Future Care Capital response to the All-Party Parliamentary Group on Rural Health and Social Care Inquiry – technology opportunities and challenges

28th February 2019

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1.   Introduction: about Future Care Capital (FCC)

1.1   We are a national charity that uses the insight gathered through evidence-based research to advance ideas that will help shape future health and social care policy to deliver better outcomes for society. Our charity aims to facilitate and stimulate a national debate around health and social care provision. As a provider of insight and analysis, we use events, campaigns and policy papers to inform public policy. We also have a keen interest in how technology can transform health and social care outcomes. Beginning life as the National Nursery Examination Board in 1945, we have evolved throughout our 70-year history. We continue to have Her Majesty the Queen as our Royal Patron. More information about us can be found via our website: www.futurecarecapital.org.uk

2.   Summary

2.1   The impact of our ageing population is being hard-felt in rural communities across the country as demand for health and care provision continues to grow. The recent funding injection announced by the Government as part of the NHS long-term plan is to be welcomed but significant challenges remain. In addition, we are still waiting for the Government to publish its adult social care Green Paper, which most commentators agree is now long-overdue. Ministers need to pick up the pace if they are to develop a coherent cross-government response to our longevity which turns associated challenges into positive opportunities.

2.2   People who live in isolated rural areas must be empowered to play an active part in designing appropriate and responsive health and care services. In particular, the success of the Government's health and care tech strategy will be predicated upon the extent to which it is genuinely user-led.

2.3   This submission is informed by our own research findings, consideration of new and emergent technologies, and health and care initiatives that are already in place, under development or being piloted at this time.

3.   Context

3.1   NHS Digital has placed a great deal of emphasis on harnessing the power of technology to make health and care work better at the frontline. From a purely social care perspective, the Care Quality Commission has, to an extent, attempted to encourage care providers to embrace the power of technology to positively impact people's quality of care but there is still a long way to go before the sector fully embraces digital technology. The challenges have always been the cost, how health and care provision can pool resources to develop advances in frontline delivery, and what steps need to be taken to involve patients, the end-users, in the design of new technologies that meet their needs.

3.2　On the ground, NHS Trusts and local authorities are concerned about how to fund health and adult social care services in the future. The Local Government Association has estimated that adult social care services face a potential funding gap of £3.5 billion by 2025.[1] Rural communities face several barriers before they can embrace advances in health and care technology. In this response, we cover infrastructure challenges and raise the importance of ensuring rural communities are not excluded from the benefits of technological innovations.

3.3　There also remain concerns about elderly people living in social isolation in rural areas. Age UK conducted a detailed investigation into rural living for older people in 2013. They said at the time that the number of people aged over 65 with social care needs, who lived across rural England, was projected to increase by 70 per cent over a 16-year period.[2] The Secretary of State for Health and Social Care considers technology as one of his key priorities and his enthusiasm for innovation should be welcomed, but it is important to consider practically how all communities, with differing infrastructures, are able to adopt technology that improves their frontline health and care provision.

4.　**What tools and technologies in diagnosis are available or could be developed?**

4.1　The NHS has invested significant funds in diagnosis tools to improve early detection; in 2017, for example, NHS England committed £200 million over two years to accelerate cancer diagnosis.[3] There are examples of good practice across the NHS, including Leeds Teaching Hospitals NHS Trust, which is one of a number of cancer centres to establish a digital pathology centre of excellence. The Trust uses digital technology to scan specimen slides so that pathologists are able to makes diagnoses on a high-resolution computer display. It is claimed that this type of technology can help improve survival rates through early detection.

4.2　Recent research highlighted several barriers to older people in rural areas accessing primary care. A qualitative study involved interviews with older people and focus groups with health professionals in Norfolk. The research found that disadvantaged older people who lived in rural Norfolk experienced problems accessing primary care because of a range of factors, including the lack of GP appointments.[4] This lack of access only adds to the concern that older people in rural communities are being excluded from key services and technology might be able to help tackle this problem.

