



HM Government



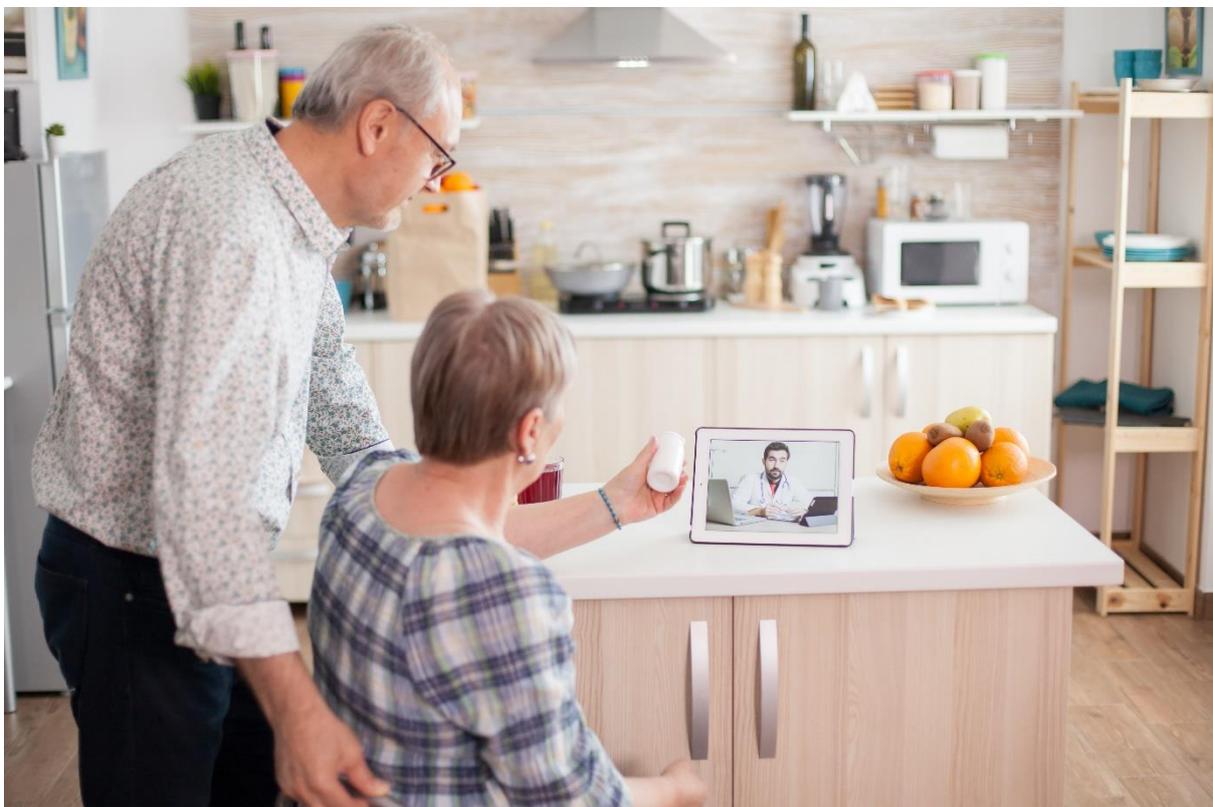
European Union
European Regional
Development Fund



Health
Enterprise
East

MedTech NAVIGATOR

Healthy Ageing and Elderly Care



ALICE GREEN
HEALTH ENTERPRISE EAST

Medtech Navigator

The Medtech Navigator, part-funded by the European Regional Development Fund (ERDF), is a three-year programme, delivered by Health Enterprise East Ltd., to facilitate knowledge exchange between the medtech industry, many of whom are small and medium sized enterprises (SMEs), the NHS, and academia. The programme seeks to enable companies to identify potential market opportunities in a variety of specific disease areas and apply for Innovation Grant funding through the programme, thereby engaging SMEs in new R&D projects that are both customer-focussed and collaborative in nature. This will allow the creation of partnerships between clinicians, academics and industry to develop novel medical technologies which will improve healthcare and quality of life for patients and the healthcare market of the future.

www.medtechnavigator.co.uk

Health Enterprise East Ltd.

At Health Enterprise East believe in improving healthcare through technology and innovation.

We work with the NHS, medical technology industry and government organisations to help turn innovative ideas into products and services that will benefit patients.

Our experienced team offers clients a diverse range of business and innovation management services. Our strengths include IP management, technology commercialisation, health economics and strategic market access advice.

Based in Cambridge, we work with over 25 NHS organisations nationally and medtech companies globally. Our aim is to help our clients address the challenges faced along the product development pathway, connecting them with relevant healthcare experts and funding opportunities.

Contents

The UK Elderly Population in Statistics	4
Ageing and Health.....	5
Living Arrangements	5
Health in Later Life	6
A Snapshot of Health in the UK Elderly.....	6
The Elderly and Social Care	6
Informal Care for the Elderly	6
Case Study 1: Bridgit Care	7
Innovation in Elderly Care.....	8
As the population ages innovation is required to release the strain.....	8
New Technologies are being Developed.....	8
Case Study 2: GenieConnect	9
Case Study 3: Red Ninja	9
Alzheimer’s Society Recommendations.....	11
The Market is Rapidly Changing.....	11
Delivery, Payment and Funding	13
Why is it Complicated?	13
Who Pays?.....	13
Suggestions for Improvement.....	14
Funding the Development of New Innovations and Solutions	14
Examples of the Types of Funds Available	15
Summary	16
References	17

The UK Elderly Population in Statistics

The world's population is ageing at a rapid rate and it is predicted that by 2050 one in five people will be over 60. The number aged over 80 is projected to triple from 143 million in 2019 to 426 million in 2050. While every older person is different, physical and mental capacity tend to slow-down with increasing age. While we can't halt this process, there are many steps individuals can take to keep fit and independent well into their later years. For this paper, older or elderly refer to those over the age of 65.

