

# Healthy Ageing:

Solutions to a global challenge



  
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BRITAIN & NORTHERN IRELAND

# Our partners

Meet our pioneering partners from around the world

## AAL Austria

AAL AUSTRIA is a national innovation platform that aims to foster the communication and collaboration among stakeholders for a successful implementation of digital innovation for active ageing.

## AARP

AARP is a US-based nonprofit, nonpartisan organization with nearly 38 million members and a mission to empower people to choose how they live as they age. AARP strengthens communities and advocates for health security, financial resilience, and social connection.

## DHI

DHI collaborates with civic, academic and industry sectors and is partnered with Strathclyde University and GSA. DHI is funded by SFC.\*

## ILC

The ILC is the UK's specialist think tank on the impact of longevity on society, and what happens next.

## INTEX

Taken independent in July 2016, Shanghai Intex Exhibition (Co., Ltd.) was originally founded in 1995 as the pioneering exhibition organizing business of Intex Shanghai, the venue management business running the first international exhibition centre in Shanghai.

## Ministry of Health Singapore

MOH is an innovative, people-centred organisation, committed to medical excellence, the promotion of good health, the reduction of illness and access to good and affordable healthcare for all Singaporeans, appropriate to their needs.

## NICA

World-leading NICA helps co-develop and bring to market products and services to help us all live better, for longer.

## ORPEA

ORPEA is a leading worldwide player in care and living pathways for vulnerable people consisting of post-acute and rehabilitation hospitals, mental health hospitals, nursing homes, assisted-living facilities and care and services directly to customers' homes. The Group also provides prevention and therapeutic health education programmes.

## Silver Valley

Silver Valley aims to boost the development of innovations meeting the elder's uses to favor ageing better, economic growth, and employment.

## UK Research and Innovation (UKRI)

UKRI supports world-leading research and innovation to push the frontiers of human knowledge and generate social, cultural and economic impact.



\*The Digital Health & Care Innovation Centre

\*Scottish Funding council

\*Glasgow school of Art

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## SECTION ONE

# An overview

For the first time in human history, the majority of us can expect to live to 60 and beyond.<sup>1</sup>

## Healthy ageing

The global population is continuing to age, with the pace of ageing increasing rapidly. In 2019, the United Nations' World Population Prospects report projected that by 2030, the number of people aged 60 and over will rise by 38 per cent, from 1 billion to 1.4 billion. Globally, this age group will outnumber youth, and the increase will be greatest and fastest in the developing world.<sup>2</sup>

Our longer life spans, while positive in many ways, bring challenges. Although population ageing is expected, the UN has warned that many countries' health systems are not prepared for the challenges associated with it. In December 2020, the United Nations General Assembly declared 2021-2030 the Decade of Healthy Ageing, aligned with the last ten years of the Sustainable Development Goals, in order to highlight some of these challenges, and to find ways to improve the experience of older age. It identified health as key for allowing us to make the most of the opportunities that longer life brings.



By 2030, the number of people aged 60 and over will rise by 38 per cent.

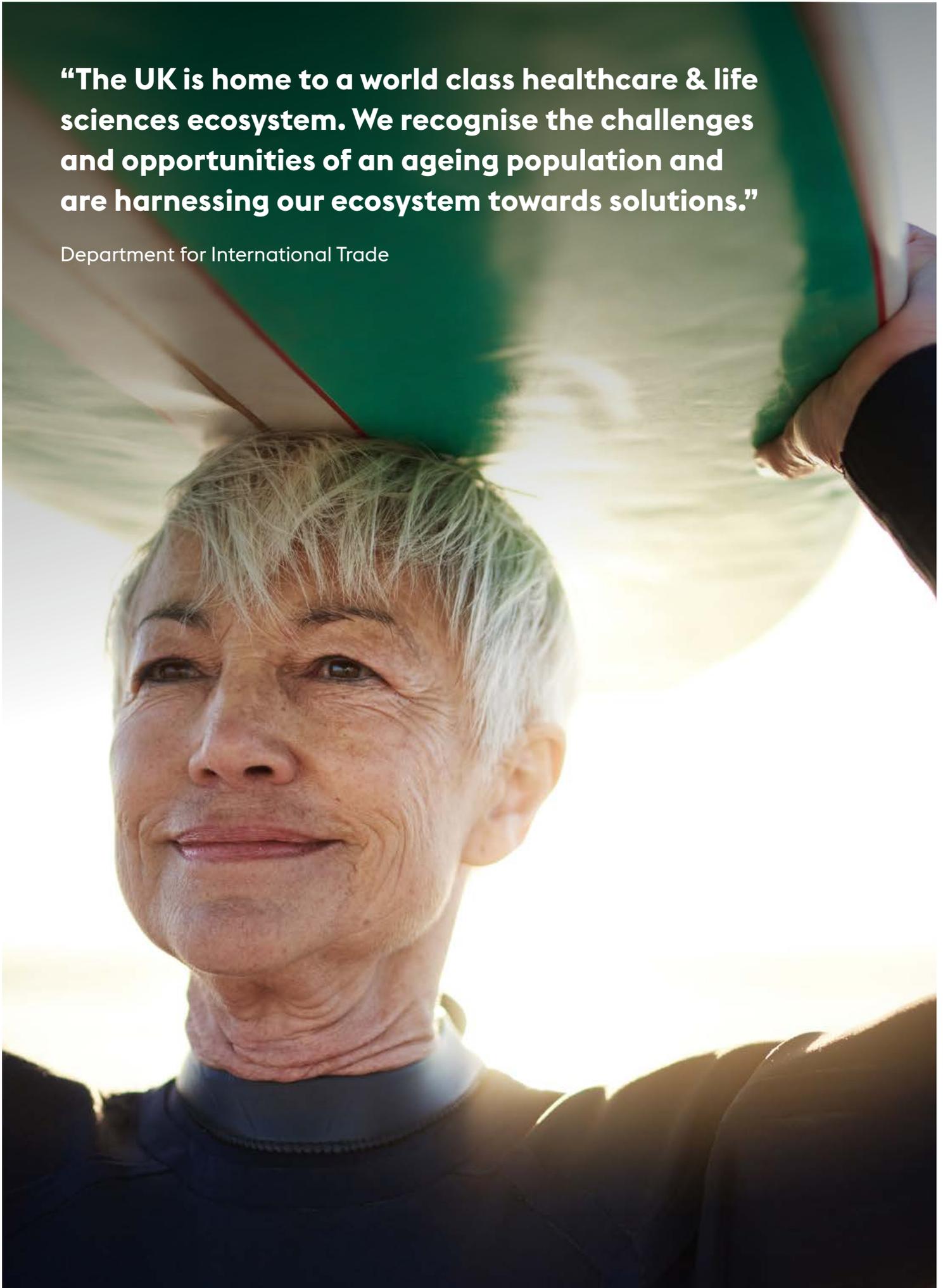
In 2020, the United Nations General Assembly declared 2021-2030 the Decade of Healthy Ageing.

1. WHO. Ageing and Health (2018)

2. UN General Assembly. Resolution 75/131 United Nations Decade of Healthy Ageing (2021-2030)

**“The UK is home to a world class healthcare & life sciences ecosystem. We recognise the challenges and opportunities of an ageing population and are harnessing our ecosystem towards solutions.”**

Department for International Trade



## The aims of the UN decade of healthy ageing

The initiatives will seek to transform the experience of ageing:



Change how we think, feel and behave towards age and ageing



Support older people to contribute fully to their communities and society



Deliver integrated care and primary health services that are responsive to the older people's needs



Provide access to long-term care for older people who need it

## Global population ageing in numbers

In the UK, we've been living with an ageing population for some decades so we understand the challenges. If people can be supported to lead active, healthy lives, old age doesn't have to be a difficult and burdensome time. Fostering active and healthy ageing with a focus on self-care, can help to take the burden off health systems, while allowing older people to continue enjoying life and making many important contributions to their families, communities and societies.<sup>3</sup>

# 2 billion

There will be 2 billion over-60s by 2050, meaning 22 per cent of the world's population will fall into this age group, up from 12 per cent in 2015.

# 125 million

Today, there are 125 million people in the world aged over 80. By 2050, it's projected that there will be 120 million over-80s in China alone.

# 60 & older

There are already more people aged 60 and older than there are children under the age of 5.