4.3　New ways of ensuring older people can access diagnostic services could be developed by harnessing the potential of data. The use of data to power

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[1] Local Government Association (2018), *Predicted rise in care needs*, available from: https://www.local.gov.uk/about/campaigns/lives-we-want-lead-lga-green-paper-adult-social-care/predicted-rise-care-needs-full

[2] Age UK (2013), *The Challenges of Rural Living For Older People,* available from: https://www.ageuk.org.uk/latest-press/archive/the-challenges-of-rural-living-for-older-people/

[3] NHS England (2017), *New technology, earlier diagnosis and better coordination of care in cancer, available from:* https://www.england.nhs.uk/2017/10/new-technology-earlier-diagnosis-and-better-coordination-of-care-in-cancer/

[4] Ford JA, Turley R, Porter T, Shakespeare T, Wong G, Jones AP, et al. (2018), *Access to primary care for socio-economically disadvantaged older people in rural areas: A qualitative study*, available from: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0193952#sec019

developments in artificial intelligence is unlocking new analytical capacity for diagnosing patients, effective triage and logistics.

4.4   There are also advances in predictive healthcare that could be explored further to help improve patient outcomes in the NHS. Using data to assess chronic disease risk, predict patient decline and reduce self-harm could become mainstream tools in the NHS because of advances in machine learning.

4.5   There are other monitoring tools that could be useful in a social care setting too. The University of Surrey has developed technology to identify the signs of infection among dementia patients. Scientists programmed internet-enabled devices with machine learning algorithms to spot the symptoms. This type of technology could be used by domiciliary care providers to help dementia patients remain at home for longer and reduce hospital visits.[5]

Recommendation 1: NHSX should commission further research into the potential of predicative healthcare tools to map and address specific health and care challenges in rural communities.

5.   What techniques can be used for social care support and loneliness?

5.1   There are wide ranging impacts associated with the health consequences of loneliness. Age UK claims that loneliness can be as harmful for our health as smoking 15 cigarettes a day. Loneliness can also increase your risk of premature death by up to 25%.[6]

5.2   In our Securing the Future report, we called on the Government to introduce measures and invest to create the environment for local government and civil society to tackle loneliness and social isolation. This local approach could help reduce the impact of what is widely regarded as a key characteristic of growing mental ill-health in our communities.

5.3   The Government's loneliness strategy was launched in October 2018. It majored on 'social prescribing' which encourages GPs to direct patients to community-based support to help improve their wellbeing. Since the launch, the focus on loneliness has seemed to lack momentum, and there are concerns that the funding committed in October will not be enough to deliver the ambitions set out in the strategy. The Government committed a further £1.8 million to an existing £20 million funding pot established in June 2018 to help charities and community groups expand programmes which bring local people together and aim to improve mental wellbeing. Further consideration will need to be given as to how resources can be better targeted to make a real impact in the numbers of people in later life who are trapped in a cycle of loneliness from which they are unable to break out.

5.4   One technique Hampshire County Council piloted in 2016 was to use technology through their library service to address social isolation. Two devices, a tablet and

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[5] Digital Health (2019), *Artificial intelligence spots infections among dementia patients in Surrey,* available from: https://www.digitalhealth.net/2019/01/artificial-intelligence-infection-dementia-surrey/

[6] Age UK (2018), *Later life in the United Kingdom*, page 10, available from: https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/later_life_uk_factsheet.pdf

Speakset box (which turns a TV into a video conferencing facility), were used to allow older people to communicate with family and health professionals, access online materials, shop and use library services.[7] This type of local approach, using technology and local library facilities, could point toward a practical way in which to tackle social isolation across rural areas.

5.5   In rural communities, the lack of public transport links is a growing problem, as communities become increasingly isolated because. For example, of bus timetable reductions impacting their ability to access local facilities. Since 2013-14 alone, rural areas saw bus routes cut by 7.8%.[8] The lack of public transport imposes restrictions on older people's independence. Whitehall should consider how to champion independent living in later life through the built environment. Helping older people to remain independent for longer is one of the clearest routes to addressing loneliness and social isolation. The Government should work with industry to introduce and uphold an Independent Living Guarantee enabled by a transformational programme of investment in 'pre-care' measures to ensure our homes and communities are 'designed for age and mobility', so that more people are able to take care of themselves and their families at home for longer.