According to statistics gathered by Age UKⁱ from the Office for National Statistics (ONS), the UK has an ageing populationⁱⁱ, with nearly 12 million (11,989,322) people aged 65 and above in the UK of which:

- 5.4 million people are aged 75+,
- 1.6 million are aged 85+,
- Over 500,000 people are 90+
- 14,430 are centenarians

The number of centenarians living in the UK has increased 85% in the past 15 years and by 2030 it is estimated there will be over 21,000 centenarians. Perhaps the most striking statistic is that an additional 8.6 million people aged 65 years and over (roughly equivalent to the population size of London) are expected to live in the UK by the year 2070. By 2030, one in five people in the UK (21.8%) will be aged 65 or over, 6.8% will be aged 75+ and 3.2% will be aged 85+ⁱⁱⁱ. The 85+ age group is the fastest growing and is set to double to 3.2 million by mid-2041 and treble by 2066 (5.1 million; 7% of the UK population)^{iv}.

As more people age healthily, more records are being broken. Although there are significant health implications of the ageing process, those that are a little older can still break records and complete tasks that have phased many others before them. To demonstrate this, here is a snap shot of some achievements from some notable people in their later years:

- Isaac Newton, better known for his scientific achievements, became a scourge of counterfeiters as the Warden of the Royal Mint, a position he held until his death in his mid-80s.
- Alexander Graham Bell was 75 when he received a patent for his work on a hydrofoil boat.
- Benjamin Franklin only retired from public service when he was 82.
- Fauja Singh is a running legend having completed his final marathon at the age of 101.
- Captain Sir Tom Moore raised a total of £32,796,155 for the NHS aged 100. With tax rebates, this will be worth over £39 million.
- Otto Thaning is oldest channel swimmer having completed the gruelling task aged 73.

So, it's clear that ageing is not all bad. In fact, baby boomers and older adults report less stress than their younger counterparts, according to the American Psychological Association's annual Stress in America report. You'll probably get more agreeable as you age, at least through your 60s. You're also likely to be happier and less inclined to get angry. There's also a good chance you'll become the morning person you've always wanted to be -- in your 60s. Our sleeping patterns can shift as we age, so we get sleepier earlier and wake up earlier. That seems to work out well. One study showed that even though those over 65 tend to wake up during the night, most said they regularly get a good night's sleep.

Ageing and Health

At age 65 years, both men and women can expect to spend around half of their remaining life expectancy in good health. However, with ageing comes an increased chance of disability and experiencing multiple chronic and complex health conditions. According to Public Health England, life expectancy has risen faster than healthy life expectancy, this means as life expectancy in the UK continues to increase so does the time spent in poor health^v. Data gathered between 2014 and 2016 shows that the average healthy life expectancy at birth is 63.3 years for males and 63.9 for females that live in England, with disability-free life years at age 65 years at 9.9.

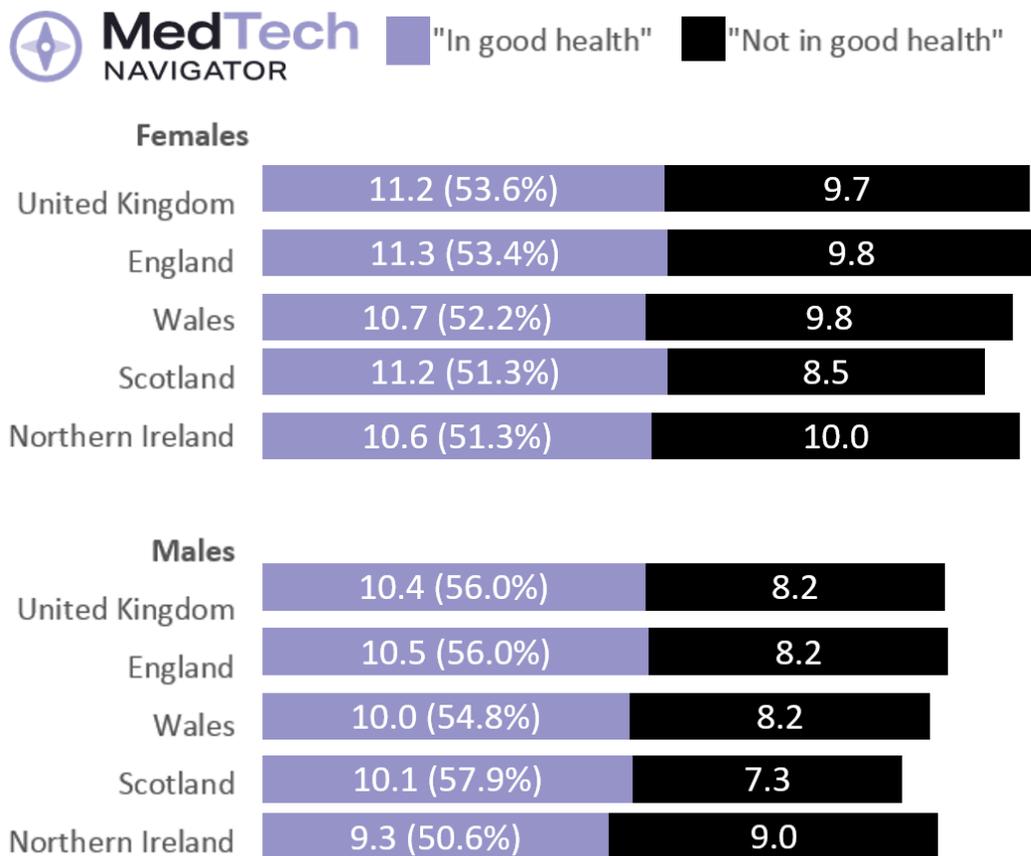


Figure 1 Life expectancy and the proportion of life spent in good health at age 65 years, by sex, 2014 to 2016, UK and constituent countries. Source: Health state life expectancies, UK: 2014 to 2016, Office for National Statics

Living Arrangements

To fully understand the health and care needs of the elderly, we must understand where they are within the community and what support is available to them. Over 3.8 million individuals over the age of 65 currently living alone, 58% of whom are over 75. Healthcare innovations that help keep people healthy within their homes are desirable to those living alone but also to those with care providers, this is often referred as "ageing in place". Older adults who live alone are more likely to attend accident and emergency and visit their GP^{vi}. According to the same study, around 21% of those aged 65+ who live alone visit their local GP at least once per a month, significantly more than the 14% who live with others. As well as more frequent visits to A&E and the GP, those living alone are more likely to present with mental health conditions^{vi}.

