Smart and Connected: Health and Social Care

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01 Foreword

Smart health and connected care

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We are delighted to bring you this latest paper in Microsoft's vision for Smart Places & Connected Communities, exploring the potential of emerging technologies to transform the integration of health and care in adult and children's services.

Microsoft is focused on democratising both data and artificial intelligence (AI) tools to bring the power of emerging technology into the hands of those transforming our public sector and empowering those that deliver these vital services.
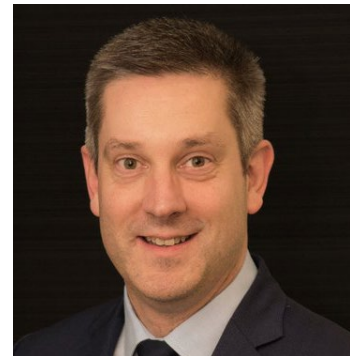
This paper explores how technology is evolving and changing the 'vision of the possible' and the technology choices as the public sector transforms its citizen services. Thanks to cloud, open standards and interoperability the traditional 'upgrade or rip out and replace' technology path has shifted to one of making the most of our existing investments and systems - and the knowledge that it contains - by integrating the latest technologies to augment our staff and deliver informed, intelligent services around the person.

The care of our older people and our vulnerable is undeniably one of the most challenging issues we face as a society today.

By putting mobile working, data intelligence and leading edge technologies into the hands of our healthcareprofessionals, social workers and carers we can enable them to improve services, improve outcomes and change for the better the lives of those they care for.

A key goal for both health and local government is the effective integration of health and social care delivery.

Traditionally the two have been delivered in silos, but it is now widely recognised that the interdependencies between them require a more holistic approach, with professionals from both sides having appropriate access to the data produced by their counterparts. In some parts of the country this has prompted the development of integrated health and care records, with the promise of more to come, but these only go so far in providing for more joined up care.

The reality is that real life is complex and complicated with multiple impacting factors. Knowledge and data lie at the heart of this complexity and provide the key to clarity.

Enabling health and care professionals to access our records when we are at our most vulnerable allows them to understand our needs and make the best decisions.

Empowering people with access to this information empowers us to make the right decisions for ourselves and take control of our future health and care.

It is a win-win that works for all - data saves lives and improves care.

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But austerity will have implications for our health and care organisations for the foreseeable future, making it difficult to explore new ways of thinking, working and delivering.

I believe that it is therefore essential that the public sector take advantage of developments in evolving low cost collaboration tools, cloud, data and AI to tackle to take health and social care to the next level.

This paper explores three key scenarios:

- Connected health and care, illustrated within the context of the 'cold homes care pathway';
- Transforming children's services with data; and
- Reimagining the integration of health and care around the person through connected, intelligent use of data.

I hope that this publication will give you ideas and inspiration for your own digital journey in the quest to deliver smart health and connected care.

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02 A connected challenge

The demands of meeting the statutory requirements of social care are probably the most intense source of pressure on local authorities as they approach the 2020s.

In June 2018 the Association of Directors of Adult Social Services estimated that this sector alone accounted for 38% of the total spend by councils in England[1], and the Institute of Fiscal Studies (IFS) with The Health Foundation estimated the annual spend on caring for adults at £21.2 billion[2]. And with an aging population this pressure can only grow.

Meanwhile, related demands on the NHS in the care of our older people are no less challenging – with the news headlines of 'bed blocking' by those well enough to leave hospital but still requiring care to be provided, now familiar to us all.

There is a general recognition that the path from hospital to home must be improved, and that ensuring that people stay well and safe in their own homes thereafter is essential.

The pressures, however, do not just lie in the domain of elderly care. The financial cost of children's services is also growing, estimated by the IFS at £9.9 billion today. In addition, both adults and children's services are sensitive and potentially controversial elements of local government's responsibilities, with the potential for lasting reputational damage when things go wrong.

A consensus has arisen that new technology solutions will play a major role in coping with these demands, responding to the need for better data sharing – subject to robust governance and protocols – between teams within councils and with other public sector agencies. Social workers will only be able to provide timely, high quality care with the all the information they need to make well judged decisions – and that means having access to the right digital tools.

There are priorities within this. Collaboration is at the heart of effective, integrated health and social care, with health and social workers, care provider agencies and care workers needing to keep each other properly informed of the wellbeing and circumstances impacting an individual. Real life is not confined to the silos of the public sector - staff from multiple organisations, from the NHS and local authorities to schools and the police are often involved with the same person but valuable information is often locked away in the depths of individual systems.

This comes with the need for organisations to make themselves more efficient – financially in their operational performance – by reducing the manual effort where possible, cutting out duplication, and ensuring that everybody involved has a clear picture of the individual they are supporting. Along with this is a drive to support vulnerable people in their own homes, often with the use of assistive technology, and provide more personalised care that reflects the needs of the individual.

[1] ADASS Budget Survey 2018 https://www.adass.org.uk/media/6434/adass-budget-survey-report-2018.pdf
[2] Securing the future: funding health and social care to the 2030s https://www.ifs.org.uk/uploads/publications/comms/R143.pdf

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Integrating health and care records

One key factor stands out in the provision of adult social care – the need for integration with health information. While other factors often come into play – such as poor housing or domestic abuse – the majority contain some element of healthcare for an elderly or vulnerable person. Social care providers need to liaise closely with healthcare organisations, so they understand the nature of the person's conditions, the treatment they are receiving and what kind of support they need in their homes.

The failures of this become most apparent when the media coined term 'bed blocking' occurs. This is when people are ready for discharge from hospital but the process is held up because of the lack of resource in follow-up care. But it extends to other areas. For example, it can help a social worker to know if a person has been diagnosed with mental health issues, or if a physical ailment treated by a GP which limits their scope to live independently.

Of course, there has to be the correct balance between sharing the relevant information and respecting the boundaries of privacy, and this requires proper information governance and the right sharing protocols. But there is a widespread understanding that the two sides will work most effectively when they have a grasp of what each other is doing to support a vulnerable person.

NHS England, NHS Digital and the Local Government Association have been working on this challenge both individually and together.

During 2018, NHS England awarded £7.5 million each to five regions to become Local Health and Care Record Exemplars (LHCRE)[3]: Greater Manchester, Wessex, One London, Yorkshire and the Humber, and Thames Valley and Surrey.

These regions are creating shared records for improving and coordinating individual care across a region, involving health and social care so that, regardless of where an individual is receiving care and support (at their GP, hospital, community hospital or even at home), the health and care professionals looking after them can access the right information, at the right time.

There are already many shared health and care record programmes in use, but the exemplars are charged with forming the common standards and blueprints that can extend across the country.