Recommendation 2: The Government's loneliness strategy needs to be updated to focus more on championing independent living as a way to reduce loneliness and social isolation in later life.

6.   What clinical solutions can be delivered through technology?

6.1   New technology has the potential to dramatically enhance the way healthcare professionals carry out their role in a clinical setting.

There are three interesting examples that could help deliver better clinical outcomes:

6.2   Virtual and Augmented Reality

6.2.1   Both technologies have practical applications in healthcare. Virtual reality (VR) is a fully immersive simulated environment, whereas augmented reality (AR) is an enhanced version of reality which adds additional elements or images through technology. There are examples of AR and VR applications being used in the UK. The Royal London Hospital was the first to perform an operation to remove cancerous tissue using a VR camera.[9]

6.2.2   VR can also be a useful training tool for healthcare professionals. In the United States, hospitals are using VR to train doctors and nurses to reduce

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[7] Hampshire Country Council (2016), *Hampshire Library Service - Using technology to address Social Isolation,* available from: http://www3.hants.gov.uk/getdecisiondocumentfile?item_doc_ID=18093&file=2016-11-21%20CCSC%20Tackling%20rural%20social%20isolation%20in%20Hampshire%20Presentation.pdf&type=pdf

[8] BBC News (2018), *Britain's bus coverage hits 28-year low,* available from: *https://www.bbc.co.uk/news/uk-england-42749973*

[9] The Guardian (2016), *Cutting-edge theatre: world's first virtual reality operation goes live,* available from: https://www.theguardian.com/technology/2016/apr/14/cutting-edge-theatre-worlds-first-virtual-reality-operation-goes-live

training costs.[10] It is time for NHS England to consider a wider pilot of VR/AR technology as there is growing evidence to suggest that such technology benefits clinical practices. This type of technology does rely on fast internet speeds. One of the issues for rural communities is the lack of high-speed digital infrastructure to be able to use VR/AR technology in a clinical setting. The County Councils Network found last year that broadband speeds in rural areas are up to three times slower than nearby cities.[11]

6.3 Medical drones

6.3.1 The development of drone technology means that such devices are now able to take on a larger number of tasks. In rural areas, drones could become an essential part of the medical supply chain as advances in the technology mean they can fly further distances. A new delivery drone in Canada can carry 180 kilograms and travel up to 200 kilometres.[12] In Scotland, NHS Highland is looking at the potential for using drones to deliver medical supplies to GPs, hospitals and care homes.[13]

6.3.2 Recent examples of drones causing major disruption means that the Government will need to think carefully about the regulation governing unmanned aircraft. There clearly needs to be a balance between ensuring safety, planning specific flights paths for drones and preserving the freedom to exploit the potential benefits of such technology. Drones could significantly improve the flow of essential supplies across health and care provision in hard to reach areas – regulation should not hold back advances in this type of technology.

6.4 Medical adherence technology

Technology that can monitor drug adherence to manage complex conditions and post-surgery treatment plans could become more mainstream as an increasing number of devices and digital applications are developed. The problem is that patients often do not stick with their treatment plans. In 2015, the NHS estimated that £300 million of prescribed medicines are wasted each year.[14] There are several digital innovations available, apps that provide a video link direct to their pharmacist for advice, peer-to-peer pill reminders that send alerts to family members to prompt a patient to take their medicine, text

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[10] USA Today (2017), *Doctors are saving lives with VR,* available from: *https://eu.usatoday.com/story/tech/columnist/2017/07/28/doctors-using-virtual-reality-breathe-new-life-into-technology/506437001/*

[11] The Telegraph (2018), *Rural counties suffer broadband speeds three times slower than nearby cities*, available from: https://www.telegraph.co.uk/news/2018/04/06/rural-counties-suffer-broadband-speeds-three-times-slower-nearby/

[12] Commercial Drone Professional (2019), *Drone Delivery Canada unveils largest cargo delivery drone*, available from: https://www.commercialdroneprofessional.com/video-drone-delivery-canada-unveils-largest-cargo-delivery-drone/