As well as who the elderly live with, where they live can also play an important role in their health and wellbeing. Most people (93%) aged 55+ live in some kind of mainstream permanent housing as owner occupiers or tenants with just 5% of those aged 65+ living in specialist housing^{vii}.

Health in Later Life

According to a study conducted in 2017, an estimated 4 million older adults in the UK (36% of people aged 65-74, and 47% of those aged 75+) have some kind of limiting long-standing illness^{viii}. Examples of long-standing illnesses are those health problems or disabilities that limit daily life with no known cure such as, diabetes, cardiovascular diseases and chronic respiratory diseases^{ix}. Just over half of elderly people live with some kind multi-morbidity (2 or more chronic conditions)^x.

A Snapshot of Health in the UK Elderly

Falls: According to NHS data, the main cause of A&E admission in the UK elderly population is due to some kind of fall, with around a third of people aged 65+ and about half of people aged 80+ falling each year.

Sensory loss: Hearing and sight loss increases with age, around 1 in 5 people aged 75+ live with sight loss and 1 in 2 people aged 90+ in the UK^{xi}. Three in every four people in care homes have hearing loss, this will increase to 80% by 2032. According to Action for Hearing Loss, quick identification and effective management of hearing loss can significantly improve quality of life, reduce loneliness and social isolation and improve overall health and wellbeing^{xii}.

Dementia: One of the most commonly associated health conditions with the elderly population is Dementia. Approximately, 1 in 14 people over the age of 65 and 1 in 3 people born in the UK this year will develop dementia in their lifetime according to Alzheimer's Research UK, 2019^{xiii}.

Mental health: It is estimated that around 40% of older people visiting their GP have a mental health condition, this increases to around half of older people admitted to hospital and increases further to around 60% of those in care homes. Depression is the most common mental health affliction amongst the over 65's, affecting 22% of men and 28% of women^{xiv}.

The Elderly and Social Care

Social care can be provided in the home or in a residential setting and includes both paid (formal) care and care provided by family, friends and volunteers (informal care). Social care requirements also increase with age. One in five men and women aged between 75 and 84 years have at least some problems washing or dressing. This rises to 34% of men and 42% of women at ages 85 years and over^{iv}.

There is an interplay between health and social care demand (both formal and informal). Health care and social care are also linked by transfers of patients between these services. Delayed transfers of care occur when a patient is medically ready to depart from their current care setting but is unable to do so because of non-clinical reasons. A higher proportion of delays were attributable to the NHS than to social services in 2017 to 2018. Delays where the patient was awaiting a care package in their own home were the most common reason accounting for the largest number of delayed days (21%)^{xv}.

Informal Care for the Elderly

In the UK, the provision of long-term care to older people relies very heavily on the contribution from informal carers. Informal carers provide personal care and monitor medication, but they also devote lots of time to practical care tasks, such as shopping and laundry. Large numbers of carers also see a key role as providing company and 'keeping an eye' on the older person, particularly if the care recipient is cognitively impaired. Estimating the true gross financial cost of informal care to either society or individuals is difficult. An accurate figure would need to take account of reduced earnings

from employment, the consequent loss to the Exchequer, the long-term impact of reduced pension contributions and the cost of carer support services. There are also indirect or non-financial costs of caring, such as social exclusion, erosion of personal relationships and adverse effects on health (which then presents a cost to the NHS). According to research conducted by The Kings Fund, informal care will continue to provide a very significant input to social care, even if increases in availability fall short of future demand. Greater carer support is needed to relieve some of the pressure of care, as the costs of increasing formal care to meet a significant reduction in informal care would be prohibitively high^{xvi}.

Case Study 1: Bridgit Care

There is clear unmet need to support this sector of informal carers. Upstream Health have developed [Bridgit Care](#) to help unpaid and informal carers look after the most vulnerable in our society as a way of supporting those who perform such selfless acts, but also because unpaid carers save the NHS £132 billion per year. They felt that despite their significant contributions to society, there is a real lack of support available for unpaid carers with their daily struggles and wanted to create something to help support, empower and uplift unpaid carers.

Bridgit does this by combining industry leading technological solutions with empathetic guidance to provide a complete carer support solution. Whether a carer wants a device that allows them to care for their loved one remotely, or if they want someone to actively listen to their struggles and provide support: Bridgit provides these services and more.



Innovation in Elderly Care

As the population ages innovation is required to release the strain

The UK's ageing population means that more and more people will require care as they age. Now, more than ever, it is essential to find ways to make the most efficient use of healthcare resources and technology is well positioned to help.

Hospitalisation is often unavoidable for people with acute illnesses or in need of surgery. However, other chronic conditions can be effectively managed within the community. Inpatient hospital care is expensive, and research shows that many older people are admitted to hospital inappropriately and stay longer than necessary. With institutional care costing up to 10 more than home care, delivering care in the community is preferable where appropriate. The medical technology industry continues to develop products that enable people to better manage their disease or health condition themselves and minimise their use of hospital care. This can be empowering for patients, providing them with flexibility and choice.