Meanwhile the LGA and NHS Digital's Social Care Digital Innovation Programme[4], is providing grants for projects with the aim of learning lessons and providing solutions that can be shared among local authorities.
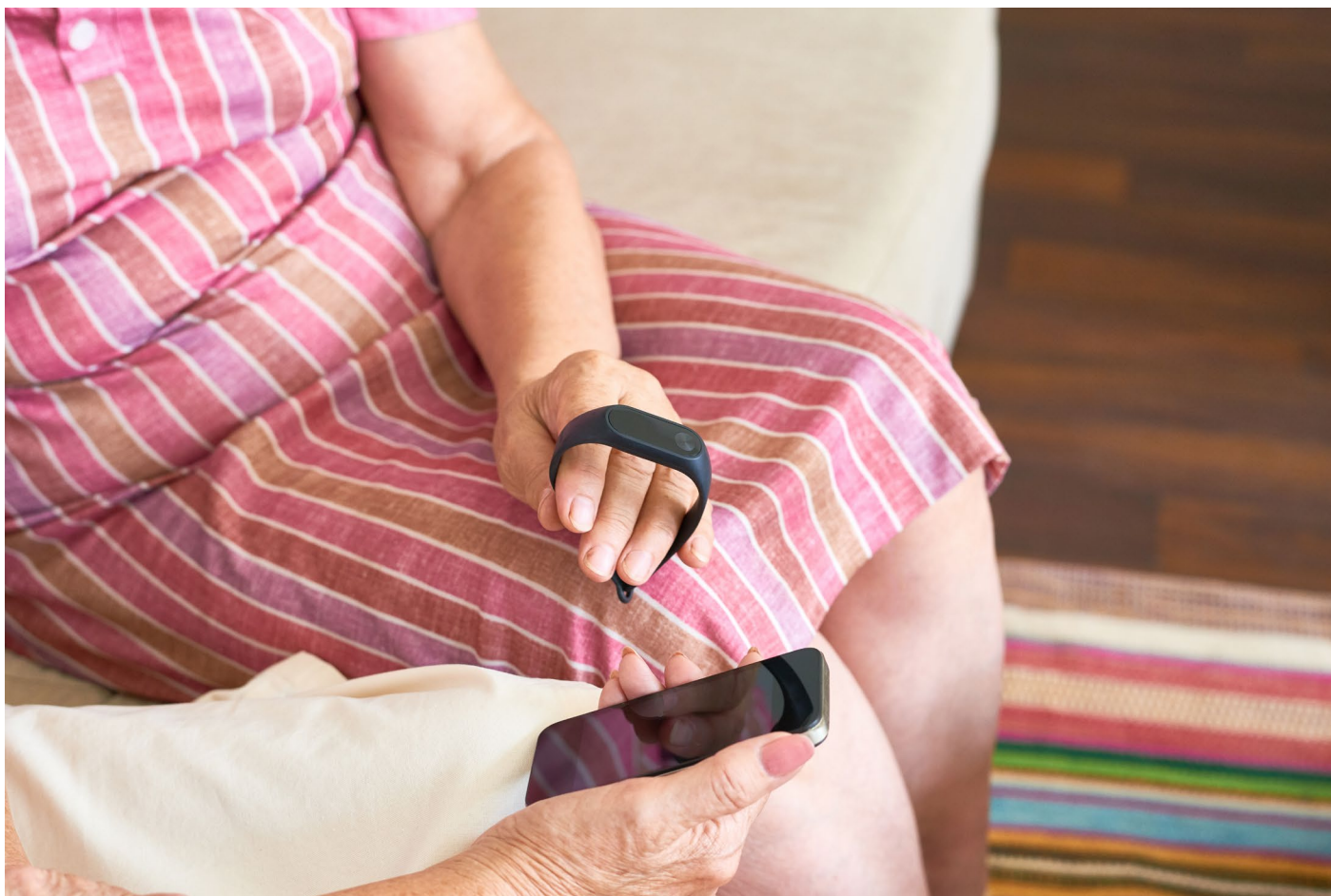
But there is scope and opportunity for councils to make progress on integrating services around people and transforming the ways in which they work alongside these core initiatives.

And this does not involve a wholesale 'rip and replace' of their existing digital systems. There is no need to invest in big new, all-encompassing databases that involve heavy costs and come with significant implementation risks. Instead there is plenty of scope for a more evolutionary approach, taking advantage of the latest technologies and

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[3] https://www.england.nhs.uk/2018/06/local-health-and-care-partnerships-covering-23-5-million-could-save-lives/
[4] https://www.local.gov.uk/our-support/our-improvement-offer/care-and-health-improvement/informatics/local-investment-programme

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the innovation among smaller companies to deal with specific elements of the care process. These new approaches can be integrated with existing IT infrastructures, using the data from systems already widely used.

This points to a trend that is developing among organisations that use the Microsoft technology stack as part of their day-to-day operations. They are able to harness solutions developed by the company's partners who are breaking new ground in the use of data systems, intelligent automation, AI and augmented reality, drawing on the capabilities of core platforms such as Dynamics 365, Microsoft 365 and Azure cloud. These pioneers are already showing that it is possible to build on what is in place rather than take it all out and start again.

It is possible to make progress on the pathways for social care – for adults' and children's services – basing the approach on the care requirements, the supporting data flows and the potential for improving delivery at each stage in the process. It amounts to making things better a stage at a time,

combining the new technology with the systems that are already familiar to staff in councils and other agencies.

The delivery of high quality health and care around the needs of the individual depends on the appropriate availability of information, and the potential for this is increasing with the emergence of new technology solutions.

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03 Cold homes: a connected care pathway

Cold homes & elderly care

One prime opportunity for technology enabled care is in the creation of a connected care pathway aimed at preventing the early death and ill-health that can arise from older people living in cold homes.

This section outlines the elements of such a connected care pathway using this cold homes scenario as an example of how different digital technologies could be used within the sector.

The issue is complex and the permutations of needs, support and outcomes are myriad. Extending the scope and reach of existing systems along this pathway could make a big difference to the lives of many people and provide significant savings for the public sector.

In 2016 the fuel poverty charity National Energy Action estimated that cold homes were costing

health services £3.6 million a day, and that local health and wellbeing boards were spending £10 million a year on treating patients living in cold, damp housing[5]. It described the issue as a public health emergency that dramatically reduces the life chances for vulnerable people.

While the roots of this lay in factors beyond the reach of health and social care staff, an effective care pathway can enable them to identify people who are most at risk and take preventative steps; and support the process if they do have to spend time in hospital.

Scale & focus

There are a number of steps within a cold homes care pathway. The first is to develop a strategy that makes distinctions between the many at a relatively low level of risk and the few who are more likely to need care, and to identify them as early as possible.

It is difficult to get started without a clear idea of what is going on nationally, locally and in people's homes to develop a risk profile for groups and individuals. It needs a clear view of the available data to spot the key factors and make the assessments, combined with the provision to take action when touchpoints are reached.

There is a massive amount of data around the

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5 https://www.nea.org.uk/media/news/260216-01/
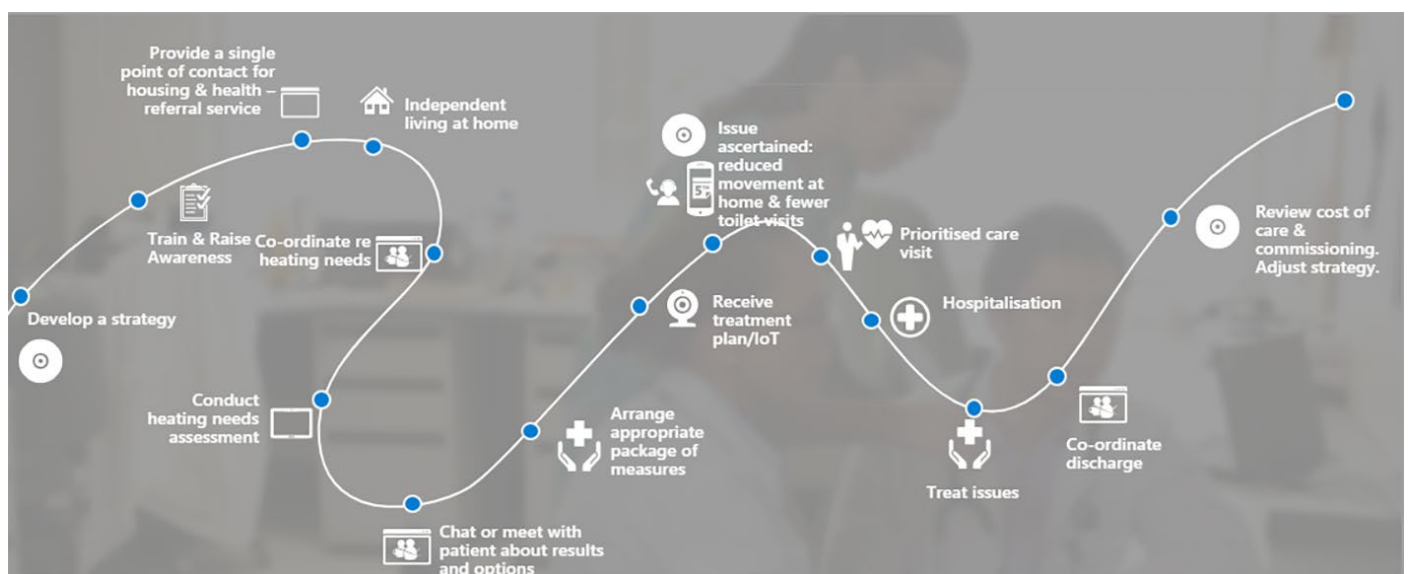
system to support this, but most of it is stuck in silos that can even keep it away from other teams inside an organisation. Local authorities and healthcare bodies seldom cross-reference each other's data, which is often where the key to assessing risk can be found. One of the big challenges is to pull all this information together in a way that makes it easily digestible, enabling users to spot the warning signs for specific groups and develop their strategies for dealing with the problem.