[13] BBC News (2019), *Drone plan to carry medicines in Highlands considered*, available from: https://www.bbc.co.uk/news/uk-scotland-highlands-islands-47070326

[14] NHS England (2015), *Pharmaceutical waste reduction in the NHS*, page 6, available from: https://www.england.nhs.uk/wp-content/uploads/2015/06/pharmaceutical-waste-reduction.pdf

message reminders and smart pills that allow physicians to monitor a patient remotely. Hospitals in the United States are also using in-home medication dispensing technology to improve treatment compliance.[15] The use of in-home medical dispensing could be used in rural communities to help improve patient outcomes and reduce the need for hospitalisation in certain circumstances.

Recommendation 3: The Government should consider establishing a joint taskforce, involving Defra and NHSX, which aims to encourage the rapid development of new technological innovations that improve frontline healthcare in rural settings.

7. What role can technology play in primary and secondary and tertiary care?

7.1 Primary

7.1.1 In December 2018, the Government committed to allowing every patient in England to be able to access GP services digitally by 2024. As part of this commitment, NHS Digital will introduce requirements that aim to deliver interoperability between health and social care systems in a secure way.

7.1.2 There is also a drive to develop a greater use of online GP consultations. The challenge will be how to ensure rural communities, who may have limited access to the internet, are able to benefit from such digital innovations. This also applies to apps used for primary care. NHS England wants every patient to have access to online and video consultation by 2021. Babylon's GP at hand service (blocked from expanding by NHS England for a period of time because of concerns about people de-registering from their local GP) has now been given the approval to move into Birmingham.[16] There are concerns that elderly patients in rural communities will not be able to benefit from such digital advances to the same extent as their urban counterparts.

7.2 Secondary

7.2.1 There has been a great deal of focus on elective care over the last few years as demand for secondary care services has increased. An indication of this increase is the doubling of outpatient appointments (based on 2017 figures) since 2005. NHS England's response has been to roll out the Elective Care Transformation Programme (ECTP), which uses evidence-based interventions to help deliver better secondary and primary care outcomes. The challenge for ECTP is the rapid increase in demand and the lack of resources to see the plan through. It is too early to say if the NHS long-term plan and the funding package for England will help drive the ECTP forward. There have already been some interesting innovations in secondary care in

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[15] Healthcare IT News (2018), *Two hospitals turn to medication adherence tech to serve patients with mental illness, at-risk population,* available from: https://www.healthcareitnews.com/news/two-hospitals-turn-medication-adherence-tech-serve-patients-mental-illness-risk-populations

[16] Financial Times (2019), *NHS England lifts block on Babylon's GP at Hand service*, available from: https://www.ft.com/content/c2eab56e-2fb4-11e9-ba00-0251022932c8

an attempt to improve patient access, The Royal Devon and Exeter Hospital piloted tele-dermatology as a way to speed up access to secondary care.[17]

7.2.2   There are several elective options that older people in rural communities want greater access to - including hip replacement services. The number of orthopaedic operations, including hip replacements, had risen by a quarter over an eight-year period to more than half a million by 2016.[18] Imperial College Healthcare NHS Trust is treating patients with a new ceramic hip implant that aims to help patients return to physical activity after a shorter recovery time.[19]

7.2.3   Alongside plans to digitise primary care, the Government has also committed to fully digitise secondary care by 2024. The challenge will be to ensure that secondary care providers have the right infrastructure to deliver the move to digital records outlined in the NHS long-term plan. Funding for digitising providers is currently planned to end in 2021 and NHS England has acknowledged in the past that there is not enough money to complete the move. It is expected that a substantial amount of new NHS funding will be directed towards the digitisation agenda because the Secretary of State for Health and Social Care has prioritised the promotion of the digital agenda. This focus on technology is also a prominent feature of the NHS long-term plan and recent establishment of NHSX.

7.3   Tertiary

7.3.1   The rise in the number of older people developing complex conditions in later life is adding pressure on tertiary provision. Technology can offer new ways of managing tertiary care demands, particularly specialist stroke care. Advances in rehabilitation technology include nerve stimulation that boosts the effects of physical therapy which may help stroke patients regain arm use.