Healthcare requirements increase with age, with healthcare costs increasing steeply from around age 65 years (Figure 2). Hospital admissions have increased since financial year ending 2007, but with a steeper increase in admissions for the 66 and over age group. This has contributed to rising healthcare costs.

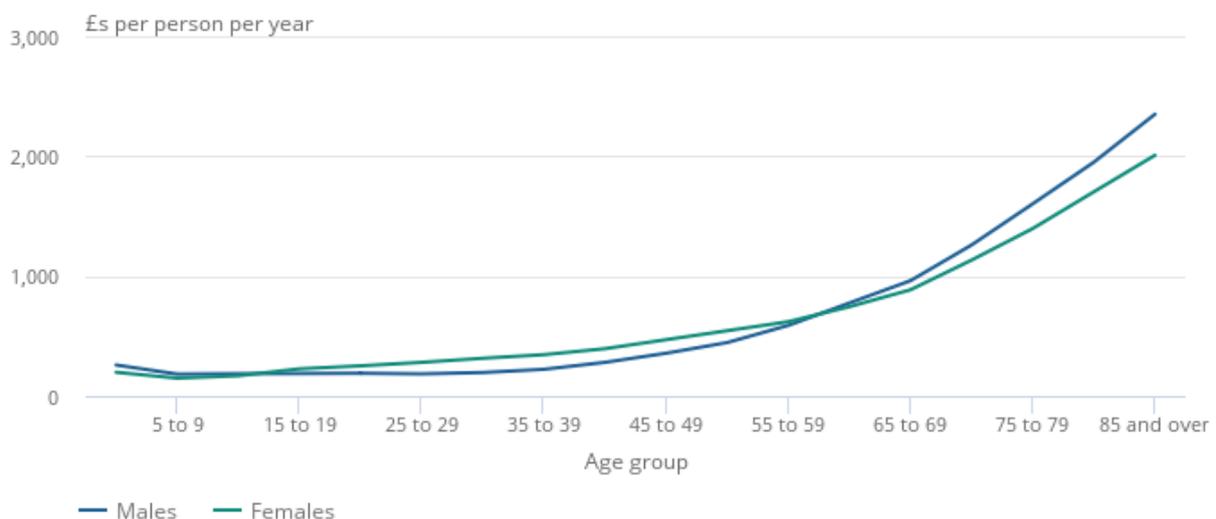


Figure 2 NHS general and acute care age-cost curve, 2013 to 2014, England. Source: Technical Guide to Allocation Formulae and Pace of Change, 2016 to 2017, NHS England

New Technologies are being Developed

The WHO Guidelines on Integrated Care for Older People (ICOPE) propose evidence-based recommendations for health care professionals to prevent, slow or reverse declines in the physical and mental capacities of older people. This digital tool is aimed at health and care workers, to assist them in assessing and treating elderly patients. The ICOPE Handbook app is available on Apple and Android devices, and provides guidance on addressing conditions such as:

- Limited mobility
- Symptoms of depression and other mental illnesses
- Malnutrition

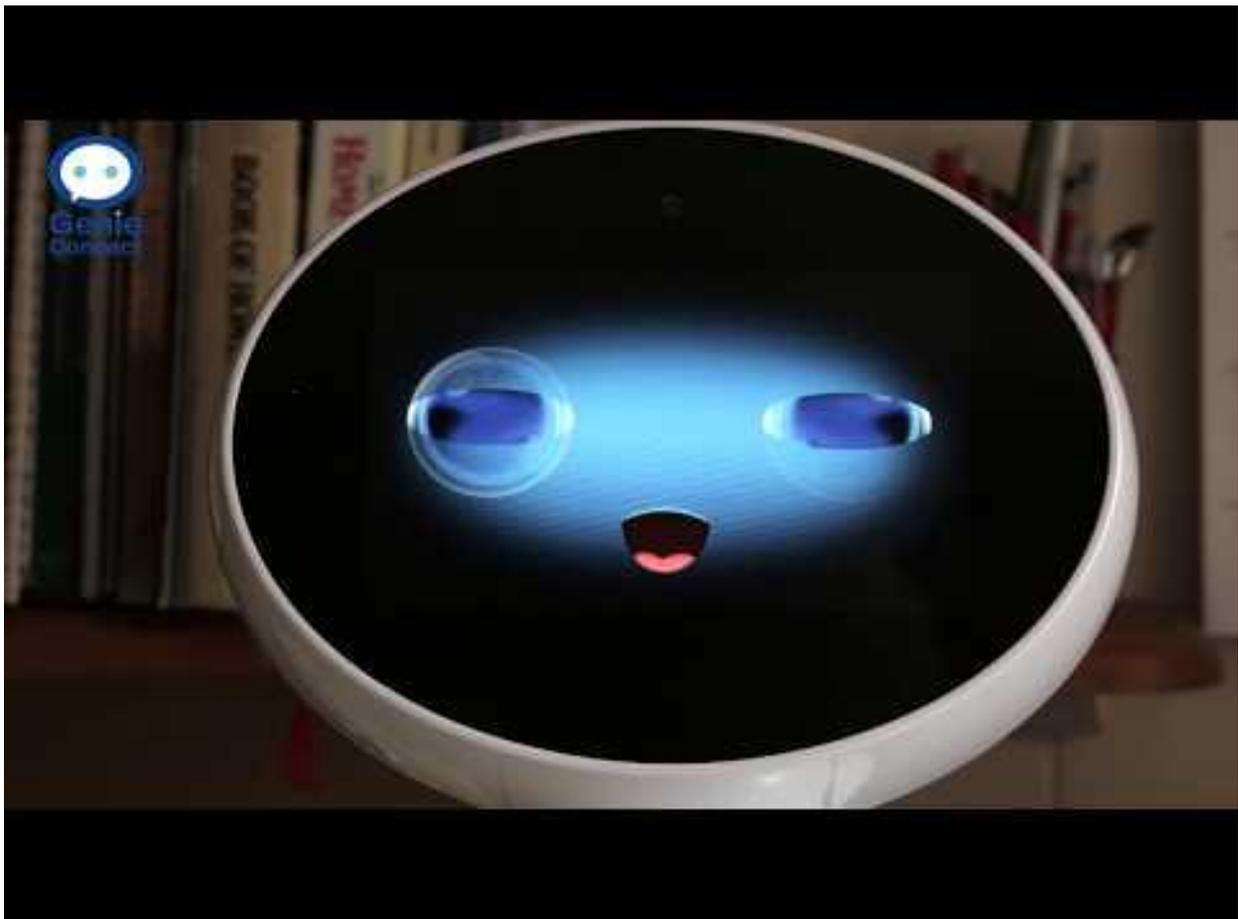
- Loss or decline of sight or hearing
- Cognitive decline

