



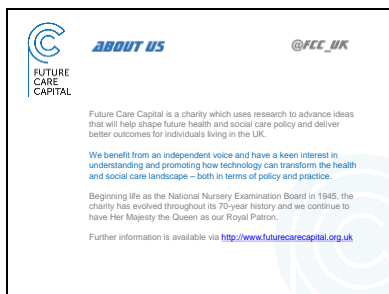
The Prime Directive

Much has been made of Matt Hancock’s tech vision to build the most advanced health and care system in the world. A great deal has also been said in recent weeks about the creation of what’s been dubbed ‘NHSX’. Now, without meaning to liken NHSX to Starfleet, and over-stretch an analogy...

I want to talk today about the potential for data, new and emergent technologies to transform the way in which we care for ourselves and one another in years to come. Because, it seems to me that rather more has been said about them in relation to health – as though social care is “below a certain threshold of technological, scientific and cultural development, and ought not to be ‘interfered with’” to the same extent.

I want us to think about how we might ‘go boldly’ and invite investors and entrepreneurs (with their superior technology) to work with commissioners, providers as well as carers and those in receipt of care, so that the next generation benefits from care that is truly fit for purpose in the C21st. And, I want to end by talking briefly about the scope for us to co-produce a new ‘Care Covenant’, underpinned by a digital contract, so that we are empowered to collectively steward wellbeing in our homes and communities as well as in formal health and care settings.

In short, I want Captain Jean-Luc Picard to: ENGAGE with those of us who are committed to evolving our care infrastructure.



About Us

- Future Care Capital (FCC) is a charity with a lengthy history;
- We benefit from an independent voice; and
- We are committed to understanding and prototyping the ways in which technology can transform the health and social care landscape.



FCC Reports

Here are three reports we've published over the course of the last 18 months by way of scene-setting:

Intelligent Sharing - <https://futurecarecapital.org.uk/policy/healthcare-data/>

- Progress in integrating health and care data has been 'slow', but there is progress to speak of, and it appears to be speeding up with Local Health and Care Record Exemplars and a plethora of related initiatives.

- How data is shared and made available for secondary uses – data governance – is of increasing interest as well as concern but, as ever, a great deal more is being talked about in relation to health than care data.

- It is vitally important we get the basics right and ensure data flows underpin high quality care for individuals. We also need to do much more to identify vulnerability and need upstream than the current focus upon patient and care management data is, in our view, liable to result in.

- We need - as a matter of increasing urgency - a frank dialogue with the general public, which is why the work of the Wellcome Trust's Understanding Patient Data initiative is so important. And, we must make the most of institutions whose priorities include developing and promoting data ethics.

- We also need a grown-up conversation about the role of health and care data in economic development and, where there is now a Code of Conduct for Data Driven Health and Care Technology in place, it needs **a great deal** more input from social care commissioners and providers than has been the case to date.

Securing the Future – <https://futurecarecapital.org.uk/policy/securing-the-future/>

- We need to plan and design the provision of health and care for every generation if we are to tackle the 'care deficit' and secure the future. Agreement upon the direction of travel and Future Care Guarantees to support improved planning by commissioners and providers as well as the general public would represent a significant first step.

- So, we invited leaders from the public, private and third sectors to look ahead and consider how policies and spending decisions across Government that will impact health and care outcomes could better reflect the challenges and opportunities we can expect to face five, ten and fifteen years from now.

- We concluded that a new settlement for health and care or what we've termed a 'Care Covenant' is needed to offer greater security for everyone in society ... and I'll return to the Care Covenant towards the end of what I have to say this evening.

Facilitating Care Insight - <https://futurecarecapital.org.uk/policy/facilitating-care-insight-to-develop-caring-economies/>

- Last Autumn, we published a report in which we'd hoped to compare the resilience of 'care infrastructures' in different geographic locations. In practice, it proved challenging to obtain relevant data in order to do that.

- So, instead, we published a report which made a number of recommendations about what data are needed so that social care commissioners are able to plan ahead and help stabilize local care markets in conjunction with providers.