Collaboration & communication

The next step is to raise awareness of the strategy among local service providers, train teams to understand their roles within a care pathway and enable them to work together.

This is where Microsoft's productivity tools can be a great asset. Staff in many organisations are already familiar with Microsoft 365, going beyond the basic email function into applications that can be used for knowledge sharing and collaboration across organisational boundaries.

Many are familiar with OneDrive for storing and sharing files and documents; SharePoint as a platform for document management and storage, and for building intranet portals; and Skype for Business that enables video and audio calling and instant messaging.

These collaboration tools have been significantly enhanced with the development of Microsoft Teams, bringing all these capabilities and more into one secure collaboration space for multi-disciplinary teams.

Teams makes it possible to bring together a group of people in different organisations and at different locations for a dialogue, to share ideas and build an understanding about the steps to take within a care pathway. Most organisations will feel comfortable in doing this to formulate the general strategy and to support specific people in need.

Meanwhile, as can be seen from the example of Medway, empowering social workers with these technologies and mobile working can transform the way they work and dramatically improve service delivery.

Medway social workers transform the way they work

According to ICT change manager at Medway Council, Bob Wilde, the working practices for social care workers had changed little in 15 years. Work was predominantly paper based – with social workers collecting data and returning to the office to feed it into the system. They were struggling to keep up with the paper work, complete their visits and deliver a satisfactory service, so the council took over 420 social care workers on a rapid journey through a time portal and on to the latest technology in the 21st century.

Says Wilde: "Using the latest Microsoft products - hardware and software - we have transformed the operation of the social care workers. We have enabled direct access and conditional access to provide a seamless log on to the Medway network. Microsoft Surface Pros with facial recognition make logging on even easier. We have also used the Surface Pro LTE (with SIM card) to provide access using either Wi-Fi or 4G connectivity." This has provided many benefits, including: inputting data directly into the back office system whilst they are with clients; reducing duplication of work; assessments provided whilst they are with clients; agreeing a care package, in most cases, reduced from two weeks to two hours; capture electronic signatures; sundry questions can be answered whilst with the client (search on internet or back office).

As an example of how transformational this has been for both social workers and their clients, one social worker recently simply expanded the signature box on a PDF document to fill the screen for a 95 year-old man to sign – the gentleman was delighted as it was the first document he had been able to sign for some years.

Medway's team is passionate about the benefits of this move - Tayler Bennett, lead pilot social care worker and colleagues have videoed their thoughts. View here.

Colleagues Louise and Eleanor talk about how mobile working has impacted their role. View here.

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Helping people to help themselves

An important element of the strategy should be to pre-empt the need to support people who are not highly vulnerable and/or funding their own care, with the key question being how do you help them to help themselves?

The focus then is to help them easily find the information they need and reach out to their local authority if they feel they do need more support. This reflects a core feature of the Care Act that a council should make the information on its responsibilities and services relevant to everybody, whether or not it provides them with care.

All councils now provide such directories but more enhanced tools are becoming available that can support this part of this example cold homes care pathway, helping people to better help themselves and then buy additional equipment and support if they chose. With the advent of personal budgets, these tools are now expanding into 'virtual wallet' capabilities, enabling the council to monitor and automate the spending of personal budgets.

Newcastle deploys bot to help navigate social care

Newcastle City Council used the Microsoft Bot Framework to develop ASCbot, a web based chatbot that helps people to navigate social care information outside office hours.

Now in public beta ASCbot uses the machine learning and natural language capabilities within the framework to understand queries and help the customer to find service equipment, gardening or laundry services, carer and council tax support information or help people to apply for a social care assessment. The in-house development team has built a number of trigger words and context within the bot so that it can understand and recognise when direct contact with a social care advisor is necessary and hand over appropriately.

Identifying risk & monitoring

Another crucial step is in taking a predictive approach to protecting people. One of the big challenges is to go beyond acknowledging the large number of people at a theoretical risk and identifying the smaller cohort for whom it is a more immediate threat and prioritise resources on targeted preventative action.

The potential for this is growing with the spread of data from assistive technology and internet of things (IoT) devices, which can provide a picture for care providers and social workers of how an elderly person is faring at home. These can bring together in-home conditions, such as temperature

Social Intervention Radar for Hull

A £65,000 grant from NHS Digital – part of its programme to promote predictive analytics and digital information sharing in care – is supporting a partnership between Upstream Health and Hull City Council to develop a 'Social Intervention Radar'. This draws on Upstream's Intelligent Interventions solution to improve the sharing of data from health and social care teams to provide a more holistic system, in which clinicians will have a better understanding of the circumstances around an individual.

It is aimed at encouraging a more proactive delivery of healthcare aligned with social care and includes functions for identifying cohorts of people for targeted care, a real time radar to identify the need for interventions then track their progress, and integration with workflow solutions to automatically generate actions. As part of the pilot running across Hull, it has been customised with a live intervention list and a map of the city so that users with permissions can view patients being actively managed by their organisations.

According to Hull City Council's portfolio holder for adult social care and public health, councillor Gwen Lunn: "The Radar has the potential to radically streamline the sharing of information, making it easier for healthcare professionals to access data which will inevitably benefit patients and services."   https://www.upstream.health/

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and humidity, with demographics and open data and combine them with an authority's systems data to ensure that picture is detailed yet emphasises the most salient points.

This makes it possible to develop a list of the most vulnerable, and compile personalised plans for support.

Microsoft partner InformedActions has been working with councils and housing associations to create SafeHouse, a solution that brings sensor data from remote monitoring, predictive analytics and resource optimisation to provide the data orchestration, especially around that from IoT devices. This can take in temperature, humidity, light levels, movements and noise and subject the data to algorithms that provide an indication of whether an older person's normal routine and actions are falling outside norms which might be a cause for concern about their wellbeing. Enriching this data with additional data sets such as weather, traffic and socio-economic data enables prediction of problems such as fuel poverty, damp and mould, security concerns, lack of rent payment, tenancy churn and so on, and provides the opportunity for pre-emptive action to be taken.

Taking this even further, Microsoft partner itelligent-i has been working with a number of county councils to create an intelligent dashboard, using a platform to pull the strands of data together and give

different teams a view of what they need to know.

It has enabled secure sharing of data through a data lake and Active Directory, taking in not just council and NHS sources but also data from other organisations, such as the police, and sensors in people's homes.

The platform draws on this to provide actionable insights, identifying cohorts and individuals at risk

Kent's analytics platform is fit for the future

itelligent-i is working with Kent County Council to provide an updated suite of analytics across both children's and adult social care services. Like many local authorities, Kent uses a range of systems to capture data across social care, meaning many silos of data across the organisation. Reporting tools were no longer fit for purpose due to increasing costs and the council was faced with the prospect of spending more simply to maintain the status quo. In addition, a number of line-of-business systems were being upgraded and decisions had to be made about storing legacy data sets and procuring new reporting tools. The council decided to modernise analytics across the organisation by implementing the cloud-based itelligent-i Business Analytics Platform. Not only does this provide a solution to the immediate needs of the social care departments, but it also provides a platform that can support analytics across any service in the future.

All analytics across children's social care, troubled families, 'lifespan' (0-25 year olds) and adult social care is now being produced with the itelligent-i Business Analytics Platform, with data extracted daily from the relevant source systems. All reporting previously produced with the legacy tools is being replaced and fully automated, providing capacity for analysts to understand key drivers for demand and service user profiles. Although the project is still in the delivery phase, the interactive visualisations produced in Power BI are already allowing decision makers to spot trends and ask more intuitive questions of the data, including the ability to set alerts for safeguarding concerns and reduce risk for vulnerable adults.   http://www.itelligent-i.com/

Smart, safe housing

InformedActions fitted 2,000 homes in Liverpool with its Safehouse units linked to a city-wide LoRa network in a project using Azure and advanced analytics to optimise the delivery and efficiency of health and social care services. Safehouse includes unique sensor technology (temperature, smoke and fire alarm sound, humidity, movement and light) and uses machine learning and algorithms to provide pre-emptive action to improve living conditions and health and social care provision. Halton Housing is also working with InformedActions to predict boiler maintenance requirements based on using historical data including; boiler make, model, age, location in building and number of occupants.
https://informedactions.com/

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Preventing falls

Consumer wearable devices and sensors can be integrated with a data system, such as ARMED (Advanced Risk Monitoring for Early Detection) from HAS Technology, to flag up the early signs of risk to an individual from falls. While the quality of the devices can vary, the better ones will provide good quality data to facilitate good quality predictions.