The ICOPE handbook would be a good starting point for anyone innovating in the elderly care market.

Case Study 2: GenieConnect

Service Robotics have developed [GenieConnect](#). GenieConnect® is a companion robot service that uses a friendly, intuitive, voice enabled robot to offer connectivity and support to the UK's older adults. The aim is to reduce loneliness, increase independence and help older people live in their own homes for longer by providing the following functionalities:

- Voice-enabled Genie answers questions and plays music and video on request.
- Genie provides human connection with direct video calling to family, friends, carers, and friendly, knowledgeable care centre representatives.
- Genie learns the users likes and dislikes, and provides stimulating content that is relevant and helps to keep the mind active and engaged.
- Genie can connect by video to other users with similar interests – from crosswords and quiz shows to yoga and knitting.
- Genie shows reminders to take medication on time, and to attend appointments for the users health and wellbeing.



Case Study 3: Red Ninja

Red Ninja have developed [Safe Steps](#) - a digital falls risk assessment tool created for the ageing population. This Liverpool based company was called to action upon Wirral's older population

maintaining their position as 'top of the league for the number of falls'. This brought a whole range of costs and consequences. For 11.8 million residents aged 65+ across the UK, falls remain their leading cause of death and disability. In some areas of the country, it is thought that as many as 6 people over the age of 65 suffer a fall every minute. Through work conducted alongside Wirral Independent Services they decided that a holistic approach to fall prevention was required to improve the situation.

Through listening to their stakeholders, it was established that an easy to access digital record was really important alongside diminished paperwork - workers wanted to access information on individuals swiftly and efficiently. Safe Steps was therefore born out of this with the aim of giving care providers access to every screening that had already taken place, giving care workers the opportunity to revise essential information. Safe Steps would be based on structures akin to the Traffic Light System in care, which would track where and when assessments were due to take place. The tool would also identify who hasn't received routine assessment - an issue frequently encountered by carers who, for many years, had relied on the accuracy of paperwork.

The Safe Steps app is continually evolving as more feedback is gained from users. It is already helping gel communication between numerous care professionals, allowing them to communicate effectively amongst themselves and exchange good practice.



Alzheimer's Society Recommendations

As well as new digital solutions, the Alzheimer's Society also recommends a host of existing technologies to be used to help care for the elderly. Examples include:

Automated prompts and reminders

- devices that detect motion – these use a sensor or pressure mat and play a pre-recorded voice when there is movement. For example, you could set one of these to play a message when you walk out of the kitchen to remind you to turn off the gas.
- devices that play set reminders – these play messages at certain times. For example, you or your family or friend could use one of these to record a message reminding you to take your medication. If you have a smart phone, a calendar app can also show reminders.
- accessing devices remotely – with many devices, including tablets, PCs and smart phones you can give people you trust the ability to access it remotely. This means they can support you by adding reminders on your behalf.

Clocks and calendars

Medication aids

- simple pill boxes (often known as dosette boxes) – these have separate compartments for days of the week and times of day, to make it clear when to take your medication.
- automatic pill dispensers – these are pre-filled and locked. When it's time to take medication, the dispenser sets off an alarm and the right compartment opens so that you can access the correct pills. Some devices can be set so the alarm goes off until the pills are removed. Some devices can also alert friends or family if the medication hasn't been taken, or if there's a problem with the device (for example, the battery is low or it needs refilling).

Hearing and vision aids

There is also advice on how to obtain access to many of the above technologies on the Alzheimer's Society [website](#).

The Market is Rapidly Changing

Many of the innovations being developed in this space have a digital focus. Above we discussed how the numbers of those over 65 are increasing rapidly in the UK but now it is important to point out that those entering this age bracket are increasingly tech savvy. It is the baby boomers who are driving this shift, and the vast majority have expressed a preference for "aging in place" as opposed to going into residential care.

Technology use has been steadily increasing amongst the older generation however the Coronavirus pandemic greatly increased use across all age groups. Those that had previously hesitant to use technology had it somewhat thrust upon them, particularly within the healthcare sector. However, this conveyed some other benefits particularly amongst the older generation who are most at risk of Covid-19. Through learning to use video conferencing solutions, older adults were able to also use these platforms to keep in touch with friends and family and are now much more likely to continue to use such platforms as we move out of the pandemic.