- We were pleased to learn that the Office for Statistical Regulation, the ONS and the Department for Health and Social Care found it useful and will be taking forward activities which echo some of our suggestions in due course.

All of this leads neatly onto a brief foray into how we might better harness the value of care data - which, in many respects, underpins each of the technologies I want to then touch upon to help stimulate discussion.



Data

- What is 'care' as distinct from 'health' data?
- Are we talking about what some term 'administrative data' – the management information collected by social care commissioners and providers?
- Or, is there data about us out there in the electronic ether which more readily indicate our 'care of self' or 'care for others'?
- Well, in truth, it's complicated...



Health and Care Data – Supply-side Complexities

There are, at least, three types of data available which may be of interest:

- The data controlled by publicly funded and accountable health and care organisations;
- The data controlled by private/independent organisations which provide pertinent services and are commissioned by the state and individuals; and
- The data controlled by broad-ranging private entities whose core business might not be directly related to care but which might, nonetheless, have the potential to generate pertinent insights into a population or individual's care.

Words and phrases that immediately spring to mind include:

- fragmented
- out of sight/out of reach
- untapped



The Utility of Consumer Data for Care

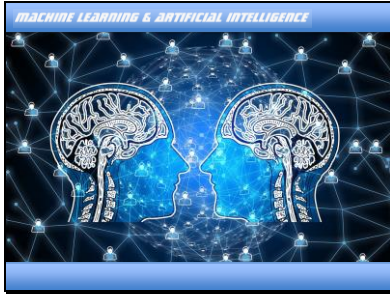
A great deal of emphasis is being placed upon publicly controlled data. Much more needs to be done to align the data that is or, else, could be generated by private and independent providers of care if we are to obtain a 'whole system view'. But, I think we must also ask: how might data controlled by private enterprises also be utilised? How could it help deliver better services and improve outcomes for vulnerable individuals?



The Internet-of-Things

A plethora of connected devices – ranging from smart phones and smart meters to smart fridges and voice assistants – are nowadays generating data from or about us. This is what is commonly referred to as the internet-of-things and there are broad-ranging pilots and initiatives underway at present to explore the scope for the IoT to improve care provision - including, for example, efforts to identify dehydration through the use of pertinent sensors as well as an array of memory impairments.

But, could we be doing more? Is the crisis in unmet need such that we should be thinking along the lines of smoke detector installation in homes or, else, the 'smart care' equivalent of the 'warm front scheme' to boost independent living through subsidies to stimulate the take-up of care tech at home? How can we 'bake in' the IoT for care in the planning and design of new homes and communities?



Machine Learning and Artificial Intelligence

We've talked a lot, so far, about the generation and management of data, but what could we actually do with it?

In the health world, there's a great deal of excitement surrounding the potential for machine learning and AI – for example, people might have heard about the work of DeepMind and Moorfields Eye Hospital and their quest to put 1,000s of retina scans to new uses, and they might also be aware of Kheiron Medical's work to programme machines to read mammograms as the workforce crisis in radiology deepens.

But, once again, rather less has been said about its scope to improve the ways in which we might care for ourselves and others. Take, for example, the recent independent review published by Eric Topol about how to prepare the healthcare workforce to deliver the digital future – where is the equivalent for commissioners and providers of care?

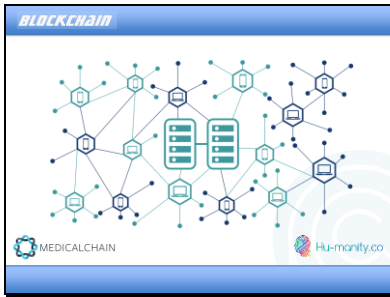
The workforce notwithstanding, the key words or phrases I think you should take away here are:

- prediction
- early intervention
- prevention

If anyone's seen Tom Cruise in the film *Minority Report*, they will know about 'pre-crime' (and, if they've seen news about 'predictive policing', associated concerns) – what might 'pre-care' look like? Could it be something positive we work together to evolve?