# 434 million

There will be 434 million over-80s worldwide by 2050.<sup>4</sup>

# 2050

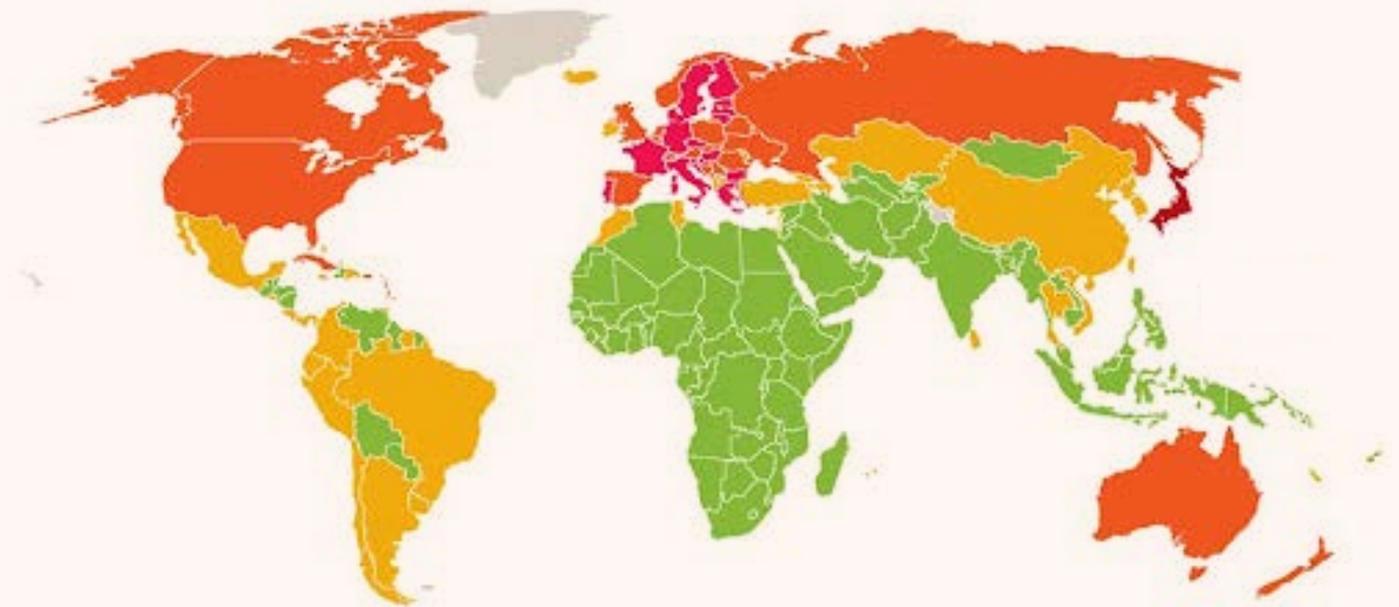
In 2050, 80 per cent of older people will be living in low- and middle-income countries.

3. WHO. Ageing and Health (2018).

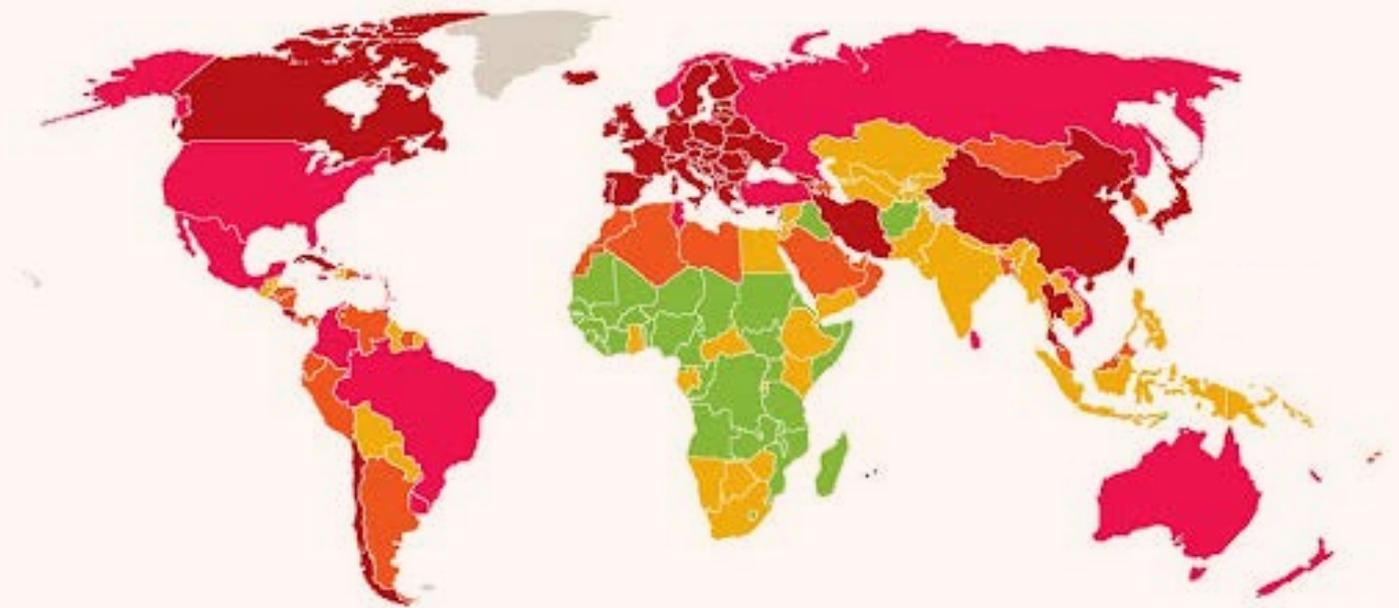
4. WHO. Ageing and Health.

**These maps show the proportion of the population aged 60 or over in 2014 and projections for 2050, demonstrating the speed at which populations are ageing.**

**2015**



**2050**



■ 0-9% ■ 10-19% ■ 20-24% ■ 25-29% ■ 30+% ■ No data

## The challenges defined

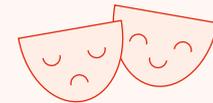
A longer life can bring a wealth of opportunities – not only more time to spend with loved ones, pursuing new career prospects, retraining and following hobbies, but also making important contributions to families, communities and the national economy.

But the ability to grasp these opportunities is largely dependent on health. Unfortunately, despite the fact that more people are living longer, there's little evidence to suggest they are enjoying better health in old age than their parents' generation. While it's important to note there's no such thing as a typical older person, with some living full and active lives into their eighties, many older people around the world are living with chronic conditions. Rates of severe disability in this age group have generally decreased but rates of mild to moderate disability – sufficient to be debilitating in everyday life – have remained the same over time.<sup>5</sup>

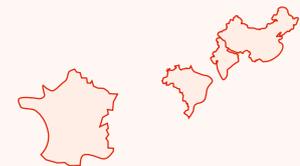
Lots of older people are living with more than one of these conditions at the same time.<sup>6</sup> In addition, they may experience what are known as geriatric syndromes, overall health states not connected to particular diseases. These can include falls, incontinence, delirium and frailty, and tend to be linked with poorer outcomes than specific conditions, yet they're often under-identified and little understood.<sup>7</sup> To add to the complexity of the picture, adverse events as a result of medication are much more common over the age of 65, sometimes resulting in preventable hospitalisations.<sup>8</sup>

Living for extra years hampered by frailty, chronic disease and disability can mean older people don't fulfil their potential at this time, and are less able to contribute to their community. This can have major negative implications for individuals and for wider society. Challenges associated with poor health in older age can also impact health systems. In Europe, for example, declining birth rates and greater life expectancy have led to a lower population of working-age people, which will result in increasingly less income over time to provide for healthcare for older adults. All countries with ageing populations will need to consider these implications, yet evidence suggests they are not prepared.

The pace of change, especially in low and middle income countries, adds to the global challenge. A lower birth rate combined with longer life expectancy has resulted in rapid population ageing. So while France had 150 years to adapt to a doubling in the proportion of its population aged 60 and over, countries including India, China and Brazil are only likely to have around 20 years.



Despite the fact that people are living longer, there is little evidence to suggest that they are enjoying better health in old age.



France has had 150 years to adapt to its ageing population. Countries including India, China and Brazil are only likely to have around 20 years.



5. WHO. Ageing and Health.

6. WHO. Ageing and Health.

7. Inouye SK et al. Geriatric Syndromes: Clinical, Research and Policy Implications of a Core Geriatric Concept J Am Geriatr Soc. 2007 May; 55(5): 780–791.