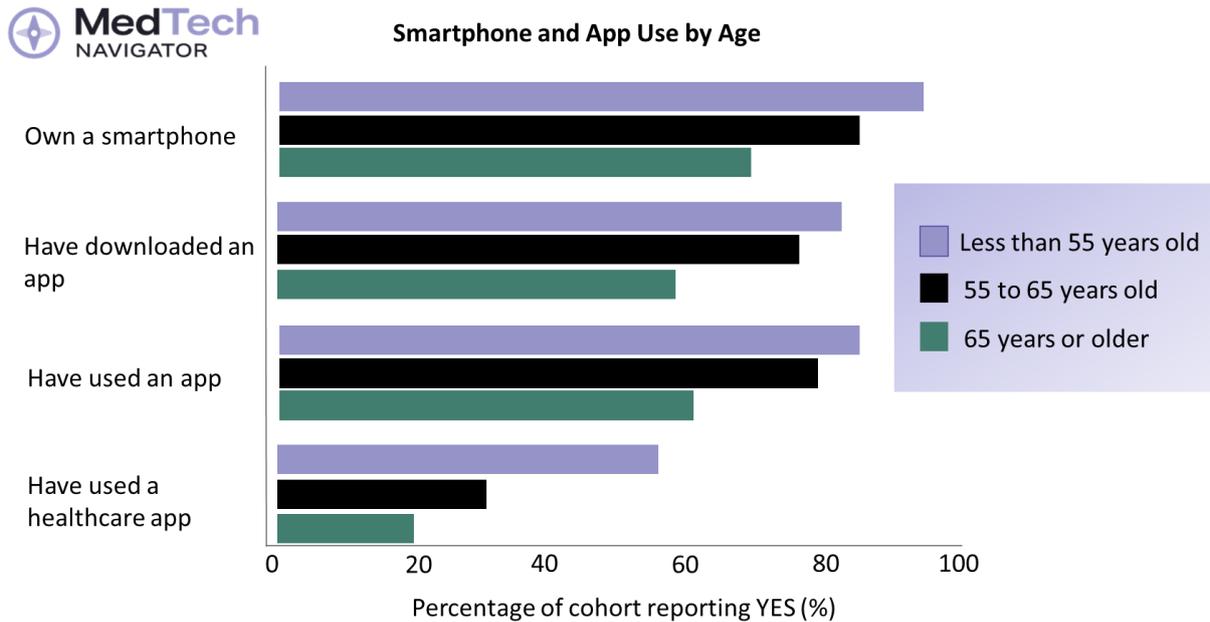


Figure 3 Adapted from Rock Health Report. Smartphone app use is widespread across all age groups with all users showing more caution when using healthcare apps.

According to a report from Rock Health, the vast majority of those aged 55 to 65 own a smartphone and download apps to use. Smartphone and app adoption in this age group was very close to the younger generation (generally within 10%). However, the gap between generations doubled when looking at healthcare app usage, up to just over 20% (Figure 3). The authors argued that this disparity was due to a lack of healthcare apps designed for those above 65 as opposed to reluctance to adopt such technologies^{xvii}. The authors found out that those aged 55 to 65 searched for online health information and had live phone call consultations nearly as much those their younger counterparts (Figure 4).

The authors also noted that as the population ages and people inevitably work for longer, healthy ageing becomes an important issue for employers too. Older adults' interest in aging in place, paired with their growing use of technology, presents investors and entrepreneurs with an opportunity for innovation, according to the report.

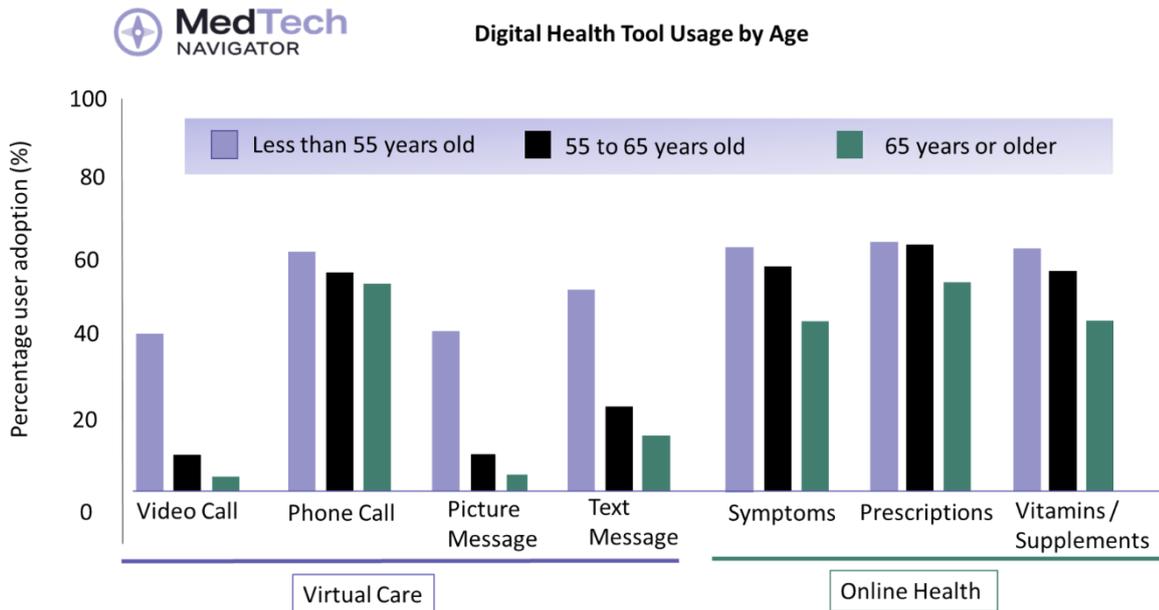


Figure 4 Adapted from a report by Rock Health. A phone call is the most prevalent digital tool in use across all age groups compared to video call, picture message or text message which are predominantly used by those under the age of 55. Online health searching is similar across symptoms, prescriptions, and vitamins/ supplements.

Delivery, Payment and Funding

For those that work within the medtech innovation sector, in the area of elderly care or healthy ageing, it can be complicated to understand who is delivering these services, who pays for these services, and who could fund the development of new innovations and solutions in this sector.

Why is it Complicated?

Many services for the elderly are provided in other sectors outside of NHS care; hospitals are shifting away from general healthcare institutions towards becoming more specialist centres providing care for serious and acute conditions. It is now more common for post-intervention and chronic care to be provided outside of the traditional hospital setting such as in the patient's own home, in smaller specialist care-centres, or care homes. In addition, care services for the elderly are intertwined with numerous groups of activities, such as generic health services accessed by elderly people, social services, local services and so forth. These services can be provided through many organisations such as the NHS, local councils, charities and carers.