What if we could:

- Use consumer data and machine learning to help us tackle loneliness, isolation and mental ill-health (think about social media and mobile phone and consider how the open banking initiative could 'do more')?
- Use a mix of public sector-controlled data and, potentially, also, consumer data to reduce the demand for health and care services through the identification of vulnerability, early intervention and/or preventative measures (think about Trading Standards and voice assistant data)? Could we augment or, even, automate social prescribing?
- Tonight's event is part-sponsored by Savills – what if we could use a mix of administrative and consumer data to better understand internal migration amongst different age groups and plan ahead in areas which experience net in-flows of people at particular points in the life course (think about how we might better harness real estate and land registry data)?
- How could banking, DWP and HMRC data help local authorities and private providers better anticipate the proportion of people who will need state funding or else self-fund their care?



Blockchain

Now, speeding up as we get a bit more sci-fi ... others here may be aware of initiatives that are testing the potential of blockchain technology to transform social care ...

Certainly, there are initiatives in health such as Medical Chain and Hu-Manity, but I have been wondering for some time now: how might decentralized public (or permissions-based) ledgers be deployed in respect of social care?

Without having the time to explain in any depth what blockchain technology is - just try to imagine for a moment: an immutable, real-time, ledger of care sought and provided in a community...what effect might that have upon what we term “unmet need” today?



Slide Eleven: Cryptocurrencies

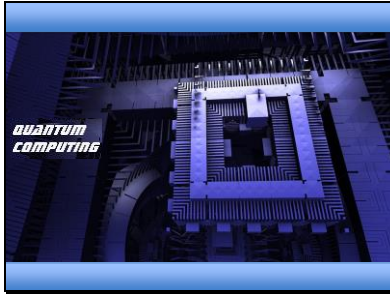
Could such a ledger be constructed so as to also enable virtual transactions between those seeking and providing care? Does anyone here think that there may be positive scope to introduce a ‘Care Coin’?

Here, we see cryptocurrencies with which people might be familiar, and others which might be new – including, ClinicoIn which claims to reward users with cryptocurrency for engaging in healthy activities. We also see ‘Stem Cell Coin’ – a Japanese start-up built on the blockchain and claiming to use AI – which states that it will deploy tokens to enable payment for leading-edge ‘regenerative’ therapies and medicine.

In the immortal words of Mr Spock: “live long and prosper!”

Or, is it a case of: “it’s life Jim, but not as we know it?”

Could a B2C marketplace for care products and services be established and make use of a Care Coin?

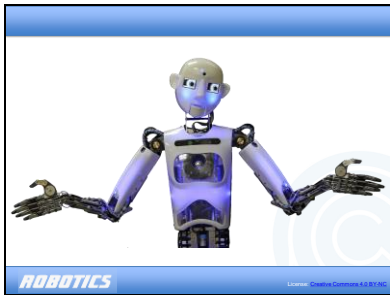


Quantum Computing

Last October, the EU pledged to give €1 billion to over 5,000 quantum technology researchers over the next decade, while venture capitalists invested some \$250 million in various companies researching quantum computing in 2018 alone.

So-called quantum computing is widely expected to 'go large' in science and finance in the first instance, but ... could it also be deployed to transform care outcomes?

Certainly, I've made much of big data and mentioned that real-time data might be used to transform care, so we might need us a great deal more processing power in future ... but, here, in truth, we reach the limits of digital developments...and I'm not sure we will need quite so much oomph as the Hadron Collider – at least, not yet.



Robotics

I encountered this guy at the Science Museum last year and, his ability to speak Mandarin and recite Shakespeare aside...

I think we must consider how robotics in the round could help facilitate independent living – noting that over 80% of people are said to be against the use of robots in care according to a recent [survey](#), so we've a ways to go before the general public agrees.

But, let's not forget about the 'smart trousers' being pioneered to steady us as our muscles grow weaker with age, and the potential to adapt robotic arms long-since used in car factory settings to create safer environments for cooking at home, when we think about how robotics in the round might prove beneficial.