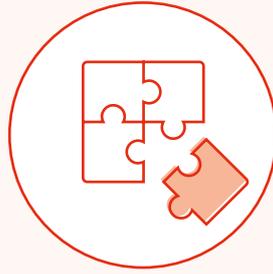
8. Lavan AH and Gallagher P. Predicting risk of adverse drug reactions in older adults. Ther Adv Drug Saf. 2016 Feb; 7(1): 11–22

## Conditions that often affect people in older age



### Diabetes

The risk of type 2 diabetes can rise with age



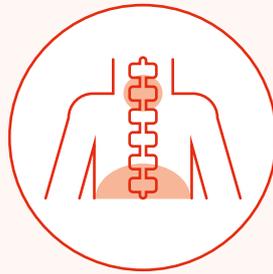
### Dementia

A growing concern as populations age



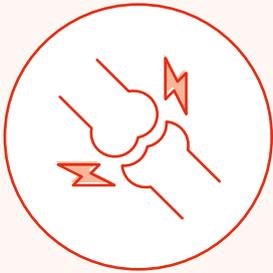
### Hearing & vision loss

These debilitating conditions can impact independent living



### Back & neck pain

Older people may be prone to painful musculoskeletal conditions



### Osteoarthritis

Joint conditions can be burdensome and may worsen with age



### Depression

Social isolation and the death of peers can contribute



### Cardiovascular disease

Age is a risk factor for conditions such as stroke, heart failure and heart attacks



### Cancer

A leading cause of death worldwide, the risk of many forms rises with age



## Covid-19 & ageing

The Covid-19 pandemic has brought a new focus to some of the challenges of ageing. Not only are older people more vulnerable to the virus's most serious effects, the pandemic has exacerbated many other existing issues. These include:

### Lack of digital skills

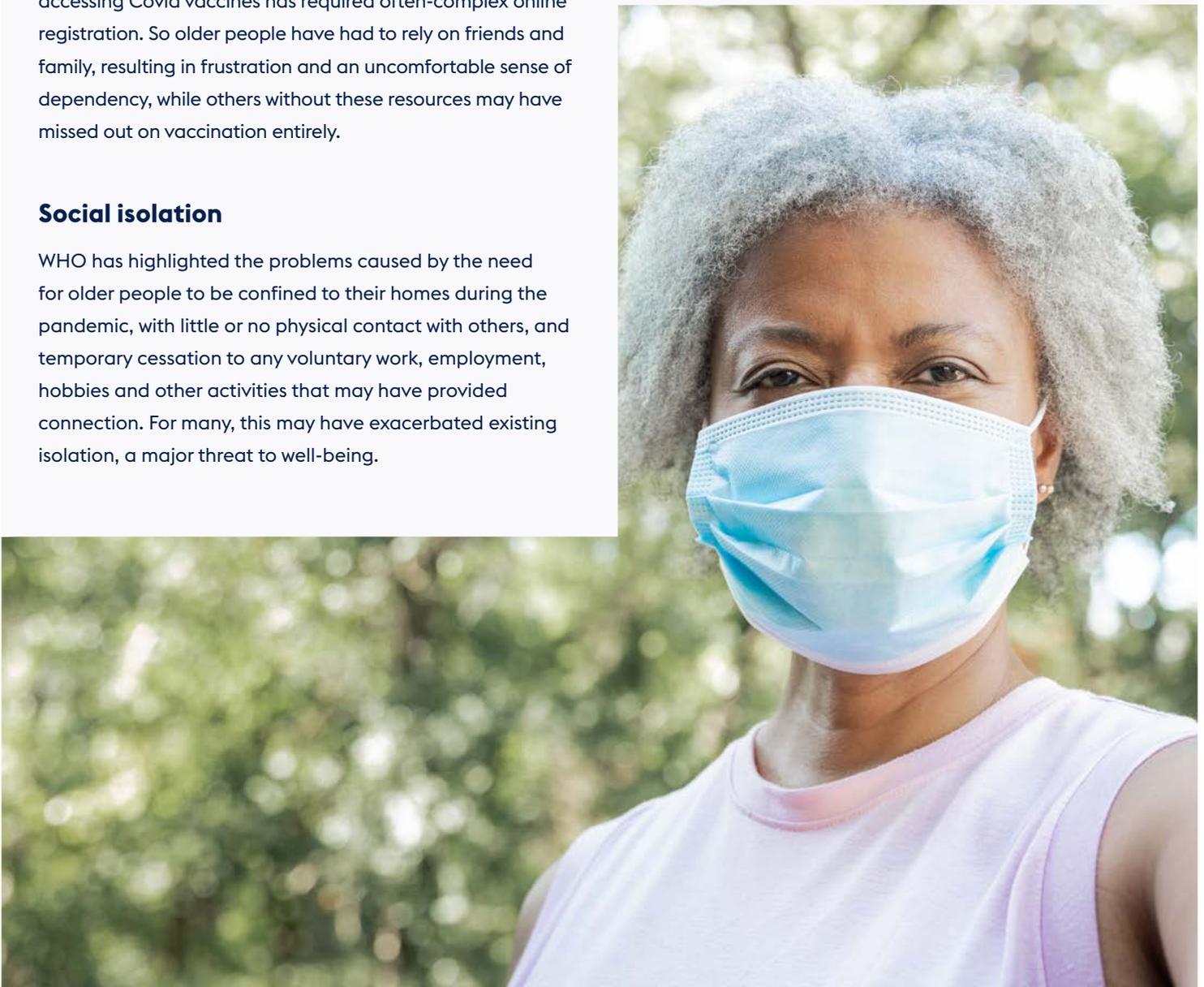
A report by the UK Government's House of Lords Science and Technology Select Committee identified this as a major drawback to the well-being of older adults, brought into sharp focus by the pandemic. While digital skills vary widely, older people are, on the whole, less technologically engaged. This can further deepen isolation and can also have an impact on ability to access healthcare. In the US, for example, accessing Covid vaccines has required often-complex online registration. So older people have had to rely on friends and family, resulting in frustration and an uncomfortable sense of dependency, while others without these resources may have missed out on vaccination entirely.

### Social isolation

WHO has highlighted the problems caused by the need for older people to be confined to their homes during the pandemic, with little or no physical contact with others, and temporary cessation to any voluntary work, employment, hobbies and other activities that may have provided connection. For many, this may have exacerbated existing isolation, a major threat to well-being.

### Inequalities

Socio-economic factors tend to dictate healthy ageing, with some sections of the population already much more likely to have poor health literacy and be less likely to access enabling technologies, and palliative and general healthcare. An assessment by Public Health England found the pandemic had exacerbated existing inequalities.



## Why healthy ageing matters

Ageing is inevitable. What's key is that countries are prepared. That can make all the difference between an ageing population that is largely active, vital and contributing to society, and an ageing population that is frail and burdened with chronic disease and disability.

Evidence suggests that if a country is prepared for its population to age, healthcare expenditure does not have to be significantly higher. For example, having in place the sort of long-term care that keeps people out of hospital can reduce expenditure. Perhaps even more importantly, effective interventions, especially health promotion and disease prevention, can improve the chances of people staying healthy in old age. Not only would this ease any stress on infrastructures, encouraging good health into older age could have numerous other benefits for society as a whole.<sup>9</sup>

There may be additional social and economic benefits to healthy ageing. If younger people know they can expect to spend their older age fit and healthy, they may be more motivated to build skills and extend their working life,

so may contribute to their nation's economy for longer. Furthermore, keeping older people healthy can enable them to continue with any care they provide to others, and to support their community through volunteering.<sup>10,11</sup>

In countries that spend more on health, older people work, volunteer and spend more.<sup>12</sup> In short, fostering healthier older age is positive for individuals, their families, their communities, and nations as a whole.

Improving health and supporting older people's full participation in society could help us challenge stereotypes of ageing, and instead embrace the benefits this age group can bring to their communities. As the global population ages rapidly, this shift could not be more timely.



Countries that spend more on health see people working, volunteering and spending more in old age. This is positive for the individuals, their families, their communities and their nation as a whole.



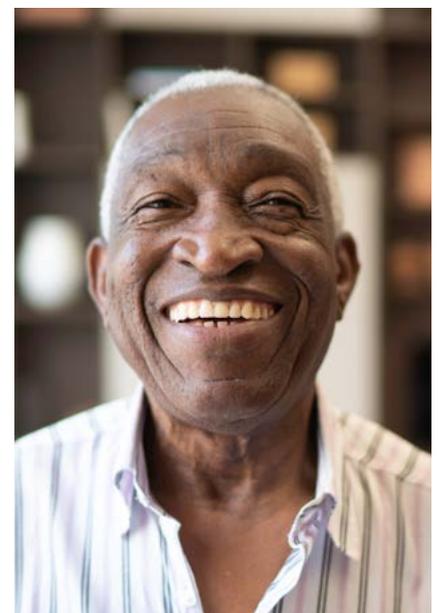
The global population is ageing rapidly, improving health and supporting the older generation could help challenge stereotypes.

## Older people and the UK economy

Older households have dominated consumer spending in the UK since 2013, and this figure is projected to rise to 63 per cent of all spending by 2040.

The top three growing sectors for older consumers are recreation and culture; transport; and household goods and services.

By 2040, the silver economy will be thriving further, with the over-50s predicted to earn 40 per cent of total earnings in the UK.<sup>13</sup>



9. WHO. How can health systems respond to population ageing? 2009  
 10. WHO. How can health systems respond to population ageing? 2009  
 11. International Longevity Centre UK. Why we must invest in healthy ageing.  
 12. International Longevity Centre UK. Why we must invest in healthy ageing  
 13. International Longevity Centre UK. Why we must invest in healthy ageing.

