 years, and 10.5% of adults aged 75 years and older were considered hazardous or harmful drinkers when assessed using the Alcohol Use Disorders Identification Test (The NHS Information Centre, 2009)".

In an article titled "*Alcohol misuse in the elderly*" by Dr. E. J. Williams and Dr. P. Medcalf in the GM Journal, it is mentioned that "Alcohol misuse is undeniably a cause of significant morbidity and mortality across all age groups in the UK, with more people dying from alcohol related causes in 2004 than from breast cancer, cervical cancer and MRSA combined. The Royal College of Physicians suggesting 60% of elderly people admitted to hospital with common presentations such as confusion, falls, recurrent chest infections and heart failure may have unrecognised alcohol problems. The estimated annual direct financial cost of alcohol harm alone in 2006 was calculated to be £2,7 billion. A 2009 report still suggests that individuals aged 65 years or over were more likely than any other age group to have drunk on every day of the previous week (22% men, 12% women).

Alcohol can damage nearly every part of the body and can cause: anxiety, dementia, depression, hearing voices, confusion. It increases the risk of cancer and cardiovascular disease. Alcohol is a great health hazard even in small quantities, therefore should be implemented policies and improved services for people whose lives are affected by alcohol-related problems.

**Sources:** <http://eprints.whiterose.ac.uk/82762/8/Alcohol%20consumption%20among%20the%20over%2050s%20-%20international%20comparisons.pdf>  
<https://www.gmjjournal.co.uk/media/21688/june2010p251.pdf>

# Alcohol Consumption Among Elders in UK

The “Drink wise, age well: alcohol use and the over 50s in the UK” report written by George Holley-Moore and Brian Beach, produced by the International Longevity Centre – UK (ILC-UK) states that old people are drinking more now than in the past, the five most frequently reported reasons are: retirement (40%), bereavement (26%), loss of sense of purpose in life (20%), fewer opportunities to socialise (18%) and a change in financial circumstances (18%).

This issue raises many concerns because the UK’s population is rapidly ageing, with over a third of the UK’s population being aged 50 and over. By 2032, the number of people aged 65 and over is predicted to increase by over 40%, and by 2040 almost 1 in 4 people in the country will be 65 and over . If the drinking patterns of older adults in the UK doesn’t change, the percentages of older adults at risk from alcohol-related harm will rise dramatically. In a recent survey, 9 of 10 UK respondents were not worried about their drinking (89%), yet 20% of the sample were at increasing or higher risk of alcohol-related harm. Nearly all (98%) respondents said that they do not need advice for drinking and have not sought it. Higher proportions of respondents from Scotland and Northern Ireland feel their alcohol use has negative consequences compared to the UK average (19% and 20% compared to 16% overall).

There needs to be more awareness amongst health and care professionals about the growing issue of older adults experiencing alcohol-related harm. Additionally, there is a rising need for older adults at risk from alcohol-related harm to be included in any mental health strategies, considering the disproportionate increase of 150% between 2002 and 2012 in alcohol-related mental health problems in the over 60s in England.

Alcohol awareness and actions to prevent alcohol risks must be seriously taken into consideration, also policy makers need to implement strategies to reduce alcohol-related harm. Citizens should be constantly informed about the damages that alcohol brings over their body, mental health and lifestyle.

**Sources:** [http://www.ilcuk.org.uk/images/uploads/publication-pdfs/Drink\\_Wise\\_Age\\_Well\\_-\\_Alcohol\\_Use\\_and\\_the\\_Over\\_50s\\_1.pdf](http://www.ilcuk.org.uk/images/uploads/publication-pdfs/Drink_Wise_Age_Well_-_Alcohol_Use_and_the_Over_50s_1.pdf)

# Aging and Longevity Conferences in UK 2017-2018

- *Greater Manchester Ageing Conference 2017* was held on **16th February** in Manchester organised by the GM Ageing Hub, bringing together a wide range of influential GM leaders, world-leading academics and community sector innovators to discuss prospects for building an age-friendly city-region. The conference also marked GM's five year partnership with the Centre for Ageing Better and its long-term collaboration with the World Health Organisation.
- The Centre for Innovative Ageing at Swansea University hosted the 46th Annual British Society of Gerontology Conference, "*Do Not Go Gentle*" - *Gerontology and a Good Old Age*, from the **5–7th July 2017** in Swansea. BSG welcomed delegates from around the world to celebrate in "The Art of Ageing", shining a light on the innovative and participatory research being conducted to improve the lives of older people across each continent. The annual conference is the crowning jewel where research from around the world is presented to a diverse audience, reflecting both the scope of the research and the membership of the society.
- 15th annual *Anti Ageing Conference London (AACL) 2018* will be held on **11-13th October 2018**. British Society of Anti-Ageing Medicine (BSAAM) aims to provide an opportunity to update delegates with academic, scientific and clinical knowledge as well as facilitating networking with other members of the medical and scientific community worldwide, while providing continuing medical accreditation. BSAAM's AACL 2018 will host international professionals from around the world, including scientists, physicians, gerontologists, health care practitioners, medical centre directors, spa and clinic owners, and those interested and knowledgeable in the field of anti-ageing, preventative health care and complementary medicine to attend these cutting-edge scientific lectures for Continuing Professional Development (CPD) credit and Continuing Medical Education (CME) credit.