The company has run an encouraging trial in East Dunbartonshire around falls prevention and is beginning to identify qualitative cost avoidance measures for health and social care.

Following this, it has begun working with Loreburn Housing Association in Dumfries on a project to combine the data from wearables with that from IoT sensors in people's homes – which can provide information on internal conditions and their movements – to develop a more detailed picture. This can be used for alerts such as when a person may be in danger of dehydration, and feed into analysis on what factors can contribute to health risks. This blends with real time monitoring data on the CM200 system – part of the HAS portfolio – on the timing and performance of care workers in people's homes. This makes it possible to flag up any issues and provides an insight into whether they are providing the appropriate level of care. https://www.hastl.com/

and packaging the data in different ways for teams with different responsibilities. For instance, it can compare sensor data with national statistics to identify when the temperature is outside the norm, convey this through an operational dashboard with relatively simple information and send notifications to the relevant people so they can contact the resident.

Simultaneously, more complex aggregations can be supplied to management teams to feed into their perspectives and planning.

It encrypts all of the data that could pose a risk to security and makes it possible to share with other bodies under appropriate agreements. It can also take in financial information to give an

authority a comparative view of the costs for different interventions and for cases in which the person needed longer term treatment, and make an assessment of how a service affects their finances.

The data dashboard can play another important role in enabling social care staff to monitor the wellbeing of vulnerable people, identify any changes in their behaviour or the conditions in their home that could lead to them becoming unwell and in need of extra assistance. For example, if the sensors indicate that the heating has not been turned on for a few days, the person may be suffering from the impact of cold, or if the person has made more toilet visits than normal, they may have an infection brewing - in both cases an intervention may be required to improve their wellbeing.

Information & personalised care

The next big demand is to formulate a plan for supporting those identified as most vulnerable in this cold homes care pathway.

This involves pulling together the relevant information held by the care provider and the NHS on each individual whilst working within the relevant legislative and privacy frameworks. However combining this intelligence with sensor data from inside the home can provide a full picture of the individual's health, wellbeing and their environment and provide actionable insight to help them stay well and safe for as long as possible in their own homes.

Picking out the relevant information from sources such as care records, contacts and historical transactions with those providing care across the NHS and local authority manually is time consuming and error prone. Indeed, the collation, scanning and evaluation of data can place a heavy burden on resources, but intelligent automation is developing to a point where it can take on much of this burden. It provides for a pool of virtual workers handling tasks that feed into prioritising and developing the plans for individuals.

Thoughtonomy's intelligent robotic process automation (RPA) platform provides 'intelligent glue' for pulling together this data on individuals. It can also then understand what is needed from an alert

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and who it should be passed to, whether this is a human or another virtual worker.

It has the capability to analyse the natural language within messages – whether they come through email, SMS, APIs, e-forms or even optical character recognition – picking out key words and phrases and recognising the nature of the message. For example, it can distinguish between an invoice or finance enquiry and a message indicating that someone is in distress and allocate the message with an appropriate level of priority. It can also respond to alerts from assistive technology inside people's homes.

Within the cold homes care pathway, for example, it can identify a person who could need assistance and trigger an alert to case workers or duty teams.

At the same time it alerts the virtual RPA worker to immediately examine documents and case files and provide relevant information to help in the response.

It can also facilitate taking any information from the response back into the case management system to ensure that all records are kept up to date. This makes it possible to maximise the value from the use of RPA and manage the work more intelligently without requiring the 'rip and replace' of existing systems.

Case management

At this point a social care professional can reach out to the person and begin the conversation about their situation, needs and next steps; for example installing sensors, increasing care provision or ensuring that they have claimed the winter fuel allowance. If they agree it is then necessary to inform any other officials who are in contact with them.

Virtual workers automate processes at ESNEFT

East Suffolk and North Essex Foundation Trust (ESNEFT) deployed virtual workers to digitise the process underpinning the move to Electronic Referral Service (eRS). The trusts worked with Thoughtonomy, firstly, on a pilot programme in the back office, proving the value of automation before moving onto the GP referral process. Virtual workers, which combine Robotics (RPA), Artificial Intelligence (AI), the Microsoft Azure Cloud and other innovative technologies, automate a range of processes, and in this case, were deployed to automate the 2,000 referrals that typically came into the trust on a weekly basis.

Virtual workers now actively monitor incoming eRS referrals from GP patient appointments in real time, 24 hours a day. Automation of the GP referrals process has reduced processing time from 25 minutes to just five minutes for each referral. The virtual workers have also released medical secretaries' time to perform more value added and vocational tasks. Across five clinical specialities at ESNEFT, virtual workers released 500+ hours of time just in the first three months of the project, produced a saving of £220,000 per year, reduced spend on agency staff and improved job satisfaction.
https://thoughtonomy.com/

Assisted living in Shropshire

Shropshire is harnessing Dynamics 365 working with Hitachi Solutions to power an assisted living project trialling the use of assistive technology and proactive management of data to unobtrusively monitor someone's daily routine. The platform pulls in data from IoT monitors and devices and combining it with other data sources, machine learning and analytics to spot anomalies and alert the relevant person – carer, GP or relative – that help might be needed, thereby predicting and preventing crises from occurring – helping the elderly to live longer and more safely in their own homes.
https://www.hitachi-solutions.co.uk/industries/local-government/

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All decisions taken in the pathway can be recorded in back office systems or forward facing customer relationship and case management systems in Dynamics 365.

Integration with RPA can automatically send alerts to the appropriate people or provide an update to an Microsoft 365 Teams channel if a multidisciplinary team already is working with the individual.

This is where the strength of local health and care partnerships and relationships can really come to the fore, facilitating the faster and more systematic exchange of information between healthcare professionals to help them determine the best measures to support a patient. A series of exemplars are underway, developing integrated care records, but a lot can also be achieved today with the range of collaboration tools within Microsoft 365 and Dynamics 365.

Hospitalisation

Despite the ability to provide prioritised care, there will inevitably be cases when it is necessary for the person at risk to be hospitalised, either in an emergency situation or via a referral from their GP. While medical care becomes the responsibility of clinicians, advances in technology are providing them with new tools to reducing the administrative burden on hospitals and improving the holistic view of the individual.

This has to begin at the first stage of monitoring referrals for treatment and admissions as in-patients, a process that has traditionally been time consuming, but for which digital solutions are providing possibilities for a much more efficient approach, as illustrated in the example of ESNEFT (see box on previous page).

From hospital to home

Once a patient is ready to return home it is essential that this happens with the minimum delay. For the NHS, with bed capacity at a premium, releasing the bed for the next patient is key. For the patient, every extra unnecessary day in a hospital bed can delay full recovery due to the impact of inactivity on

muscle strength and the difficulty for the elderly in rebuilding this.

The local authority needs to be ready to respond quickly, and to ensure it has the appropriate support in place.

Often illness can trigger mobility problems in older people, and an important element of the discharge process is that they are given full assessments to identify needs such as, occupational therapy, physio or equipment needs and to ascertain whether they are capable of managing at home.

Again, this is where the case management system within Dynamics 365 can play a crucial role, integrated with the RPA functions to provide alerts to the relevant staff and details of any new care needs. And much of this can be communicated through Teams, providing for other officials to respond and alert each other of any issues that could arise.

But the discharge process itself is a priority here. And there are new innovative tools being designed specifically to support this transfer of care.

For example, a continuing healthcare (CHC) assessment comes into play when a person no long needs acute care in a hospital but does need ongoing medical care. The review of whether this support is to be funded ongoing by the NHS is initiated by clinical commissioning groups (CCGs). There is a target for completion within 28 days, but many CCGs fall short of this. This comes down largely to the process being paper based, which makes it slow, hard to spot any gaps in information and takes time to rectify them. This can also require patients or their families to provide information several times over. Crucially, it can delay assessment of eligibility for different types of care.