**“All older people must be empowered to promote their active participation where possible in social, economic and political life.”**

Professor Martin Vernon, National Clinical Director for Older People and Person Centred Integrated Care at NHS England



# Discover today's leaders of UK healthcare

The Department for International Trade is active in supporting trade and investment opportunities across the Healthy Ageing pathway.

Find out more about DIT's strategic focus, within each of the four pathway areas, by accessing the Healthy Ageing Export and Foreign Direct Investment Offers.

Email [lifescience@trade.gov.uk](mailto:lifescience@trade.gov.uk) today for more information.



Department for  
International Trade



## SECTION TWO

# The Healthy Ageing pathway

With a population that has grown steadily older from the middle of the 20th century,<sup>14</sup> the UK is well versed in the challenges of an ageing population – and in the dividends older people can bring if healthy ageing and good self-care are supported. The UK has been investing in healthy ageing and as a result, its silver economy is thriving and its ageing population is living longer, financially secure lives. With a government goal to add five more years of healthy life by 2035, while reducing health inequalities, there's a major focus on making older age a time of empowerment and independence.

## Pioneering research

Leading research centres, including the King's Centre for Global Ageing at King's College London have been developing schemes and products to support a flourishing older age. Meanwhile, MSD's London discovery research teams draw on a wealth of expertise to push new scientific boundaries. The UK has also provided international leadership in the ageing agenda, with the International Longevity Centre UK (ILC) provoking discussions and pioneering solutions around the globe.

**KING'S**  
*College*  
**LONDON**

King's College London and other leading research centres have been developing schemes and products to improve the quality of life in old age.

## UK policy is committed to healthy ageing. Here are key examples:

### The NHS Long Term Plan

Launched on the NHS's 70th birthday, the plan has been developed specifically to support people as they get older.

#### It aims to:

- Maximise use of technology, including wearable devices, to help people with long-term conditions manage them and remain independent for longer
- Give people more say about their care and support, empowering them to make decisions, particularly towards the end of life
- Champion a multidisciplinary approach, with healthcare professionals working together to provide holistic, integrated care
- Build more rapid community response teams, supporting people with health issues before they need to seek hospital treatment
- Support those caring for older family members
- Ensure there is more NHS support in care home settings.

### The UK's National Innovation Centre for Ageing

NICA was established by the UK Government and is hosted at Newcastle University. Its unique "Ageing Intelligence" approach helps enable businesses to access relevant research and trend data, as well as deep consumer insights, provided through VOICE – an international network of citizens. The aim is to help businesses co-design and commercialise aspirational products and services needed for people of all ages, throughout the world, to live happier, healthier, longer lives. 'Healthy longevity is a major growth opportunity for business,' says Nic Palmarini, director of NICA. 'There is a global consumer market for imaginative products and services in almost every industry and sector. And a healthy workforce is more productive, so important for business as employers too.' NICA is hosted at the Catalyst Innovation Centre in Newcastle. The building also benefits from a £30M investment from UK Government.

### Life Sciences Vision

In 2021, the Office of Life Sciences launched its Life Sciences Vision, which has ageing as one of the key missions. In particular, it will advance research into the ageing process – not just into conditions associated with older age, but exploring the actual mechanisms underpinning the decline of organs with age. Researchers will investigate common underlying patterns behind chronic conditions typical in older age, which could aid understanding of disease and help identify individuals at risk.

#### The research will explore mechanisms thought to be involved in the ageing process, including:

- Chronic inflammation
- Telomere shortening
- DNA repair
- Insulin-like growth factor (IGF) signalling
- Stem cell regeneration
- Nutritional factors

### The healthy ageing pathway

Drilling down into how populations can be supported in healthy ageing, Healthcare & Life Sciences at DIT has identified some key components that should be in place, devising a pathway to demonstrate expertise across all areas, which revolves around services, solutions and product innovations. Different regions may have more needs at different stages of the pathway.

### UK Research and Innovation (UKRI) Healthy Ageing Challenge

UKRI are investing £98 million to fund innovations in Healthy Ageing. Running a number of programmes, delivering these from 2019 to 2024 / 25, the fund is focused on areas where innovation can have the biggest impact.

The Healthy Ageing Challenge is enabling businesses, including social enterprises, to develop innovations that will support people as they age and can be adopted at scale.



**“The multi-stage lives that we are now all living means that we need a sense of belonging, sense and worth.”**

Julia Randell-Khan, Visiting Scholar at the Stanford Center on Longevity

# The Healthy Ageing pathway

## 1 Health promotion, prevention & self-care

- Adult vaccination
- Digital lifestyle interventions
- Sustaining physical activity
- Social engagement systems
- Smart, age-friendly homes
- Virtual activities
- Remote monitoring
- Creating healthy & active places
- Managing the common complaints of ageing



## 2 Assessment & diagnosis

- Early detection & diagnosis
- Testing & diagnostic devices
- Rapid diagnostic testing



## 3 Treatment & rehabilitation

- Technology enhanced care systems
- MedTech
- Advanced Therapy Treatments
- Drug delivery devices
- Disease monitoring
- Digital rehab (e.g. physio)
- Clinical Management systems
- Living well with cognitive Impairment
- Digital therapies for mental health

## 4 Long-term care

- Self management & education programmes/tools
- Care management systems
- Advanced life planning
- Age friendly homes & care villages
- Healthcare professionals education & training
- Supporting social connections





## 1

## Health promotion, prevention & self-care

Poor health in old age is not a given. While some factors are genetic, and others are connected to earlier environments, many are behavioural. It's well established, for example, that good self-care, including keeping to a healthy weight, eating a balanced diet, staying active, having good social connections and avoiding tobacco can contribute to health throughout life.<sup>15</sup> In addition, maintaining cognitive health is key, given the increasing recognition that depression is common in older, isolated people, and anxiety in those with dementia.

Environmental cues are key to establishing and maintaining healthy behaviour change. Digital innovations can play an important role in this, making it easier than ever before to support behaviours that will promote healthy ageing. Public Health England (PHE) has led in this area with its award-winning Change4Life sugar-smart app, which uses a mobile phone camera to scan food barcodes, and with the hugely successful Couch to 5k app, which helps people go from inactive to running for half an hour.

**“Demographic trajectories are not set in stone, nor are their implications for social, health and economic outcomes.”**

David Bloom, Professor of Economics and Demography at the Harvard School of Public Health, and director of the Program on the Global Demography of Aging



Sport England has placed tackling inactivity at the heart of its strategy, ‘An Active Nation’, and has launched the Active Ageing fund to address inactivity in the over-55s.



The NHS Apps Library helps people find reputable apps that manage their well-being.



11 nationally funded NHS/academic centres around the UK are focused on translational medicine and evidence generation for MedTech including one specifically aimed at supporting ‘devices for dignity’ for those with long term conditions.

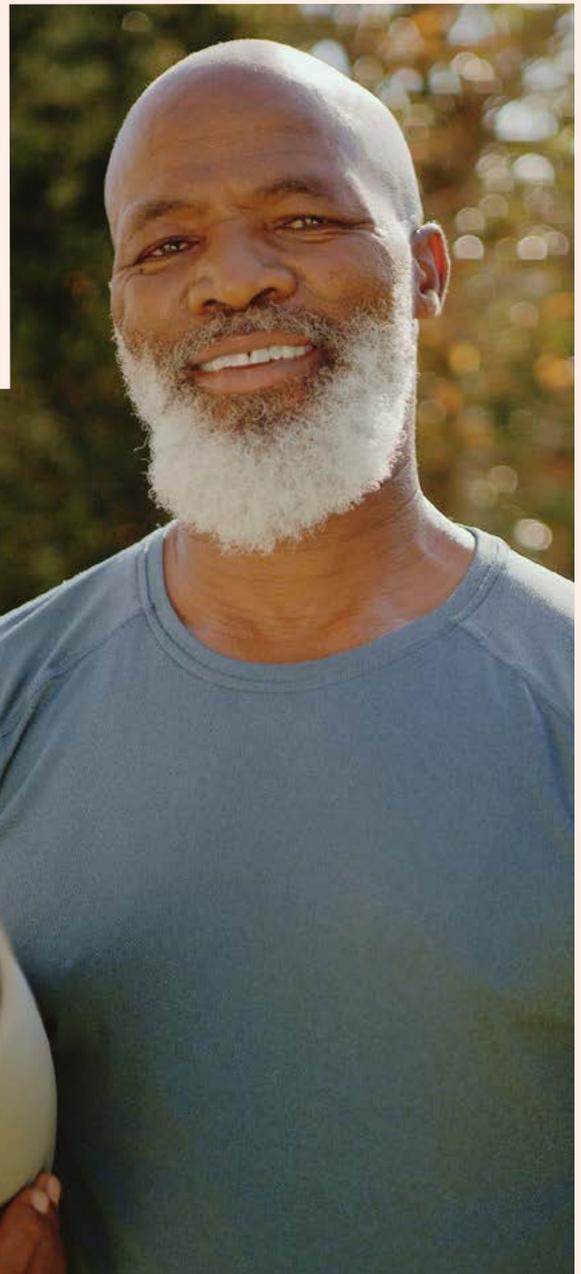
15. WHO. Ageing and Health (2018)

## 1

Some pioneering innovations are aiming to enable smooth collaboration between healthcare professionals and patients. Cognitant helps healthcare professionals to make health information easily accessible for patients. Via its platform, Healthinote, it produces visual and interactive health information in 3D, which is viewable on smartphones, tablets, computers and virtual reality headsets. This platform - [www.healthinote.com](http://www.healthinote.com) - is designed to give people trusted, engaging, personalised health content, helping them to manage their well-being, in partnership with their healthcare team. Meanwhile, Axela's cAir:ID system aims to seamlessly address the work of healthcare professionals with the needs of individuals. It uses AI and remote monitoring to monitor someone's needs, with data that can be accessed via its web or mobile platform, by both patients and healthcare professionals, plugging into other systems such as rostering and payroll.