Sources: <https://www.micra.manchester.ac.uk/connect/events/gm-ageing-conference-2017/>  
<https://www.antiageingconference.com/>  
<http://www.swansea.ac.uk/bsg17/>

# Aging and Longevity Conferences in UK 2017-2018

- *Innovating for Ageing* was launched by the Just Group and the International Longevity Centre (ILC-UK) in January 2018 to identify solutions to the issues faced by vulnerable consumers in later life. On **19th June 2018** in London will be held the workshop: *Innovating for Ageing – Identifying Solutions for Vulnerable Consumers*. Considering that there is a need for innovation to help us better support consumers at risk of vulnerability due to: physical disability, illness, dementia or financial exclusion, *Innovating for Ageing* provides a platform to do this. The workshop will feature experts in a range of vulnerabilities who will describe the problems that need to be solved. The *Innovating for Ageing* innovation sprint will provide a launchpad for the creation of cutting-edge ideas and solutions to help improve the lives of vulnerable consumers.
- *ISCF Workshop: Consumer Data for Ageing Research* supported by UCL Grand Challenges, Simmons & Simmons and Innovate UK, will take place on **19th June 2018** in London. As part of the Industrial Strategy Challenge Fund (ISCF), the Healthy Ageing challenge will deliver new products and services that support older people in the UK to remain active, productive and independent. The workshop will bring together senior academics in ageing research, data scientists and consumer data organisations to work together on understanding how large consumer data may be used to gain insights into ageing. The purpose of the workshop is to convene potential collaborators and flesh out questions, hypotheses and potential solutions that could be developed for ageing using consumer data.
- On **29th November 2018** in London will take place the 4th annual *Future of Ageing Conference*, which assembles experts from the fields of health, housing, finance and business to identify the challenges and opportunities posed by an ageing society. The conference is expected to be attended by 250 people, including policy-makers; business leaders; charity sector experts; public sector decision makers; local authority staff; academics; and senior journalists.

Sources: <http://www.futureofageing.org.uk/>

[http://www.ilcuk.org.uk/index.php/events/innovating\\_for\\_ageing\\_identifying\\_solutions\\_for\\_vulnerable\\_consumers](http://www.ilcuk.org.uk/index.php/events/innovating_for_ageing_identifying_solutions_for_vulnerable_consumers)

<https://www.eventbrite.co.uk/e/iscf-workshop-consumer-data-for-ageing-research-tickets-45402443932?aff=>

# Life Expectancy in the UK

The Office for National Statistics determined that the UK life expectancy for men is 79.4 years and 83.1 years for women. According to the CIA's rankings, the UK has the 33rd highest expectancy, languishing behind countries like San Marino, Iceland, Switzerland and Israel. The Office for National Statistics shows that by 2041, women will live to 86.2 years and men 83.4 years, a decrease of almost a whole year compared to previous figures released in 2015. Professor Peter Bradley, knowledge and intelligence director at Public Health England, recognised the overall decline in life expectancy, but advised caution in drawing conclusions pending further research.

According to the “*Chapter 1: life expectancy and healthy life expectancy*” research published by the Public Health England on 13 July 2017 “the older a person is, the more likely they are to suffer with chronic conditions such as dementia, diabetes and arthritis”. Danny Dorling, professor of human geography at the University of Oxford, said influenza, obesity, alcohol and smoking could largely be ruled out as contributory factors.

The Times reported that residents in former mining towns and isolated rural areas saw the biggest fall, while London and the southeast continued to see a rise in longevity. Labour MP **Dan Jarvis**, whose Barnsley Central constituency has one of the lowest rates of life expectancy in the country said:

*“The decline in life expectancy in post-industrial areas is an incredibly concerning, if not surprising, development. It is part of a larger inequality between North and South: in employment rates; in levels of public spending; and in education and health outcomes,”*

In November 2017, an article in the British Medical Journal Open found that severe public spending cuts in the UK were associated with 120,000 deaths between 2010 and 2017.

**Sources:** <https://www.gov.uk/government/publications/health-profile-for-england/chapter-1-life-expectancy-and-healthy-life-expectancy>  
<https://www.independent.co.uk/news/uk/home-news/life-expectancy-uk-plumments-ons-data-hartlepool-torridge-amber-valley-barnsley-a8164171.html>

# Tina Woods

Tina Woods founded Collider Health, which is focused on health transformation and the creation of ecosystems with the right mix of organisations and people to drive meaningful change and impact. She supports startups and works with corporations to help them partner with and invest in startup businesses, and to develop new products and services through collaborating with leading edge players, for example in blockchain technology and artificial intelligence.