7.3.2   From a rural perspective, a tertiary trauma centre in Texas announced recently that it has implemented a tele-trauma program to let trauma surgeons provide virtual care to patients in isolated communities.[20] This type of bespoke tertiary care service is the kind of idea that the NHS should consider seriously if it is committed to delivering more person-centred care in the future. The stumbling block for such technology in England is the lack of physical infrastructure to accommodate such innovations. Rural England found last year that 24% of premises still do not have access to superfast

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[17] NHS England, NHS Improvement and the Royal College of Physicians (2018), *Consultant to Consultant Referrals Good Practice Guide*, page 23, available from: https://www.england.nhs.uk/wp-content/uploads/2018/11/elective-care-good-practice-guide.pdf

[18] The Telegraph (2017), *NHS rationing: hip-replacement patients needlessly suffering in pain on operation waiting lists,* available from: https://www.telegraph.co.uk/news/2016/12/31/nhs-rationing-hip-replacement-patients-needlessly-suffering/

[19] Science Daily (2018), *New hip resurfacing implant could lead to better outcomes for patients,* available from: https://www.sciencedaily.com/releases/2018/02/180207102308.htm

[20] Becker's Healthcare (2019), *Texas hospitals harness 'teletrauma' technology to care for rural patients,* available from: https://www.beckershospitalreview.com/quality/texas-hospitals-harness-teletrauma-technology-to-care-for-rural-patients.html

broadband and 58% of people living in rural communities could not access a 4G signal via the four major mobile networks.[21]

Recommendation 4: The Government should consider developing a rural innovation strategy that considers the needs of patients and frontline professionals in health and care.

8.   What research is needed?

8.1   There needs to be further research into helping sick, elderly and vulnerable people become better connected in rural communities, which can have a significant impact on health and wellbeing. The impact of public facilities closing, for example library closures in rural communities, can have a detrimental impact. Older people often rely on their public library to remain connected to their community. Libraries also allow older people to access the internet. If we are to avoid digital exclusion, a better understanding of the importance of public facilities to aid community wellbeing must be considered. In 2017 alone, 130 public libraries closed across Britain.[22]

8.2   Transport is one of the issues of most concern for disabled and older people living in rural communities. The Government Office for Science recent report on the Future of Mobility said: "Giving up driving is linked to a decrease in well-being and an increase in depression and related health problems, including stress and isolation, and also with increased mortality."[23]

8.3   During the passage of the Automated and Electric Vehicles Bill, we raised concerns that provisions in the draft legislation might prevent a significant number of people from benefiting from the new automotive technologies the Bill aims to encourage - namely, older people and those with a disability who do not benefit from a driving license – unless equalities measures are explicitly referenced and/or incorporated from the outset.

8.4   Helpfully, the Government Office for Science's recent report on mobility looked closely at the importance of designing a transport system that adapts to our ageing population. Adjustments for older travellers, such as 'dementia-friendly design', to improve their transport experience are also being considered.

8.5   There clearly needs to be more research undertaken to understand the potential of automotive vehicle technology to improve the health and wellbeing of older people.

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[21] Rural England (2018), *State of Rural Services Report 2018*, page 29, available from: https://ruralengland.org/wp-content/uploads/2019/02/SORS18-Full-report.pdf

[22] The Guardian (2018), *Nearly 130 public libraries closed across Britain in the last year*, available from: https://www.theguardian.com/books/2018/dec/07/nearly-130-public-libraries-closed-across-britain-in-the-last-year

[23] Government Office for Science (2019), *A time of unprecedented change in the transport system*, page 65, available from: https://www.gov.uk/government/publications/future-of-mobility

Recommendation 5: The Government Office for Science should be tasked by Ministers to work closely with local government and Local Enterprise Partnerships (LEPs) to look at how planning and economic development policy might anticipate the advantages of automated vehicles in helping elderly and disabled people, particularly in rural areas of the country, to remain independent in their community.