Drones & Pavement Robots

I have a minor confession to make – I'm fascinated by drones!

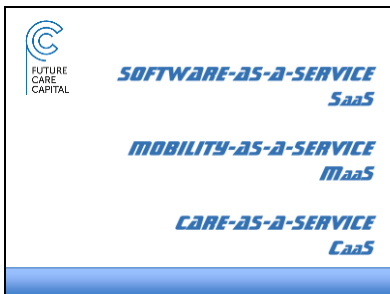
Here, we see a prototype ambulance drone and another which could be carrying a defibrillator or medical supplies - as is being trialled in the Highlands at present.

I'm afraid I couldn't get a pavement robot image that wouldn't get me into trouble but, again, just imagine them delivering meals-on-wheels and medicines door-to-door in the not too distant future.



Autonomous Vehicles

And, last but not least, we have autonomous vehicles – a new industry the UK is eager to pioneer ... but to what extent are we working to ensure they come ready and adapted to empower carers, disabled and elderly people?



Care-as-a-Service

Now, pulling together some and, possibly, all that I've rattled through ... some of you may have heard of Software-as-a-Service or Mobility-as-a-Service – and, if not, you might well have an Amazon Prime Account.

We used to buy discs and manually install the most up to date operating system on to our computers. Nowadays, we 'rent' a copy and download the latest version from the internet on an annual basis. We used to buy individual tickets to get from here to there. Now, we have oyster cards and, in some major conurbations around the world, travel subscriptions linked to cards that permit us to take bikes, buses, trains and taxis.

Is there positive scope for 'Care as a (subscription) Service'?

Could it offer a package of products and services to entice a range of audiences and age groups to encourage self-care throughout our lives – rather than care being something we only ever seek 'as and when needed'?

Could care be *re-branded* as a 'must have' and sought after just as eagerly as a subscription to Netflix?



The Care Covenant

Well, irrespective, I hope that it's clear from my quick canter through data, new and emergent technologies that there is plenty of scope to transform the way in which we care for ourselves and others if we move to embrace our brave new world. And, at Future Care Capital, we are firmly of the belief that that requires us to co-produce a new settlement, fit for purpose in the 21st Century, which we have termed a 'Care Covenant'.

To be clear: we are no longer living in post-war Kansas – or Kidderminster – for that matter!

The health and care services brought about by Beveridge and other giants of his age are on the cusp of being massively disrupted – as much by demographic change as by technological advancements being spear-headed by global corporates. We need to redefine how we propose to plan ahead and care for ourselves and one another.

A Care Covenant must be underpinned by a new digital contract so that we guard against a digital dystopia characterized by data-driven discrimination; we must not be left feeling uneasy about the fine line between well-intentioned 'prediction' and heavy-handed surveillance. And, whilst there is doubtless much to be gained from what we might think of as more mechanical advancements, we must also endeavor never to lose the human touch.



Courage Calls to Courage Everywhere

Ultimately, courage calls to courage everywhere – and, as Jeanette Winterson makes plain in her recent book of the same title about the womens’ equality movement, it is incumbent upon us to ensure that care - with its overwhelmingly female ‘workforce’ - does not shy away or simply leave the tech to the guys. Otherwise, we risk perpetuating the gender bias that could perhaps be said to account in some important respects for care remaining the ‘poor relation’ to health where harnessing technological advancements and innovation is concerned.



Voyager

The good news?

We are all of us on a journey – albeit, we have as yet to reach ‘warp speed’. But, we are led by a determined woman, and there’s always the prospect of finding our way home from our current position – even though, at times, we may feel lost (or better: delayed by unforeseen circumstances).

I am, of course, referring to our Minister for Care and the illusive Social Care Green Paper – but will it take us into hyperdrive? Only time will tell...

Let us hope that we do not have to wait until the year 2404 to make significant progress when, in Trekkie terms, the Federation celebrated the tenth anniversary of Voyager's return to Earth after 23 long years spent floating around in the Delta Quadrant...