IEG4's CHC2DT solution, which operates on the Azure cloud platform, digitises the process, using a checklist and incorporating templates, intelligent workflow and a decision support tool to ensure that none of the information is missing or inaccurate and it is passed on in good time. This can lead to quick referrals to multi-disciplinary support teams, and shows CHC managers the progress of each case, eliminating delays in providing further care.

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Rehabilitation & ongoing support

With the patient back in their home the council can resume monitoring the factors that contribute to risk, and provide the remedial action and support to ensure they do not suffer the health hazards of a cold home.

Cheshire CCGs and continuing healthcare

Five Cheshire and Wirral CCGs worked with IEG4 to develop a continuing healthcare end to end digital solution to deliver efficiencies and ultimately improve patient care. The resulting solution, CHC2DST, enables the CCGs to digitise the forms used in the national framework and automate workflow processes to improve patient service and boost productivity in the continuing healthcare. NHS England guidelines state that 80% of patients must be processed through a CCG's care in 28 days.

With staff commitment and resourcing at a premium, hitting the 28 day limit has in the past proved challenging to meet, but the five CCGs are now achieving this and hitting – indeed significantly exceeding – these targets. CHC2DST is now helping communication across multi-disciplinary teams to improve the speed and accuracy of decision making.
https://www.ieg4.com/

Again, the technology is available to automate much of the process and make it possible for an authority to monitor all patients and customers in its care while concentrating most of its resources on those at greater risk.

Ongoing programmes of support and rehabilitation after the person has returned home can be based on solid data and evidence, with new technologies enabling ongoing self-care, social prescribing, self-management of personal budgets and coordinated care in the home.

Meanwhile, an authority needs to monitor its own performance over time, measuring outcomes of its interventions and aligning these with the commissioning of care over the long term. HAS Technology's PAMMS (Provider and Market Manager Solution) identifies any fragilities in the market that local authorities go to for private care. It is a platform which makes information from commissioners in different authorities transparent and takes a feed from the Care Quality Commission on the quality grades for each provider and if there are any requirements on them. It can support an authority in the quest for the holy grail of commissioning care based on outcomes, and a more financially sustainable yet effective strategy for caring for people in their homes.

Innovative new approaches to physical rehabilitation are opening up, with the development of augmented reality technology such as Microsoft HoloLens. Efforts are under way to develop applications that support patients through exercises or guide them through ADL (activities of daily living) tasks to recover cognitive and physical capabilities and rebuild their confidence in looking after themselves. Data from the patient's performance can then be fed into dashboards for clinicians and social care professionals, providing the information most relevant to what they need to know, to provide a picture of the progress made.

Homecare hub in the home

Konnektis has created a digital care platform with web access and a home hub tablet with its own internet connectivity that helps older people to stay in their own homes for longer. During a trial in Bradford the system replaced pen and paperwork to provide coordinated, real time information to the individual, home care workers, family members and medics. It enables care providers to ensure that people receiving support can access information in a way that is meaningful to them, enabling them to participate to the fullest extent in their own health and wellbeing.

The system is to be expanded across West Yorkshire and the West Midlands following the successful trial in Bradford.
https://www.konnektis.com/

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Implementation of all these steps requires a measured approach and serious thinking about the range of partners involved in a compex care pathway such as cold homes. Attention must also be paid to the sensitivities around personal data and compliance with relevant legislation.

But the evolution of digital technology and greater use of open standards is removing many of the burdens and providing for a stronger integration of the processes involved.

Virtual wallet for personal budgets

The increasing use of personal care budgets is doing a lot to promote wellbeing among their users, but the diversity and irregular nature of payments increases the administrative burden on local authorities. One county council has been working with Public Consulting Group (PCG) to deploy its Virtual Wallet, an online mechanism best described as Paypal for social care. It holds an account with the budget granted to a care recipient that they can spend as they wish, going onto the marketplace made available by their local authority to choose, book and pay for services.

PCG runs the back end system, keeping track of how much has been spent by different users and among different providers, receiving a lump sum from the council then passing any payments through BACS transfers. This can also apply to personal assistants, who are able to upload timesheets onto the system to show the work they have done then receive payments into their bank accounts. PCG sends the details to a payroll service that works out the individual payments.

The major advantage is the flexibility for care recipients and transparency for everybody. The council can view how the money has been spent, examine the payments for discrepancies and overcharging and claw back any excess. It can also identify people who have been over- or underspending and use the data to review their needs; or if a care provider hits problems they can see who is receiving their services and make arrangements for continuity of care.
http://www.publicconsultinggroup.co.uk/

The goal of an effective technology-enabled cold home care pathway is within reach.

Machine learning predicts care spend

Affinity Works has developed a predictive engine for care, which is able to predict spend to within 2% of actuals over a two-year period.

The company specialises in solutions for local authorities to exploit data in line of business applications, particularly social care placement spend.

The data hubs allow councils to collect and analyse care transaction data with pre-built visualisations and interactive drill downs available online on-demand. The benefit is greatest where partner organisations in health and in neighbouring councils share data, facilitating wider cross region and cross domain analysis.

Building on collaboration with its public sector partners in the Tees Valley, Affinity Works' data engine moves beyond analysis of historical data to look at generating accurate predictions of future trends.

It exploits time series forecasting models, configured and 'trained' by exposure to historic data using Microsoft's Machine Learning, with predicted results compared to known actual outcomes. The system also identifies and accommodates unexpected reversals in trends.

It can be fed with as few as five fields of data to generate forward activity and spend predictions based on any combination of demand category, primary support reason and age group. Ongoing data feeds keep it updated, with predictions regenerated on demand and performance compared with periodic benchmarks.

The engine demonstrates how data already being collected can be exploited for strategic planning, based on a reliable view of the road ahead rather than the road already travelled.
http://www.affinityworks.co.uk/

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Virtual consultations in Berkshire

Berkshire Healthcare NHS Foundation Trust has worked with Modality Systems and Microsoft Teams and Skype for Business to develop an online consultation solution named Talking Therapies – an approachable service for people dealing with anxiety and depression.

The consultation solution, OneConsultation, extends the reach of this service, enabling patients to seek professional support from the comfort of their own surroundings and to improve access to care. It provides a secure virtual consultation room that the GP can join using Skype for Business and the patient can join via the web browser on their smartphone, tablet or PC.

Being able to offer virtual appointments at a time to better suit the patient increases the likelihood of the trust being able to effectively offer Talking Therapies to hard-to-reach patient groups.
https://www.modalitysystems.com/

Intelligent social prescribing

The trend towards social prescribing is adding a new element to health and social care. It involves GPs, nurses, wellbeing coordinators and other frontline professionals referring people to a range of local, non-clinical services, with a growing recognition that health is determined by a range of physical, social, economic and environmental factors. It seeks to support people's assessed needs in a new model of care for greater control of their own health with access to non-statutory local services.

In response, IEG4 has developed a digital social prescriber tool, Place-Based Care, that intelligently matches people's needs to non-clinical service delivery. It provides for an evaluation of needs through a set of algorithms that map services that can be delivered to a recipient, with the software configured to align with local or national standards. It can then direct the recipient to another specialist and updates their care plan accordingly. It also saves the scores from assessments for monitoring progress.
https://www.ieg4.com/

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04 Transforming children's services

Local authorities rightly devote significant resources to the safety and wellbeing of vulnerable children within their boundaries – a task that comes with great complexities and sensitivities around confidentiality and the role of families. It is also a growing problem, according to the Association of Directors of Children's Services. There have been an estimated 2.4 million contacts made to children's social care services in England in 2017-18, a 78% increase from 10 years previously, and the number of children subject to protection plans went up by 87% in the same period.

It requires a delicate balance in the sharing of data between various agencies – extending from a council to schools, the NHS and police – whilst ensuring that proportionate action is taken. While much of this depends on carefully constructed processes and protocols, it can be supported by digital systems that provide a foundation for the data sharing and contribute to instigating interventions and sustained support when necessary.