9. Who needs to be trained and how?

9.1   As the NHS adopts new technology there will be demand for a wider skill set across the service. There will need to be a pipeline of robotics engineers, data scientists and other technical specialists, who can create the new technological solutions that will improve healthcare and productivity in the NHS.

9.2   The Topol review has called for the NHS to attract global technical talent through new apprenticeships and Masters' schemes. These schemes could be implemented by expanding the NHS Digital Academy and introducing industry exchange networks. The NHS will need to consider how it manages the future skills demands across health services as a greater number of technical processes are developed for a clinical environment.

9.3   Both NHS and social care providers are facing a recruitment and retention challenge. The Topol review rightly highlights the significant skills gap in the NHS, particularly digital expertise. The review also focuses on how to addressing digital exclusion and how healthcare professionals will need to work closely with patients to ensure new technology does not lead to increased health inequalities.[24] It will be important for Baroness Harding (who is leading the development of the NHS workforce implementation plan and will report her interim findings in the spring) to consider adopting and investing in the workforce conclusions included the Topol review.

9.4   From a social care perspective, there is a need to develop digital skills across the sector. At a basic level the workforce needs a good working knowledge about how to manage digital records, how to handle personal care records appropriately and use digital skills as part of their direct care responsibilities. Care providers are also starting to use more sophisticated monitoring tools, e-prescribing and assistive technology.[25] At this moment in time, digital skills do not seem to be a major priority for the social care sector. In the latest Skills for Care *'the state of adult social care sector and workforce in England'* report, digital training does not appear as one of the top 10 categories of training recorded by their National Minimum Data Set for Social Care (recognised as a leading source of workforce intelligence for the sector). As the sector continues to embrace new technology, care providers will need to plan ahead and build in more training time to develop digital skills across the sector.[26]

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[24] NHS Health Education England (2019), The Topol Review, page 46, available from: https://topol.hee.nhs.uk/wp-content/uploads/HEE-Topol-Review-2019.pdf

[25] Care Quality Commission (2018), *The state of health care and adult social care in England 2017/18*, page 9, available from:https://www.cqc.org.uk/sites/default/files/20171011_stateofcare1718_report.pdf

[26] Skills for Care (2018), *The state of the adult social care sector and workforce in England*, page 79, available from: https://www.skillsforcare.org.uk/NMDS-SC-intelligence/Workforce-intelligence/documents/State-of-the-adult-social-care-sector/The-state-of-the-adult-social-care-sector-and-workforce-2018.pdf

Recommendation 6: The Harding review of the NHS workforce should accept the skills recommendations outlined in the Topol review about how to recruit and train sufficient numbers of specialist workers to service/develop new health and care technology. A plan should also be developed to factor in the future digital and tech skills needed amongst social care professionals.

10. Data sharing

10.1 Our report, [Facilitating Care Insight to Develop Caring Economies](#), explores the challenges local authorities face in planning for our ageing population. National policy is currently underpinned by publicly available data that reflects an increasingly outdated view of adult social care. The Government needs to invest in local efforts to deliver contemporary data-driven models of care.

10.2 The report found that present national and local planning is not fit for purpose and lacks a deeper understanding of the variations in care infrastructure between areas. There are critical gaps in the data available, its granularity and the resources in place to analyse it. If we are to plan for new models of care to meet the demands of our ageing population, central and local policy makers must fund better data collection and analysis.

10.3 We set out the following key recommendations as part of our care insight report:

10.3.1 Government departments should be required to publish details of the ways in which their policies align with the development of caring economies to ensure that they are designed to positively impact local care infrastructures.

10.3.2 The Government should invest in a new national data analytic capability to improve care insight for commissioners, providers and business and, thereby, support the appraisal as well as product/service design activities needed to expedite the introduction of new care models.

10.3.3 The ONS should improve upon the data it collects, curates and publishes where it impacts upon care insight to better enable others to plan and develop caring economies; in particular, it should ensure that changes to the census result in improvements to data about unpaid carers and internal migration amongst different age cohorts.

10.3.4 The CQC should require and provide access to improved data concerning self-funders – whether they are in receipt of domiciliary or residential care services – to better facilitate care insight for commissioners, providers and business.