For the age-related issues that cannot be prevented through lifestyle, such as infectious diseases and common complaints of old age, management is core.

Vaccination has proven to be one of the greatest health interventions, having saved millions of lives and significantly reduced disease, disability and inequity worldwide.<sup>[i],[ii],[iii],[iv]</sup> UK companies such as GSK believe vaccination continues to support healthy and productive societies and is one of the most cost-effective interventions, contributing substantially to improved public health and economic growth.<sup>[v],[vi],[vii]</sup> Adult immunisation programmes are important to reduce morbidity and mortality of vaccine preventable diseases (e.g. shingles, influenza) and co-morbidities typically associated with ageing to compensate for age-related decline in immunity in older adults.



## 2

## Assessment & diagnosis

Certain conditions become more common in older age. These include cardiovascular disease, cancer and dementia. However, research has shown that initiatives on early detection and intervention, with proactive care and support, can help support a healthier old age.<sup>16</sup>

High blood pressure is a classic example. Usually symptomless, if unmanaged, it commonly results in heart disease and stroke, two of the biggest killers of older people. However, when diagnosed early and managed successfully, the picture can be very different.<sup>17</sup>

Integrated health services are often key in early detection<sup>18</sup> and technology being pioneered in the UK can support this. Frailty – a syndrome affecting one in 10 over-65s in the UK, rising to up to half of those aged over 85 – can be challenging to diagnose. The electronic Frailty Index (eFI) is a tool that uses routine GP data to identify older people with different degrees of frailty, so they can be supported in their communities.

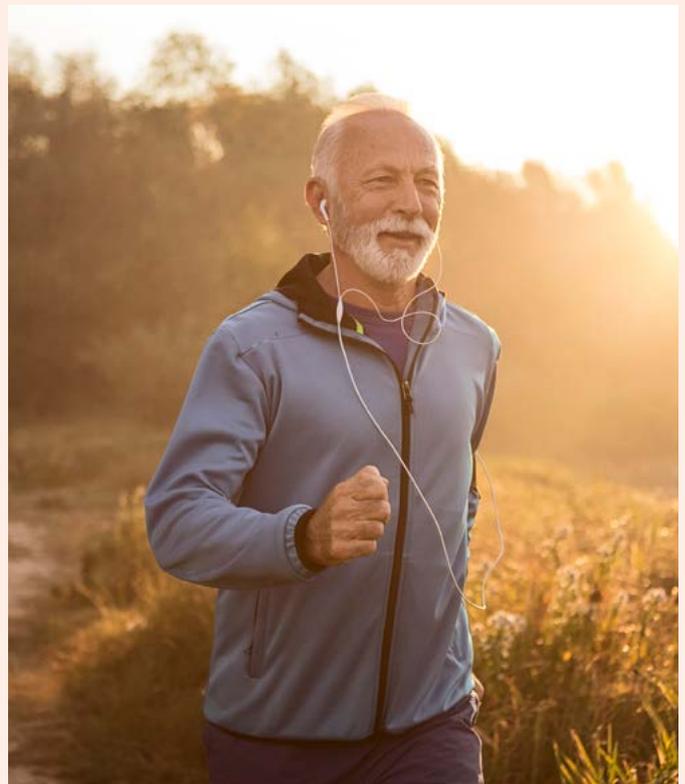
‘In 2017, England became the first country to characterise and systematically identify frailty as a long-term treatable health condition,’ says Dr Martin Vernon, NHS England’s National Clinical Director for Older People and Person-Centred Integrated Care. ‘The NHS Long Term Plan provides a unique opportunity and a national blueprint to improve and develop the services we have in place now and target new investments in ways that can make a real difference to people.’



11 screening programmes and NHS Health Checks can help identify patients who may need further diagnosis or treatment.



The NHSX artificial intelligence laboratory is helping to address tough challenges, such as earlier cancer diagnosis.



16. Lette M et al. Initiatives on early detection and intervention to proactively identify health and social problems in older people: experiences from the Netherlands. *BMC Geriatrics* 15. Article number: 143 (2015)

17. WHO. *Ageing and Health* (2018)

18. WHO. *Ageing and Health* (2018)

## 2

The UK Government is providing £210 million towards the development of precision medicine for early diagnosis and treatment. This includes three strands:

- Genomics to support large-scale genome sequencing for precision medicine
- The Digital Innovation Hub Programme, combining data from the NHS and research with analytics tools and informatics support for business
- A network of centres for digital pathology, radiology, diagnostics and artificial intelligence.

Our Future Health, meanwhile, is a collaboration between charities, the public sector and companies that make medicines and healthcare equipment, with initial funding of £79million from UK Research and Innovation. Its aim is to accelerate new methods of early disease detection and the development of new diagnostic tools, so more conditions can be effectively treated.





**“The NHS Long Term Plan provides a unique opportunity and a national blueprint to improve and develop the services we have.”**

Dr Martin Vernon, NHS England’s National Clinical Director for Older People and Integrated Care

## 3

## Treatment & rehabilitation

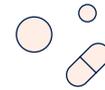
When an older person does face a health challenge – be that a stroke or a fall – the focus moves to effective treatment to tackle the immediate issue, and also follow-up rehabilitation, which can help facilitate less time in hospital and may allow them to remain in their own home and community. Evidence shows that meeting rehab needs extends life expectancy, improves quality of life and reduces the chance of readmission to hospital.

The UK is leading the way in the design and development of products to answer these challenges, including advanced therapies, such as gene and cell therapies, and tissue-engineered products to support, repair, replace or regenerate organs, tissues, cells, genes and metabolic processes. The UK is an epicentre for cell and gene therapy development, evidenced by the growth in the number of UK companies to around 70 that have raised £2.5 billion, and also the number of international companies who have chosen to expand or relocate to the UK. Rinri Therapeutics, a biotech company developing a novel cell-based therapy to restore hearing, has recently secured a grant from Innovate UK. This will fund a £3.2 million project to advance Rinri's stem cell therapy to reverse sensorineural hearing loss, working in collaboration with the Cell & Gene Therapy Catapult (CGTC) and the Universities of Sheffield and Nottingham.

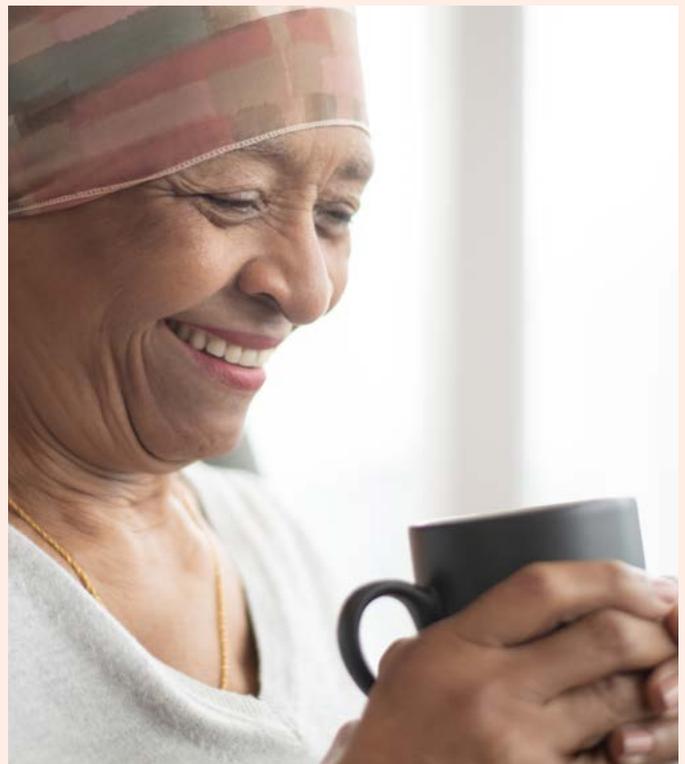
Breakthroughs in MedTech are set to transform rehab. For example, researchers at the University of East Anglia are pioneering virtual reality rehab for stroke survivors, using gaming technology to improve hemispatial neglect, which can leave people with reduced awareness of one side of their body, affecting their ability to live independently.