CASEY supports early learning services in Cambridgeshire

Cambridgeshire's Assessment System for Early Years (CASEY) has enabled early years providers to assess children and exchange progress data with the council's early years service and schools. Developed by the county council and Sentinel Partners, it enables real time information sharing and can be used to compare the child's development against their expected stage in relation to their age. To support this, relevant information is collected directly from the authority's own systems to provide a complete picture of everything that is known about a child. Charts at individual and summary level also enable the wider view to be taken, and an analysis function allows specific target groups to be identified and monitored.
 https://www.sentinelpartners.co.uk/

The British Association of Social Workers called in May 2018 for councils to invest more in upgrading technology, particularly mobile devices, and its own research showed that, while 87% of social workers had access to IT, the quality of systems varied and that case recording systems were prone to losing connectivity.

The knowledge dialogue

Safeguarding is a prime example of an area where legal requirements and guidelines are complex and the implications of taking the wrong action, or no action, can be significant. It can be difficult to ensure that all staff in organisations such as schools or youth clubs are fully aware of the formal procedures and decision trees.

Chatbot specialist DF2020, a member of the Microsoft Interoperability Programme, has developed a prototype of a process to handle the example of an initial approach about possible child abuse. It uses a specially programmed chatbot – built on Azure and which can be integrated into the Microsoft stack through the Azure Bot Service – to shift the emphasis away from what it describes as a 'knowledge monologue' about what to do to a 'knowledge dialogue'.

This prototype can be configured by social workers to help authorised employers from other agencies to establish whether a child may be subject to abuse. It uses a series of knowledge maps that illustrate and document choices, pathways and outcomes, helping the official run through the process much more quickly, informing them whether their concerns are valid and guiding them to the next step.

The bot can be programmed to work with text or voice to help understand and contextualise the answers provided, and then records every step of the interaction as a record of compliance with procedures. This can help to provide a reliable result along with full transparency and the security for employees raising concerns. As it operates through an omni-channel framework it can be accessed through any digital device, and the company sees it as a generic solution that could be used by a range of agencies for a range of guidance.   https://www.df2020.com/

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Case management & collaboration in the cloud

It is possible to build an effective case management process within Dynamics 365 – and drawing on other Microsoft solutions within the Microsoft 365 environment – to take in planning, reviews and monitoring. This can involve workflows for different processes within children's social care, such as fostering, adoption, child protection and those for looked after children.

Solutions are being developed, to handle care applications and manage pathways. They are often used with single child records and can generally be accessed by social workers through mobile devices to give them more time with children and families. A key feature of the trend is the acknowledgement that a range of agencies feed into social care and that staff need to be aware of their roles and the correct procedures. An element of this is that they know when to alert a social work team, or possibly the local police force, about concerns that a child is at risk.

This currently involves developing a familiarity with the regulations and procedures around identifying a possible risk, a subject that is complex and can take a public official – whose main job focuses on other issues – into grey areas. The danger is that a heavy volume of contacts from officials who want to play it safe could overwhelm children's services teams.

The emergence of chatbots driven by AI technologies promises an easier and more reliable approach. It is possible that authorised users in public agencies could log into a system that enables them to raise an initial concern and then be guided through a series of questions, using natural language and responding to their answers, which leads to an indication of whether they have a legitimate concern and, if so, who they should contact.

Regulation is no barrier to data sharing

The idea of data protection stirs up anxieties in some organisations about the sharing of patient information, but the General Data Protection Regulation, an EU Directive implemented in 2018 and enshrined in UK law by the Data Protection Act of the same year, provides a framework that facilitates sharing in the great majority of cases.

It was made clear at a UKAuthority conference by Dawn Monaghan, head of data sharing and privacy at NHS England, who said a number of myths have arisen around perceived barriers. These are incorrect; information governance laws are there to ensure safeguards rather than forbid sharing, and explicit consent is not always appropriate or required to enable the sharing of data. There is often a lack of understanding and confusion over what is required of an organisation to meet its obligations under privacy legislation and to ensure the Common Law duty of Confidence is satisfied or set aside. Under GDPR, consent would not usually be required; however, to meet the Common Law of duty of Confidence it may well be.

Monaghan warned that interpretations of the law can change over time with societal changes and legal precedent. It is often not necessary to obtain consent to share information for direct patient care, and rarely so for other purposes if it has been anonymised. The key lies in transparency: it is always necessary to inform citizens how, why, when and with whom their data is being shared. It can be achieved in a variety of ways and does not always have to be a direct contact with the patient every time the data is shared; it is about ensuring understanding and clarity through appropriate means to manage reasonable expectations.

Guidance from the NHS Information Governance Alliance indicates that the main impacts of the regulations are in the need to clearly demonstrate compliance with the data protection requirements. This can reinforce public trust and makes the GDPR and Data Protection Act enablers rather than barriers to information sharing in healthcare.

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Such a 'knowledge conversation' is a first step that could allay their fears in marginal cases, provide the evidence that they have acted correctly and free child protection teams from examining reports that fall short of a genuine risk.

Solutions are also being developed to support collaborative working and managed data sharing with other agencies. The focus is often on gaining a single view of the child and the family alongside other relevant information such as school history and changes of circumstance, with the aim of strengthening a social worker's understanding of a case.

Birmingham children's data hub

Birmingham Children's Trust came into being in April 2018, formerly being Birmingham City Council's Children's Services. It is owned by, but independent from, the council and is responsible for supporting disadvantaged children and young people in the city. It has been working throughout this transition with Sentinel and the council to create a data hub for children and families that enables professionals to all access the same accurate data collated around the child.

The hub provides a single view of a child and all relevant factors – from wider family group, police, education and other information - that might point to a risk for children's services teams. It can collate data on a child and their families from over 100 sources, using complex algorithms to match features such as the spelling of names and addresses and merging it into a single view. It then risk scores information to identify and highlight children who may be at risk, or may become so in future.

This information is then fed to the children's services and other teams through a configurable portal to make each screen appropriate to the respective team. This means it is possible to ensure that they only see the data that is appropriate to their purpose. It can also be configured for outside teams to simply provide an alert message that there is an issue without sharing any sensitive data.

The data feeds are updated daily from any incidents and reports – such as a child being excluded from school or the police being called to the home – and the portals also provide a full chronology of events relevant to each family. This fulfils the need of child protection teams to become aware as soon as possible of any factors that have significantly increased risk to a child, and when there is a need for urgency in taking action. https://www.sentinelpartners.co.uk/

Data hub for one view

Data and systems integration specialist Sentinel Partners has been working with Birmingham City and Cambridgeshire County councils on the deployment of such data hubs. In Cambridgeshire the hub has been configured to coordinate work with the education system for early years assessments. This has been based on four pillars: quality of provision, sustainability, independence of provider and narrowing the gaps on school readiness of children. Again, it has made it possible to develop relevant portals and dashboards, all using the single version of truth, and supported managers in identifying the children for whom an intervention could be needed.

The underlying strength of this is that it has facilitated the data sharing without requiring the design of an overarching system, but used a hub that links with existing sources of data and can be used alongside the established collaboration tools.

In Birmingham the Children's Trust has harnessed the hub to collate data feeds from over 100 sources, automatically pulling data around the child and risk scoring reports, activity and information. This risk profiling identifies children at risk, or potentially at risk, or where a risk has tipped over an alert threshold with a latest update. The relevant team is then alerted to take action.

Meanwhile in Liverpool a data hub has been successfully established with next steps exploring harnessing AI in order to not just prevent but predict, enabling earlier intervention and potentially better outcomes.

Soft intelligence

Another important feature is the ability to share 'soft intelligence' about specific risks. This can be difficult because the people in agencies with a direct role in child protection do not always have the connections

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with people who potentially see the signs of a problem. It needs a solution to draw those officials from trusted agencies and help them provide intelligence about where there could be concerns.

Research commissioned by the Department for Education found that a third of people who suspect child abuse do not report it. They are mainly deterred by the fear of having misread a situation or of wrongly accusing someone.

This information then slips through the net and the opportunity to prevent harm at that point is lost. An effort to apply this approach in fighting child exploitation has been pioneered in Rotherham using the Nimos app developed by Risual and built on Azure.

Tools such as this have potential for a wider range of uses within social care, coming back to the need for the effective but careful sharing of sensitive information and collaborative working around the child. Digital technology is enabling this in a much faster, efficient and secure way than has been possible with paper-based processes, and as more solutions are developed it promises to reduce the risks for more children.