Finally, care services for the elderly cannot be reduced to those operations solely performed on elderly individuals themselves. There is a much wider scope of services and provision that encompasses all operations performed on elderly people's environments, whether those environments be tangible, intangible or human (housing, relatives, carers, etc.). They are also highly dependent on the institutional environment that regulates them.

Who Pays?

Care for the elderly and more generic healthy ageing is usually based within the home. Who funds healthcare in the home setting largely depends on what the technology/innovation is. Many factors come into play such as:

- The location of the technologies
- Their objective/purpose

- Their nature

The purpose of the intervention is also important, examples include:

- Medical treatment
- Help with daily living
- Provision of technological support to service providers e.g., alerting carers or service providers in the event of an incident

For innovation that sits within a home and is not a medical treatment or for help with daily living, these are generally funded by the individual themselves or by the local council. An example of innovations within the home that can be funded by the individual or by the council are home monitoring systems. An individual or family member may wish to purchase such system for peace of mind, or some councils can provide monitoring services, but these are usually basic systems.

Payment for medical innovations and technology can become further complicated as the dividing line between medical and non-medical innovation is not always clear. For example, remote surveillance could be said to fall within the medical sphere when it is used in a hospital room to alert nursing staff. Conversely, it should be allocated to the non-medical sphere when it is used in an elderly person's dwelling as an alarm system for alerting the family.

There is a legislative requirement within the Care Act 2014, that local authorities must provide good quality information and advice about home adaptations and repairs, including the process for assessments, funding and how to access suitable local tradespeople to get the work done. However, current provision of this information, advice, and associated support, falls well short of the Care Act Guidance in many areas.

Often care provision is integrated with the aim of speeding up and simplifying delivery by combining health, social care, and housing provision locally. Examples of integration include providing fast-track home modification grants to speed up hospital discharge or home adaptation-linked staff in hospitals to integrate with acute services and ensure timely measures were carried out in the home to reduce patient discharge times.

Suggestions for Improvement

According to a report from Centre for Ageing Better, there are some improvements that could be made to improve care in the ageing and elderly. Local leadership across health, housing and social care should develop a shared objective of helping people to live independently in a home that is suited to their needs as they age. This objective should be embedded within planning policy frameworks, Sustainability and Transformation Partnerships, Joint Strategic Needs Assessments, Better care Fund plans and NHS local plans^{xviii}.

The NHS should work with housing authorities, housing providers (including both social and private landlords) and social care to assess what is needed to adapt homes more quickly and enable faster discharge^{xviii}.

Breaking down silo budgeting structures for the treatment of people with chronic conditions can help ensure patients receive consistent, high-quality care across all care settings. Payers need to move towards paying for an 'episode of care' rather than paying based on the site of care.

Funding the Development of New Innovations and Solutions

One of the major barriers to healthcare innovation in general is funding but this is exacerbated in an area with complex patient pathways and caring responsibilities. The increase in funding from national

Government to help to meet the local costs of home adaptations and Disabled Facilities Grant (DFG) provision specifically has resulted in significant innovation and improvements in some local authority areas. However, these pioneers would appear to be in the minority and steps are now needed both to consolidate the areas of good practice and also to stimulate wider adoption by other areas ^{xviii}.

There is funding available to those developing medtech solutions irrespective of which type of organisation they represent whether that be academic, NHS Trust, SME or other. These can be broken down depending upon the stage of development as illustrated in Figure 5.

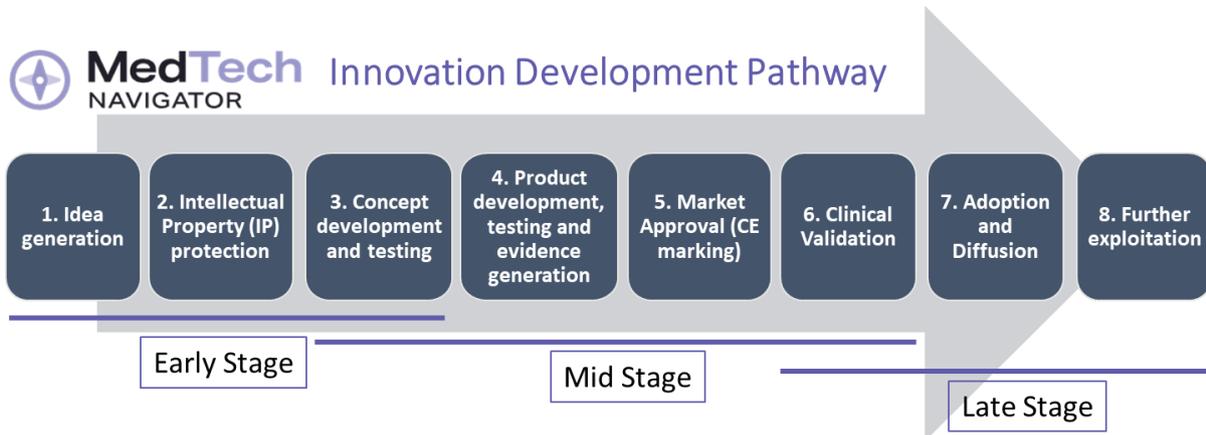


Figure 5 The innovation development pathway can be broken down into 8 key components from early-stage ideas to on market products.