In 2016, people aged 80 and over were twice as likely to need help with activities of daily living as those aged between 65 and 79.



The UK has more medical products in development than any other country in Europe. This generates a turnover of £74 billion and exports of £30 billion.



## 3

Devices for Dignity is one of 11 MedTech and in-vitro diagnostic cooperatives (MICs) developing new medical devices, technologies and technology-dependent interventions. It focuses on solutions for chronic health conditions that are often overlooked, particularly those linked with loss of dignity and independence, and poor patient outcomes.

With dementia and Alzheimer's disease set to accelerate in the UK and globally, carrying a significant economic burden, the need for new treatments is urgent. One of the key ambitions in the Life Sciences Vision is to speed up the pace of translational studies into novel dementia treatments. The past decade has seen a raft of UK-led initiatives to boost research, and the aim is to develop a new model that allows

treatments to be taken to early-stage trials quickly and efficiently, helping them reach their clinical endpoint sooner, while the MHRA will work towards being innovation-friendly, supporting access to novel therapies.

The world-famous Guy's and St Thomas' NHS Foundation Trust is focusing on new ways of delivering services, integrating community and health services for older patients. One of the innovations is GSTT@Home, a 'hospital at home' service offering multidisciplinary acute clinical care at home. Consultant-led, this level of care would normally be delivered in hospital, but instead allows people to leave hospital early and recover at home. It includes daily visits and therapies when needed, helping older people to regain their independence in a home setting.





## 4

## Long-term care

By 2031, the population of those aged over 85 in the UK is projected to rise to 2.8 million, from 1.6 million in 2016 – a 75% increase. There is, and will continue to be, a need for investment in long-term care. This includes care homes, care services - from home care programmes to cancer and dementia services and end of life care - and many other models, including live-in care support and retirement villages. Homes for later-life living are important because they save on expenditure within healthcare systems – these sorts of homes are tailored to the needs of older people, reducing the risk of falls and injuries. They also tend to improve quality of life for older people, with an average 80-year-old rating themselves feeling as good as someone 10 years younger after moving to housing designed for later living.

The NIHR's Enabling Research in Care Homes (ENRICH) initiative, and the Research Ready Care Home Network brings together care home staff, residents and researchers to enable the design and delivery of research. The aim is to deliver high-quality, consistent research so that NHS patients and care home residents can all benefit from improvements in care, support and treatments. Currently, Greater Manchester's NIHR ENRICH programme has 70 care homes registered in its network.



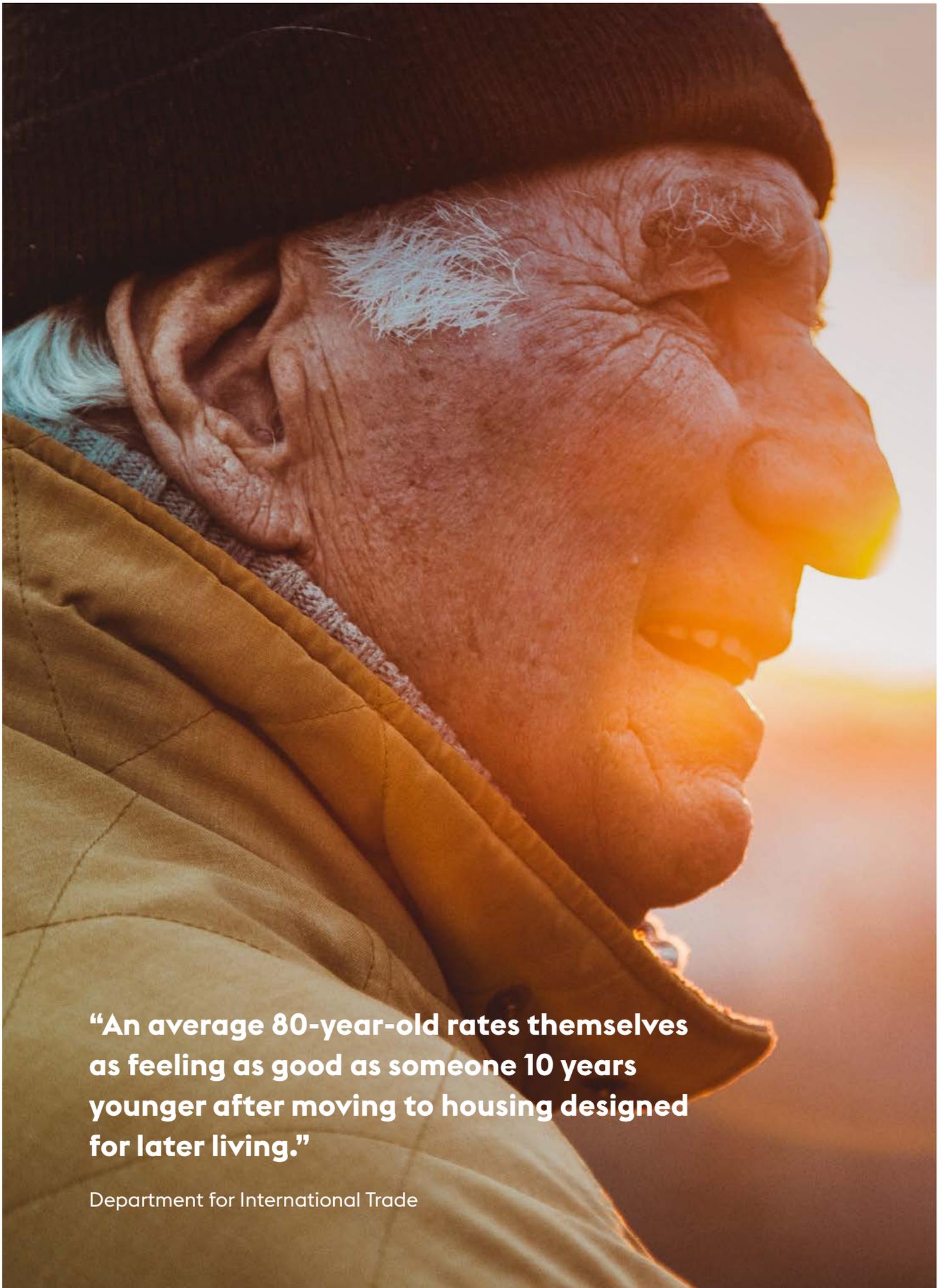
The care homes sector is worth around £15.9 billion a year in the UK, with an estimated 410,000 residents.



The UK care market is moving towards a consumer, demand-led system, with opportunities for innovative models of care to meet the demands of the UK's ageing population.

**“I wanted to get involved in research as I believe it's good for personal and service development. The staff became engaged and were enthusiastic to help test the new ways of working being tested, and the training has made a difference to care.”**

Care Home Manager, Surrey, England



**“An average 80-year-old rates themselves as feeling as good as someone 10 years younger after moving to housing designed for later living.”**

Department for International Trade

## SECTION THREE

# Regional deep dive with UK case studies

We take a look at the challenges faced by countries around the world, and the way they're responding – paired with UK case studies that address similar areas.





## Partner

### Shanghai Intex Exhibition Co Ltd

From 2020 to 2035, China's total population will peak and enter long-term negative growth. There is a pressing need to provide adequate support for a huge ageing population, including medical, financial and nursing support. Challenges include how to pay for the services and facilities required for a rapidly ageing population. The income and consumption level of the older people in the region are both relatively low. In addition, there is a significant urban versus rural gap in terms of population ageing. For example, the ageing level of the urban population in China in 2019 was 10.5 per cent, while the ageing level of the rural population was 5.3 percentage points higher. An integrated system, covering early diagnosis and long-term care for those with dementia or disabilities is particularly key.

## The focus

A holistic social support system is needed to support the growing ageing population. This would need to include a basic social security system, intensive care for critical illness, facilities for those with disabilities and/or dementia, and a robust training system to deliver specialised healthcare professionals and caregivers.

## UK Case study addressing the similar challenge

### Residents of a dementia village are living as independently as possible, while remaining members of a local community

The Dover Harmonia Village is the UK's first dementia village, designed to promote a holistic, person-centred approach for people living with dementia, giving them an improved quality of life and enabling them to live independently for longer. It includes a community hub with a café and space for activities; this is also open to the local community, to help break down barriers and improve inclusivity. Twelve semi-detached houses have been adapted to provide tailored accommodation to 30 people living with dementia.

### THE VILLAGE OFFERS:

- Unlimited access to outside space
- Facilities for both residents and the local community, to support integration with the community and with social and health services
- Multi-use spaces, with kitchen and dining areas
- Six beds in a guesthouse, for visitors
- Technology to keep residents safe – including triggers for staff responses and interactions.