Rotherham gains soft intelligence

Rotherham Council issued the Nimos safeguarding app in a pilot to selected people working in agencies other than social care – such as housing, mental health services and the voluntary sector – who have strong connections with vulnerable people in the community. It enables sharing of 'soft intelligence' quickly and securely and provides a tool for the prevention of child sexual exploitation.

Nimos enables people to report any causes of concern, adding any details they possess such as the date, time and location of an incident, an image if available and any further detail. It does not necessarily trigger action, but it does make children's services teams, multi-agency safeguarding hubs and police officers aware of a potential problem and can lead them to investigate further or take preventative action.

It is not intended to replace existing processes for sharing information through, for example, safeguarding or information sharing forms, but instead complements these methods to deliver the missing pieces of the jigsaw. A more comprehensive intelligence rich picture allows for better strategic decisions relating to resourcing and services conditioning, as well the tactical delivery of safeguarding of vulnerable children.

A report by the police Child Exploitation Unit evaluated the effectiveness of the application and the pilot project is available to download. Click here.   https://www.risual.com/

Troubled families in Liverpool

Liverpool City Council wanted to develop a more proactive approach to protecting children, developing ways to enhance referrals, building family intelligence by making more data available to inform partnership teams. In the summer of 2018 the Liverpool Families Programme Data Team worked with Sentinel Partners to deploy its Troubled Families data integration solution.

The system takes in data on specific incidents or contacts with public agencies and uses a rules based process to match it against a child and provide a single view of the circumstances. Staff are trained to configure the rules for relevant data to be added, cleaned, validated and matched.

This comes with a scoring mechanism, based on levels of risk in different factors, to flag up issues such as exclusion from school and signs of criminal exploitation. This then informs a lead professional that a family needs support. Different scoring rules can be applied to different scenarios and to the different teams – such early help, safeguarding and partners working with families in a single focused approach.

The system immediately produced positive results – the day it went live it alerted children's services to concerns around 8,300 families, up from 5,400 already on the radar – and has been seen as a success. Liverpool and Sentinel are now looking at ways to use AI in prediction profiling scenarios, identifying patterns of incidents that lead to concerns. This has the potential to support earlier and better targeted interventions to protect children.   https://www.sentinelpartners.co.uk/

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05 Manchester's vision: one data platform for better care

Taking the theme of technology-enabled care pathways further Manchester's Local Care Organisation (MLCO) is breaking new ground in its ambition to use data to integrate health and social care across its community.

Post devolution it has taken the messages from the NHS Long Term Plan and its own evolving integrated care system as stepping stones towards creating an intelligent health and care service meeting the needs of the people of Manchester.

Indeed, with new and evolving technologies there is fantastic potential to develop better integrated, person centred models of care in which health and social care providers work together more effectively. But it is not just about the array of new devices and digital systems - it will only work to its full potential by pulling together the disparate strands of data onto a single platform.

This is reflected in the ambitious vision of the MLCO, the recently formed public sector partnership of Manchester's local NHS primary, community and mental health services and social care bodies. MLCO and Manchester City Council are exploring the creation of a digital ecosystem with global players such as Microsoft, plus a range of providers in an exploratory phase, that makes all data from its disparate systems and services available in one place.

The aim is to provide a single view of all the records, strands of care and factors affecting the wellbeing of an individual - giving the organisation a clear view of the immediate outlook, priorities and demand for necessary care throughout the area.

The emergence of this new dimension results from three major factors. One is the explosion of mobile technology in everyday life, with the capacity to give people access to an array of data from devices from almost any location.

It gives the scope to provide treatment remotely, through simple advice, assistance with medication or exercises supported by technology.

Secondly, the more recent emergence of IoT sensors and devices is providing the ability to monitor a person's behaviour and health in their own home, with the capacity for alerts if anything goes wrong and the triggers to support a proactive approach to prevent health problems.

Thirdly, the ongoing development of AI is opening up new possibilities for predicting problems in advance, both for the individual and at a public health level.

Source of problems

The underpinning element in all of these is the data, both on the wellbeing of the individual and the capacity of the whole care system to respond and deal with problems. Traditionally this data has accumulated on disparate, siloed systems that have seldom connected to each other or fed into a central

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source. This has contributed to the historical disjoint between health and social care and has consistently caused problems within the two sectors.

Now, however, MLCO is aiming to rectify the disjoint through the development of a new data platform.

"We've been exploring the conceptual piece, the art of the possible alongside Microsoft and others", Nicky Parker, director of business change and transformation at Manchester City Council said at a recent exploration event. "It's about how might we aggregate all the data into one digital platform with a series of dashboards to help drive the command centre.

"Imagine if we could see all the data from across the city system: what's happening across the city, in our localities and in our 12 integrated neighbourhood teams. What different decisions might we make if we could see everything on one screen in a command centre, or out in the neighbourhoods on a mobile device?"

The ambition would make the platform available to a control centre that enables staff to spot when an individual needs support, pull up the information to understand what form that support or immediate help should take, and assess how best it can be delivered. The key is in using the information to make the right decisions in real-time.

Dashboard view

It also includes the creation of a dashboard on all current activity in the care sector, taking in factors such as available appointments at GP surgeries, waiting times in hospital A&E departments, ambulance activity, the availability of specialists such as district nurses, physiotherapists and crisis response teams, and what they are delivering at any point in time - and where.

It amounts to connecting data around people's needs to proactively provide better care, working with multiple partners and improving the flow of activity – while at the same time ensuring that the

person in need is always at the centre of everything. There are challenges in making this possible, partly in providing the technical interoperability, and in ensuring that the data can be entered just once to populate the platform for all the appropriate people to see. Then there are demands in preserving the security of the data and ensuring that the right sharing protocols are in place. There is a need for data protection impact assessments and robust consent mechanisms for sharing.

Along with this is the need for organisational and cultural change, with leaders having to get behind the effort and staff from all of the agencies being ready to utilise the data to the full. This will not happen overnight, but an ambitious organisation such as MLCO can take a progressive approach that soon shows positive results.

Coordination benefits

Numerous benefits can be delivered. There is the prospect of a great improvement in the coordination of care, focused on the individual and with a more proactive approach that can keep them out of hospital and in their own home for longer. The growing take-up of assistive technology promises fresh streams of data that can make a big contribution to supporting people safely in their own homes further into old age, reducing the burden on the public sector and improving their quality of life.

It can improve coordination between agencies, reducing the disruptions and inefficiencies that waste resources and ensuring they are better placed to provide the right care at the right time.

It can lead to a more proactive approach to care, supporting early interventions to prevent more people from falling ill and helping them to better manage their own health.

In addition, it can provide the data that feeds into analytics and helps organisations anticipate increases in demand and spot the long term trends. This lays the ground for better strategic planning and investment of resources.

While MLCO is leading the initiative with its vision for Manchester there is a great scope for this type

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of change across the country. Communities' needs and challenges are similar, and health and care organisations hold the wealth of data that provides the key to a successful response. A data platform can connect the information around people's needs, so it can be used it to intervene, prevent and provide better care.

Bob Brown, former chief information officer at Manchester City Council and one of the founders of

the initiative, provided the crucial message:
"Don't settle for what is there today; keep pushing for it to change. Be bold."

Since the exploratory event, MLCO has been in a discovery phase but is now poised to take the next steps to meet the pressures of winter.

A layer above legacy and innovation

MLCO is building its data vision on top of established systems and innovation pilots.

One key solution already in place in the reablement team is CM's staff scheduling system. It provides managers with information on individual employees, broken down into detail such as their skills, qualifications and which medications they are able to administer, along with a mapping facility to show where they are in the local authority area. It enables them to make decisions about where to send staff to support those in need, responding to emergencies and ensuring that people receive the nature of care that they need, while helping to reduce travelling time.

The reablement team is supporting this by giving care recipients a 4G connected tablet, the Konnektis home hub, that replaces paper records in the home, providing all those involved in care – including friends and family where appropriate – relevant information on the person's health and care. Visiting staff are able to access the information on the individual to understand what they need and become aware of any risks, and update it during the visit.