Examples of the Types of Funds Available

Early Stage

- Research Councils e.g., MRC or BBSRC
- University or NHS Translation and Proof of Concept Funding
- Charitable Funds e.g., CRUK pioneer award
- Health Enterprise East e.g., Innovation Vouchers & MedTech Navigator
- Innovation/Entrepreneurial Competitions & Prizes e.g., Medtech and In vitro diagnostics Co-operatives (MICs)

Mid Stage

- NIHR e.g., Invention for Innovation (i4i) Awards
- Innovate UK e.g., Smart Grants
- Wellcome Trust e.g., Innovator Awards
- Cancer Research UK e.g., Accelerator Awards
- Catapults/Catalysts
- Business Accelerators
- SBRI Healthcare

Late Stage

- Angel Investment
- Venture Capital
- Seed funds
- Bank Finance (loans)

- NIHR (various funding schemes: HTA, EME)
- NHS focused accelerators, e.g.,
 - National Innovation Accelerator (NIA)
 - DigitalHealth.London

Summary

Health care expenditure on the elderly is the highest among all age groups. As life expectancy increases, the share of expenditure also is expected to rise. However, it isn't all about poor health, more people are living longer with fewer long term health conditions, mainly because of improvements within the healthcare setting. We are seeing people staying within their homes for longer which may mean care shifting away from fully residential facilities to more of a hybrid model. Innovations that enable people to have a good quality of life and stay within their own homes would be welcome within this setting.

"Aging in place" is a powerful concept that should underlie any product or service marketed toward older adults. Innovations that make it easier to live at home for longer have the potential to revolutionise the UK care system. Connected home technology will play a large role in this and it's good to see so many SMEs active in this area in the UK.

With rising pressure on governments, payers, and manufacturers to reduce health care costs, innovative digital technologies also have tremendous potential to improve elderly care and control costs. Ideas such as Red Ninja's Safe Steps application have huge potential to be rolled out nationwide, once fully established in the North West. Innovations that serve both the ones being cared for as well as the carers have a great shot at becoming a commercial success. Sometimes it is the simplest innovations that are the most needed in elderly care. The UK is at the forefront of this innovative push and programmes like the MedTech Navigator aim to help those innovators move a step closer to getting their products on market and becoming a commercial success.

References

- ⁱ Age UK (2021) Later Life in the United Kingdom. Accessed on 18.02.2021 from: https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/late_life_uk_factsheet.pdf
- ⁱⁱ ONS. (2018). Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland - Office for National Statistics.
- ⁱⁱⁱ ONS. (2018). Changing trends in mortality - Office for National Statistics
- ^{iv} ONS. (2018). Living longer how our population is changing and why it matters - Office for National Statistics.
- ^v Public Health England. (2018). Research and analysis. Chapter 1: population change and trends in life expectancy Published 11 September 2018 - GOV.UK Accessed on 18.02.2021 from: <https://www.gov.uk/government/publications/health-profile-for-england-2018/chapter-1-population-change-and-trends-in-life-expectancy>
- ^{vi} Dreyer, K., Steventon, A., Fisher, R., & Deeny, S. R. (2018). The association between living alone and health care utilisation in older adults: a retrospective cohort study of electronic health records from a London general practice. *BMC Geriatrics*, 18(1), 269. <https://doi.org/10.1186/s12877-018-0939-4>
- ^{vii} House of Commons Communities and Local Government Committee Housing for older people Second Report of Session 2017-19 Report. Can be accessed from: www.parliament.uk.
- ^{viii} Horsfield, J. (2017). Later Life in the United Kingdom – Too old to care?
- ^{ix} Wright, D. M., Rosato, M., & O'Reilly, D. (2017). Which long-term illnesses do patients find most limiting? A census-based cross-sectional study of 340,000 people. *International Journal of Public Health*, 62(8), 939–947. <https://doi.org/10.1007/s00038-016-0929-2>
- ^x Kingston, A., Comas-Herrera, A., & Jagger, C. (2018). Forecasting the care needs of the older population in England over the next 20 years: estimates from the Population Ageing and Care Simulation (PACSim) modelling study. *The Lancet. Public Health*, 3(9), e447–e455. [https://doi.org/10.1016/S2468-2667\(18\)30118-X](https://doi.org/10.1016/S2468-2667(18)30118-X)
- ^{xi} Royal National Institute of Blind People. (2018). Key information and statistics on sight loss in the UK. Accessed on 19.02.2021 from: <https://www.rnib.org.uk/professionals/knowledge-and-research-hub/key-information-andstatistics>
- ^{xii} Action on Hearing Loss. (2021). Guidance for supporting older people with hearing loss in care settings | Action on Hearing Loss. Accessed on 18.02.2021 from: <https://www.actiononhearingloss.org.uk/how-we-help/health-and-social-careprofessionals/guidance-for-supporting-older-people-with-hearing-loss-in-care-settings/>
- ^{xiii} Alzheimer's Research UK. (2021). About | Dementia Statistics Hub. Retrieved 19.02.2021 from <https://www.dementiastatistics.org/statistics/numbers-of-people-in-the-uk/>
- ^{xiv} Royal College of Psychiatrists. (2018). Suffering in silence: age inequality in older people's mental health care. Accessed on 19.02.2021 from: https://www.rcpsych.ac.uk/docs/default-source/improvingcare/better-mh-policy/college-reports/college-report-cr221.pdf?sfvrsn=bef8f65d_2
- ^{xv} Delayed Transfers of Care Statistics for England, 2017 to 2018, NHS England.
- ^{xvi} The Kings Fund. Securing Good Care for Older People. Chapter 8. https://www.kingsfund.org.uk/sites/default/files/Securing_Good_Care_Chapter_8.pdf
- ^{xvii} Rock Health (2019). A pulse on the sector and areas in which we're excited to invest. Report accessed on 18.02.2021. Available from: https://rockhealth.docsend.com/view/trettfbr699eseqs?mc_cid=4bde214f25&mc_eid=f283d390df
- ^{xviii} Centre for Ageing Better. 2018. Adapting for ageing: Good practice and innovation in home adaptations. Available from: <https://www.ageing-better.org.uk/sites/default/files/2018-10/Adapting-for-ageing-report.pdf>