Woods has many years of experience working with pharma and medical devices and more recently has started to work increasingly with clients in insurance, pensions and banking in new areas and ventures, particularly in private health and innovative businesses in the ageing space.

She is currently helping the NHS build their Artificial Intelligence ecosystem, supporting Innovate UK with consortia development for the UK Healthy Ageing Grand Challenge, designing the European Diversity Award for leading insurer AXA Health Tech & You programme, and a number of other projects.

She has extensive connections and networks with the innovation community: Woods is a strategic partner with D/SRUPTION and writes regularly for them. She also has a particular interest innovation in the ageing space, and work regularly with a number of networks, including Aging 2.0, who are a partner of the Future Health Collective.

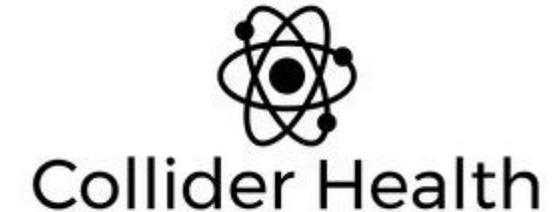
Before setting up Collider Health, Woods was Head of new startup Lansons Health and prior to that, was Deputy MD (Medical Education) and Global Client Leader for Ogilvy Healthworld, leading teams and developing business for major global pharmaceutical accounts (+£1 million). She has been involved in a number of transformational change projects for pharma to help them become more patient centric.



**Tina Woods**  
Founder & CEO, Collider  
Health Chair, Future Health  
Collective

# Collider Health

Collider Health is a health innovation engine connecting people and organisations in imaginative ways to think and act differently. The team builds collaborative networks to help corporates, start-ups, third sector and investors form strategic partnerships and facilitate smart investment for a long term bringing sustainable impact.



Collider Health is led by Tina Woods, who has worked in health education and communications for over 20 years and is a leader in the growing army of people who recognise big changes can come from very small places.

Collider Health has experience working with pharma, biotech, private health and insurance, professional services, healthcare SMEs, charities and start-ups. The team is composed of specialists in the fast moving area of health technology, and has established relationships with leading incubators, accelerators, digital health evangelists, innovators and tech corporates. Collider Health is advising investors on their portfolios of technologies and businesses in blockchain technology and artificial intelligence.

Future Health Collective is a multi-disciplinary, cross-sector group geared to foster collaboration and radical innovation in areas of unmet need in health and social care with a vision to create better lives for people. The first theme was on 'data that matters' in a digital economy. A round table was held on 17th November, 2017 hosted by the Government Office for Science, and with the support of the partners Auriens, Aging 2.0, Future Care Capital, Partnership for Change and Kent, Surrey & Sussex Academic Health Science Network (KSS AHSN), involved senior leaders from the NHS, social care, third sector, industry, technology and policy to explore specific opportunities and barriers of using data to underpin new, person-centric and outcome- focused models of health and care.

Sources: <https://www.colliderhealth.com/>  
<https://www.colliderhealth.com/future-health-collective/>

# Collider Health

Collider Health is working with **Innovate UK** to develop a strategic ecosystem for the Industrial Strategy Challenge Fund - Healthy Ageing (£98 million), to help corporates, startups, third sector and investors form strategic partnerships and facilitate smart investment for long term, sustainable impact. A key requirement is to encourage companies from diverse industries including energy, financial services, insurance, pensions, property, retail, banks and telcos to collaborate- and develop more radical ideas for a marketplace for consumer products and services 'that care' and which appeal to the aspirations and needs of the growing ageing community.

Collider Health worked with **Imperial College Department of Computing** to host a public event on 26 January 2018 on '*Ethics in Artificial Intelligence (AI)*'. The event debated social and ethical implications of AI, what the world will look like in the next ten years and how we can make sure it goes in a positive direction for the sake of our citizens and humanity in general. Chaired by Ian Sample, Science Editor of the Guardian, the event involved experts in AI, ethics, philosophy, theology and public policy.

Collider Health partnered with **Opinium Research** and their latest collaboration "*Data Powered Health- How Technology is Reshaping the Nation's Attitude to Health*" provides the latest insight into the public's appetite for embracing technology, trends in consumer adoption of health apps, and attitudes towards data sharing and health ownership. This report shows how thinking has moved on since the publication in 2015 of *People Powered Health- Engaging Citizens in the Future of Health and Technological Innovation*.

Source: <https://www.colliderhealth.com/projects/>

Healthy Ageing Industrial Strategy  
Challenge Fund

Innovate UK