The information also goes into a web-based monitoring platform that managers and different teams can use to coordinate care; and which family members can access to obtain real time information on the support loved ones are receiving.

There is a recognition that those not receiving funded care can also benefit from the services provided by MLCO and other service

providers. The organisation's development of Connect to Support, an online tool that enables people to see what services are available locally, aims to support all those in need of support in Manchester. People can input details of their circumstances and the system quickly identifies key aspects to provide them with the appropriate options relating to care and wellbeing. It amounts essentially to a digital approach to social prescribing - the direction to non-medical services by GPs that is now seen as an important factor in patients' wellbeing.

Another initiative involves IoT and sensor specialist Republic of Things and is aimed at combating fuel poverty among older people. It involves installing passive sensors to monitor heat and humidity in people's homes, with data transmitted through low frequency radio with no need for internet connections, to a standalone platform that alerts social care staff as to whether the person may be living in cold or damp conditions and their health may be at risk. This can prompt action, working with the Local Energy Advisory Programme, to approach the person with advice about energy saving measures and the options in switching tariffs.

MLCO is also trialling rehabilitation treatment at home. The exploratory event showcased what Sword Health, Virtual Rehab and Microsoft HoloLens could do in enabling people to do physiotherapy exercises at home, with the ability to feed data into a platform for the physio to assess their progress and identify when changes are needed in the regime or further specialist input is required.

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Initiatives such as this, focused on transferring care outside the hospital system, can do a lot to take the pressure off the NHS, provide big savings, and help people stay in their homes – a major factor in wellbeing.

All these innovations can feed intelligence and information to the main data platform – alongside information from existing social care and health system and the new shared care record – to provide one view with the person at the centre.

Additional data feed, for example, open data weather reports, emergency services alerts and

social media, can create a platform for predicting events that will impact people under MLCO's care. For example, forewarning of impending cold weather can enable preventative action and real-time monitoring of the temperature inside vulnerable people's homes during the event.

The key is to create a data platform based on open standards and a mindset of integration, collaboration and innovation.

Connecting Manchester Local Health & Care
Technology enabled care for better outcomes

Manchester Local Care Organisation
Leading local care, improving lives in Manchester, with you

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Govtech, digital & data for the public good

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Earlier this year MLCO held an exploratory event alongside Microsoft and UKAuthority to explore its vision for a data platform delivering the future of health and care.

You can read UKAuthority's summary article here:

https://www.ukauthority.com/articles/ building-a-data-platform-for-better-care/

Alternatively, watch the presentation videos or the overview video from this exploration day – you can also deep dive into Amy's journey with care in this data driven vision of person-centric care:

https://www.ukauthority.com/articles/ connecting-manchester-local-health-and-care/

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06 Conclusion: a basis for evolution

All this amounts to a developing trend that still has a long way to run. Organisations are already taking up the promise provided by mobile technology and the capacity for data sharing, and they are learning quickly about how to use data analytics. While the use of robotics, machine learning and AI is still at an early stage, a growing number of public sector pioneers are investigating their potential, and as the technologies develop there will be a stream of new solutions from innovative companies.

There are two factors that can help to exploit the trend to the full. One is that public and third sector organisations involved in social care should be ready to engage with the IT industry. Companies are more likely to develop genuinely useful solutions if they have a full understanding of the pressures, priorities and desired outcomes facing the care providers. It needs contributions from a firm grasp of the frontline challenges, how the needs of care recipients are changing and how these relate to other societal factors. While it is not realistic to expect all organisations to have people working with potential suppliers full time, they should have someone who is at least staying in touch with developments and ready to take part in forums and contribute feedback on how the new technologies could help. Every organisation can play its part in helping the industry to fully understand the demands of social care.

Secondly, the potential will be greatest when the new solutions are designed for integration with existing technology so they can tap into the established sources of data. It would be more cost-effective and less risky to build on what is already in place, acknowledging the need to make changes when necessary and looking closely at the quality of the data.

This is where the Microsoft ecosystem provides a big advantage, based on widely used systems such as Microsoft 365, Dynamics 365 and the Azure cloud platform, and a wide range of partners focusing their innovation efforts on solutions that fit within the infrastructure. It gives organisations the chance to maintain tried and trusted core platforms while taking advantage of technology that adds new, more beneficial dimensions to care.

It provides a firm foundation for an evolutionary approach to delivering better care through technology – and for local authorities and their partners to cope with the demands of the next decade and beyond.
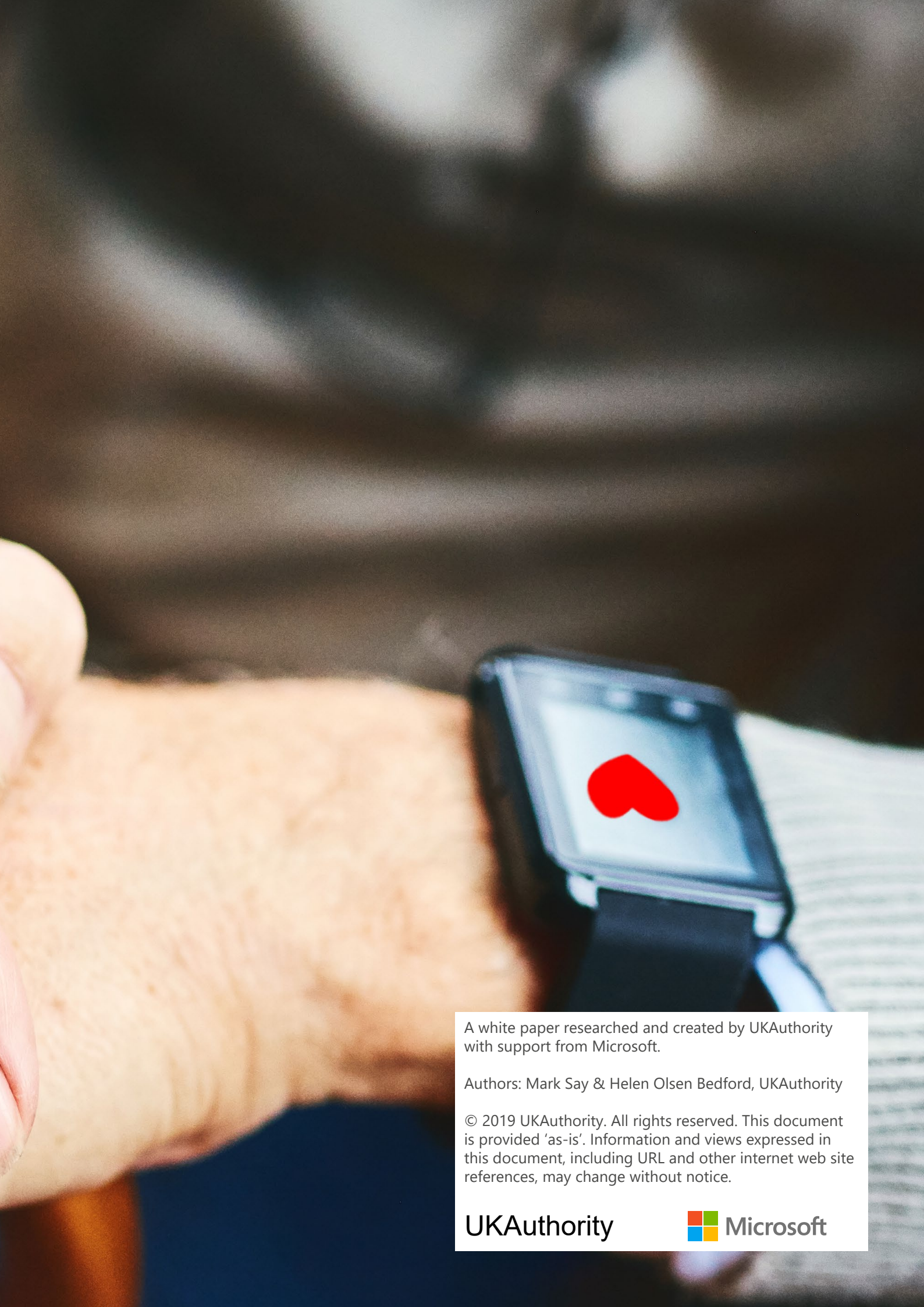
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