## Partner

### ORPEA

By 2050, one in eight people in Europe will be over 80. The trend is forecast to lead to a sharp rise in neurodegenerative diseases such as Parkinson's disease, resulting in greater need for medical care and for significantly increased dependence on support. The WHO estimates that there will be 135 million worldwide living with these diseases.

### The focus

ORPEA has recognised this challenge and is improving its services around three key points. Firstly, it is focusing on hyperspecialisation, developing increasingly specialised

care in its follow-up and rehabilitation clinics. Secondly, it is working on prevention, chiefly building therapeutic education programmes that give people skills to manage their conditions and prevent worsening, supporting them to remain independent and maintaining or improving quality of life. And thirdly, ORPEA is aiming to change the nature of hospitalisations by improving outpatient, day and night hospitalisation services, helping to avoid the need for full hospital stays.

## UK Case study addressing the similar challenge

### Technology is benefiting residents of Yorkshire care homes.

Technology is at the heart of innovations within the care home model. Residents of care homes in Yorkshire, in the north of England, can use a pedal exerciser with a small chip attached. This feeds the motion to a tablet screen via Bluetooth technology, allowing the pedaller to take a trip down 'memory lane' or to visit new destinations. 'The conversation that Memoride triggers gets the residents talking to each other,' says Tracy Durkan, wellness coordinator at Anchor Hanover, Europe's largest not-for-profit housing and care provider.

**“Even after it's switched off, the happy moments stay for a long time and the residents stay happy and chatty.”**

Tracy Durkan, wellness coordinator  
at Anchor Hanover



**“There are enormous opportunities to help support healthy ageing and longevity in China, our innovation and commercialisation programme is working with UK businesses to help realise these opportunities and de-risk their entry into the Chinese market.”**

Patrick Bonnett, Chief Development Officer,  
UK National Innovation Centre for Ageing



## Partner

### Ministry of Health Singapore

By 2030, about one in four Singaporeans will be aged 65 and above, and the country's life expectancy is one of the highest in the world, at 84.8 years.<sup>1</sup> Singapore has been putting major energy into efforts to allow its citizens to age successfully, with a society-wide drive to “turn silver into gold”, where Singaporeans can continue to grow and flourish throughout their lives.

## The focus

The government launched its Action Plan for Successful Ageing in 2015, having consulted with residents from all walks of life. This SGD \$3 billion national blueprint comprises initiatives across three key levels, seeking to build a nation for all ages:

- At the individual level, the National Seniors Health Programme rolled out preventive health and active ageing programmes, including oral, visual and hearing screening. The National Silver Academy and Silver Volunteer Fund were set up to create learning and volunteering opportunities for seniors.
- At the community level, networks are developed nationwide to anchor a strong community care system, with Silver Generation Ambassadors reaching out to seniors in their homes, befriending services, social and health support services, as well as dementia-friendly communities in various neighbourhoods.

- At the national level, the National Innovation Challenge on Ageing was established, with SGD \$200 million set aside for applied, multi-disciplinary projects. Grant calls were launched in areas such as lengthening health span, productive longevity and ageing-in-place. Active Ageing Hubs were set up in housing developments to provide a range of services for seniors, including community activities, senior day care, day rehabilitation and home care services.

## UK Case study addressing the similar challenge

### Pioneers of 'virtual' care Alcove – empowering users and their families

Alcove's data led platform combines AI, a simple dashboard and integrated sensors, Alexa, wearables and a one-touch video carephone - caregivers can be alerted quickly in the event of any unusual events. During Covid Alcove had the largest and fastest rollout of digital care technology ever seen in the UK with Councils' rolling out thousands of its video carephones at scale across the UK reducing loneliness and isolation at scale. Alcove improves CQC ratings to 'outstanding' – helping residents to feel more confident in taking manageable, positive risks, allowing them to lead more fulfilling lives. Alcove has now won its first countywide care technology contract.

\*Going forward, the Action Plan will be refreshed, and the refreshed Action Plan will be anchored on the 3Cs of Care, Contribution and Connectedness.

1. The Burden of Disease in Singapore, 1990-2017



## Partner

### Silver Valley

France recognises that society needs to adapt to older people, including and integrating this sector of the population. The government aims to improve daily life for older people, prevent the loss of independence and improve working conditions for those who provide care. While there's a need and desire for innovation in this area, actually facilitating it can be a challenge.

## The focus

Silver Valley is an ecosystem developed to address the challenges, aiming to speed up innovations to improve seniors' well-being. It's now the main hub in Europe for these developments. To date, 4,500 entrepreneurs are connected

with the hub. Silver Valley launched the Scale Up Lab in 2020 to help start-up businesses adapt to the speed at which innovations are needed. The Open Lab, meanwhile, is made up of 9000 people aged 60 to 90, who team up with entrepreneurs to co-create solutions, so innovations are informed by their lived experience, and tested in real-world situations.

## UK Case study addressing the similar challenge

### New TV-based technology supports health and well-being through social connections and IoT.

It's widely recognised that difficulties in engaging with technology can drive isolation and poor mental health among older people. Kraydel has developed technology that allows people to use their television to stay connected with both loved ones and with healthcare. The Konnect hub has been specifically designed for those who are less comfortable with digital technology.

### THE KONNECT HUB ENABLES:

- Simple video calls and sharing of photos and videos through the TV, facilitating contact with friends, family, carers, and healthcare professionals
- A social platform that hosts groups, services and educational tools to help seniors stay active and connected
- TV-based telehealth, helping seniors access care
- The maintenance of independent living, via a suite of well-being sensors and connected devices.



## Partner

### AARP

The COVID-19 pandemic highlighted disparities in health outcomes in the US, as in other countries, particularly in communities of colour and low-income communities. These disparities have been fuelled by overburdened healthcare infrastructures, failing long-term care models and housing that doesn't meet the needs of an ageing population, along with lack of at-home care, services and support, and exacerbated by unequal access to technology, which can affect factors including social interaction and telehealth.

### The focus

In December 2019, AARP, the Agile Ageing Alliance and the German Marshall Fund of the US invited thought leaders from 25 countries working in development, design, and planning to explore the interaction between an ageing population and the built environment. Equity by Design aims to catalyse action that shapes housing and communities, enabling older populations to thrive. The dialogues resulted in a statement of principles to use as a framework for new and renovated housing, which include prioritising connectivity, facilitating intergenerational engagement and incorporating age friendliness.

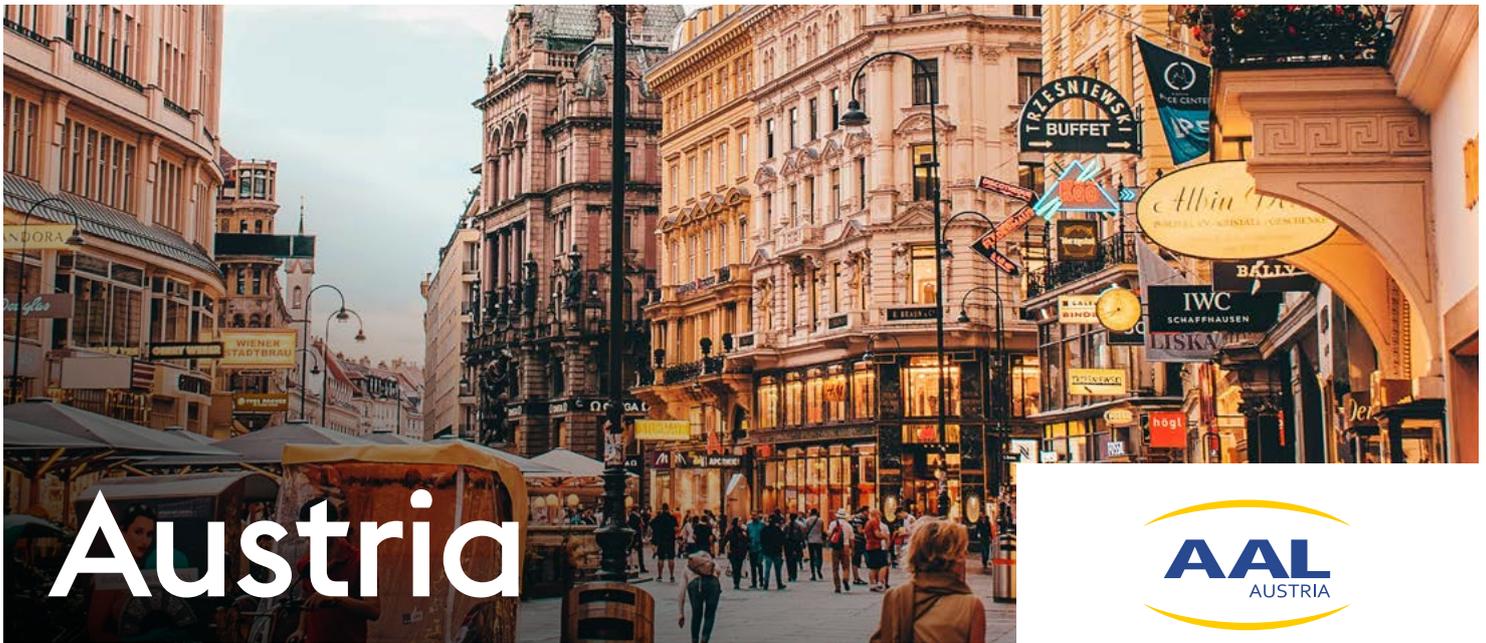
'We've learned both from and with thousands of global leaders in the built environment sector, with the aim to spark a movement whereby the built environment, at every scale, is a tool for disease prevention and the promotion of wellness and equity. As architect and urban designer Jan Gehl says: "First life, then spaces, then buildings. The other way around never works"', says Stephanie Firestone, senior strategic policy advisor at AARP International.