10.4 We were pleased to see some of our report recommendations echoed in the Government's Census White Paper which the Office for National Statistics (ONS) was involved in developing. FCC's report specifically called on the ONS to improve

upon the data it collects for the Census where it impacts care insights. The White Paper acknowledges the need to better understand population dynamics so that decisions are made using the best available evidence, echoing FCC's call for more granular insights to learn about local care infrastructure challenges.

10.5   Progress on data sharing and the guidelines for handling such information have moved on recently. The Government recently launched NHSX, a new joint organisation which will be responsible for NHS national technology, digital and data strategy for the Department of Health and Social Care. Time will tell if NHSX can resolve some of the pressing challenges but also embrace the opportunities presented by data and the development of new technologies impacting urban and rural communities alike.

10.6   The launch of NHSX coincided with the publication of the Government's second iteration of its code of conduct for data-driven health and care technology.[27] What is missing from the code is some means to ensure the social, commercial and economic benefits of data-driven innovation are fairly distributed throughout the country. Our own primary research and analysis points towards the scope for a 'data dividend' in urban communities, in respect of which rural and coastal areas are liable to lose out.

Recommendation 7: In line with our care insight report, the Government should invest in a new national data analytic capability to improve care insight for commissioners, providers and business and, thereby, support the appraisal as well as product/service design activities needed to expedite the introduction of new care models.

Recommendation 8: In our forthcoming discussion paper we will recommend the co-production of a mechanism to distribute the benefits of data driven innovation fairly within and between integrated care systems by frontline health and care organisations, NHSX, HM Treasury and the Cabinet Office.

11.   <u>Conclusion</u>

11.1   Rural communities should not be excluded from the potential benefits of new health and care technologies. Our response has focused on the technological opportunities and challenges, particularly digital innovations, but also the promising advances that are being developed in clinical settings. We do also remain concerned about the current skills gap across health and care provision as new technology is rolled out. NHS and social care providers will need to develop more tech focused training opportunities in the future to mitigate workforce capacity issues.

11.2   Our recommendations are shaped by the belief that elderly people, in rural and urban communities, have the same right as younger generations to benefit from new health and care tech innovations. To deliver improved health and care outcomes, patients must have an active say in what technology they want and how it will meet their needs.

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[27] Department of Health and Social Care (2019), *Code of conduct for data-driven health and care technology,* available from: https://www.gov.uk/government/publications/code-of-conduct-for-data-driven-health-and-care-technology/initial-code-of-conduct-for-data-driven-health-and-care-technology

11.3   We believe that the Government's current focus on health technology is to be welcomed, but there must be a longer-term plan to understand how rapid technological advances can truly deliver better patient outcomes.

11.4   Future Care Capital believes that in order to effectively build on existing policy, Ministers and Whitehall officials could consider the following recommendations:

Recommendation 1: NHSX should commission further research into the potential of predicative healthcare tools to map and address specific health and care challenges in rural communities.

Recommendation 2: The Government's loneliness strategy needs to be updated to focus more on championing independent living as a way to reduce loneliness and social isolation in later life.

Recommendation 3: The Government should consider establishing a joint taskforce, involving Defra and NHSX, which aims to encourage the rapid development of new technological innovations that improve frontline healthcare in rural settings.

Recommendation 4: The Government should consider developing a rural innovation strategy that considers the needs of patients and frontline professionals in health and care.

Recommendation 5: The Government Office for Science should be tasked by Ministers to work closely with local government and Local Enterprise Partnerships (LEPs) to look at how planning and economic development policy might anticipate the advantages of automated vehicles in helping elderly and disabled people, particularly in rural areas of the country, to remain independent in their community.

Recommendation 6: The Harding review of the NHS workforce should accept the skills recommendations outlined in the Topol review about how to recruit and train sufficient numbers of specialist workers to service/develop new health and care technology. A plan should also be developed to factor in the future digital and tech skills needed amongst social care professionals.

Recommendation 7: In line with our care insight report, the Government should invest in a new national data analytic capability to improve care insight for commissioners, providers and business and, thereby, support the appraisal as well as product/service design activities needed to expedite the introduction of new care models.

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