## UK Case study addressing the similar challenge

### Technologies help older people live better, healthier lives in their own homes

Cera Care is a technology-enabled home care provider, which pioneers digital, algorithmic and machine learning technologies to transform the UK's social care sector. These technologies predict deteriorations in health before they occur, enabling more effective treatments and reducing the likelihood of hospital visits. This takes pressure off the NHS – and helps people stay safely in their own homes.

Cera Care has a network of more than 5000 care staff, with plans to double this number by the end of 2021. These staff provide more than 25,000 home visits per day. Cera Care has raised more than \$100 million in funding to date and is currently planning its international expansion, which will see the company grow into a number of new geographies over the coming year.



## Partner

### Active and Assisted Living (AAL) Austria

Austria is affected by population ageing in a similar way to other European economies. It has tried to respond to these challenges by introducing measures to increase the effectiveness and efficiency of the care system. At an early stage, Austria recognised the importance of digital innovations.

### The focus

AAL Austria was founded in 2012. AAL refers to assistive technologies, and the innovative services that connect these technologies with the social environment, aiming to enable older adults to have a healthy, active, independent life, while emphasising communication with friends and family, and improving older people's integration into their social environment. Since its foundation, more than 100 Austrian organisations have joined the innovation platform in order to benefit from a wide range of communication, networking and lobbying services, and AAL Austria is constantly broadening its offers for members. Its central database showcases successful implementation of projects and publishes a regular newsletter.

## UK Case study addressing the similar challenge

### Smartphone technology links families with care providers

When an older relative is supported by carers, families can lack information. In Liverpool, smartphone technology is now delivering and monitoring care in people's homes. An app allows both care providers and relatives to see when a visit is carried out, how long it was for and how the person responded to it. This has resulted in information being delivered seamlessly and instantly to families and care providers, helping them understand the big picture of someone's care and alerting them to any adjustments needed. Liverpool is the only authority in Europe to be using this technology city-wide, giving information about 9000 vulnerable residents.

## SECTION FOUR

# Key learnings

From this wealth of information, we can extrapolate some core findings.



## The focus should not just be on specific conditions

Certain conditions are common in older age. But with its experience with an ageing population, the UK has researchers diving beneath these conditions to explore the mechanisms of the ageing process behind them. The UK Life Sciences Vision is driving this research, looking at mechanisms including stem cell regeneration, chronic inflammation and telomere shortening. Understanding the ageing process more generally is key in supporting healthy ageing and finding innovative ways to effectively prevent and treat age-related conditions.



## Positive ageing matters

It's important that countries are able to support their citizens not only with managing age-related conditions, but also with active healthy ageing, allowing them to experience a full, rich and engaged old age, as far as possible. Not only does this ease pressure on healthcare and economic systems, it also empowers older people to remain independent and participate fully in society for longer, with multiple benefits for them and their communities. A US paper published in Nature Aging found slowdown in ageing that increases life expectancy by 1 year is worth US\$38 trillion.<sup>19</sup> Given increasing life expectancy, shifting the focus to positive, healthy ageing rather than simply managing declining health is vital – and a change in our attitude to ageing, valuing older people rather than seeing ageing as merely burdensome. The UK already has expertise in preventing age-related issues and supporting those in midlife to manage their well-being in preparation for a healthy old age.



## Technology must be at the heart of addressing the issue

While some countries have had decades to adapt to an ageing population, some developing nations will have to adapt rapidly. The challenges can seem daunting but it's important to remember we now have advanced technologies at our disposal and it seems clear these will play a key role. The UK is already leading on implementing cutting-edge technologies, including AI, to pioneer new, streamlined ways of supporting older people and their caregivers.

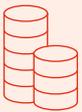


<sup>19</sup> Scott, A.J., Ellison, M. & Sinclair, D.A. The economic value of targeting aging. Nat Aging 1, 616–623 (2021)



## Integration is essential

Joined-up, agile processes are going to be key for helping countries tackle the challenges that come with ageing populations, adapting everything from housing, transport and leisure through to health and social care services.. Typically, care may be fragmented, with older people seeing multiple healthcare professionals, and social and family care creating further layers. This can be unwieldy and may mean people are not having optimal care and support. The UK has identified this issue and has worked extensively on integrating health services to manage multiple conditions and more general frailty, which is now recognised as a long-term treatable syndrome in its own right. There are also innovations linking individuals, professionals and family members to provide agile care, reassurance and quickly identify any gaps.



## Data matters

Gathering and monitoring data is an essential part of integration. The English Longitudinal Study of Ageing (ELSA), has been collecting information from the over-50s since 2002, interviewing the same people every two years to monitor factors including physical and mental health, and attitudes to ageing, to inform policy related to ageing. Meanwhile, the NHSX programme is another resource, with the aim of using digital social care records to join up care across social care and the NHS, while commissioners and regulators will be able to access real-time data to support the provision of quality care. The Open Life Data Framework is designed to support the UK government goal of extending healthy life expectancy by five years while reducing health inequalities. It will help researchers, policymakers and entrepreneurs select the health data most relevant for supporting healthy ageing at an individual and population level.



## Advanced therapies are key

Medical innovations are at the core of revolutionising ageing. From innovative cancer treatments to novel dementia therapies and pioneering medtech for stroke rehabilitation, the coming years may see a dramatic transformation in the way common age-related diseases are treated. In the UK, nationally funded research centres are focusing on translational studies that can deliver results fast enabled by a globally respected, high quality, pragmatic regulatory system. Scientists are able to draw on invaluable NHS data, one of the benefits that has made the UK a hub for research into ageing.



## A new era in senior living is arriving

In the UK, we're seeing a revolution in the way older people live. Technological developments are enabling people to stay independent for longer, which is valuable for both individuals and communities. And care homes are starting to offer a very different experience, consumer-led and enriching. Investment into senior living brings a range of opportunities, with myriad products and services on offer to transform this part of life. The UK is leading the way.





## SECTION FIVE

# Conclusion

Population ageing poses a huge challenge. But as we can see, there are also enormous opportunities too.

Combining investment in new innovations and technology with cutting-edge health research can mean that many people will enjoy a fit and active older age. More than that, they can also continue to contribute to their communities. Too long, older people have been seen as a drain on society - now is the time to understand that supporting this growing sector of the population allows them to continue to share their valuable skills and experience, enriching both our lives and economy. As the world faces huge crises such as the climate and ecological emergency, we need the wisdom of age more than ever before.

Looking for investment opportunities  
in Healthy Ageing?

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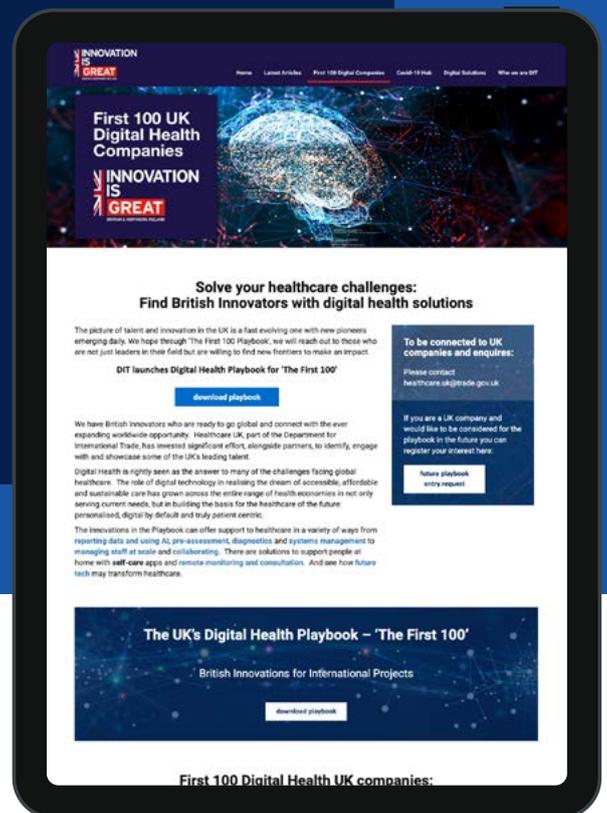


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## Department for International Trade

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