Title: Case Studies to Demonstrate the Use of Care Technology:

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Case Study 1: Behavioural Insight Led Care in those with Learning Difficulties – Alcove comprehensive monitoring.

Background:
Recently the CQC has highlighted the need for increased support for community care to improve care for those with autism spectrum disorders and learning disability to provide outcomes and independence. It is predicted that by 2030 that the number of individuals living with a learning disability is predicted to increase to 3,774, highlighting the need for improved complex community care. In Barking and Dagenham 832 service users are known to have a learning disability with 127 under the age of 18. The cost of each service user in LBBD is projected by London Councils to increase from £38,902 to £49,279 between 2017 and 2025.

Solution:
The London Borough of Newham implemented Alcove in a Supported Living context to help reduce staffing and promoting independence. Alcove is a comprehensive technology package which strives for independent living for older and disabled adults. Alcove utilises several technologies to provide a comprehensive approach to social care. Alcove uses motion sensors which collect heat and light which provides feedback to the machine learning-based Alcove system to provide behavioural monitoring which is used to provide a personalised alerting service. Other technologies such as Alexa dot are used to monitor carer shifts and the Alcove warden call system includes a screen device where the manager and residents have access. Halley Road implemented an Alcove controller alongside 50 sensors and altering systems to reduce care packages hours for its residents in an insight-led manner.

Outcomes:
The insights provided by the Alcove Technology System provided a saving of 3 hours per week of 1:1 daytime support and savings in terms of sleep-in and waking night costs. Using the 15,000 data points collected by the system and machine learning to provide baseline behaviour, noticeable changes in residents' behaviours were then reported to site managers for investigation. Upon investigation there was a correlation between daytime anxiety and restless nights indicated by night-time alerts, this information has resulted in behavioural interventions being implemented to curb anxiety.

Case Study 2: Prevention is better than cure – The digital shift from fall response technology to preventative technology.

Background:
The current Careline service currently has 2,500 users in which 80% have just a pendent alarm which involves manual activation by the service user to alert an external monitoring and review team. A comprehensive external review undertaken by Socitm Advisory found that the current service is unable to support the future ambition the Council has for Care Technology due to weaknesses in areas such as lack of innovation and flexibility. In recent years there has been a shift to using technology which aids in predicting healthcare events and preventing them. This has a beneficial impact on service user's physical health but also on their confidence in being independent which prevents expenditure for care services and reduces hospital admissions. Bangor University identified that the associated cost of a fractured hip was approximately £32,000 highlighting the direct cost of falls to the care sector.

Solution:
HAS Technology Group has developed ARMED technology, a wearable device which combines both predictive analytics modelling with health and social care data to identify risks earlier in the care cycle. The data obtained helps individuals to remain confidently independent and in their own homes for longer.

The East Dunbartonshire Health and Social Care Partnership started recording data which can be used to proactively indicate risks. When the data following a fall and fractured hip was analysed retrospectively the service user has been sedentary for up to 16 hours per day with a restless sleeping pattern. Consequently, East Dunbartonshire Health and Social Care Partnership implemented ARMED in 28 service users within a sheltered scheme over 6 months. Over the period, - zero falls were recorded in this group, however in a control group where ARMED has not been deployed 22 individuals had an incidence of 59 falls.

Outcomes:
The cost associated with the installation of ARMED was £8,000, this compared to the approximated £200,000 cost implication associated with the service users which fell represent a 25:1 spend-to-save ratio. The implementation of ARMED also helps reduce the strain on other services within the health care partnership through reducing response calls, ambulance callouts and reduced hospital and care home admissions freeing up beds. There were also improved outcomes for service user wellbeing through promoting better sleep, independence, and activity.

Case Study 3: Personal assistant to digital assistant – the potential of providing prompts and support to service users using digital assistance devices.

Background:

Since the launch of voice-activated digital assistants such as Alexa and Google Home, there has been a drive to incorporate these devices into healthcare landmarked by the recent partnership by Alexa and NHSX. The focus of the devices is to provide medical information to individuals from NHS websites however the existing functions can be implemented to provide practical support to chronic health problems. Domiciliary care services comprise a large portion of the health and social care budget at London Barking and Dagenham. The support given by domiciliary staff can be varied from providing all care and personal care to simply prompting medication for those with a tendency to forget.

Solution:

Stoke-on-Trent saw the opportunity to utilise digital assistants to improve independence and provide support to those with chronic health conditions such as dementia, multiple sclerosis, Bechet's disease, and mental health illnesses. Stoke-on-Trent recently ran a pilot study on the implementation of 50 digital assistant kits comprising of Alexa Echo Show and Wi-Fi if needed to service users with health or dependency needs.

The digital care assistant by Oxehealth uses an optical sensor and infrared illumination to monitor service users to detect movement and vital signs, pulse and breathing rate. The care assistant is currently being trialled in several locations with the findings being released later in 2021.

Outcomes:

Nearly all recipients in the follow-up phone survey have reported increased independence since when using the Alexa Echo Show device for two months or more. One service user previously required daily visits from their primary carer to enable them to live independently with their son. The use of the reminder function of the Alexa aided prompting activities such as medication, appointments, and meals, resulting in less frequent visits from their primary carer improving the quality of life for the individuals involved. Another unintentional reported benefit of the study was reduced loneliness therefore reducing mental health decline in some cases.

The Oxehealth digital assistant has been shown to reduce falls by 48% at night in two recent reports. The use of the digital assistants has also helped service users to feel safer, sleep better and have more independence and privacy knowing their health is monitored.

Case Study 4: Digital Innovation within the Children's Social Care Space.

Background:
Currently, there is limited evidence of digital use within the Children's social care space however there are plenty of opportunities for use for care leavers and individuals feeling as though their voices are heard. Transitional periods for children in care can often be a difficult time where increased support and reassurance to aid progression into independence. It has been highlighted by the Social Care Institute of Excellence that early planning and access to information help young people in care feel involved in their journey from Children's services.

Solution:
Sunderland council has recently implemented the use of an application called Mind of My Own to help address the issues reported within the Care Leavers space to build confidence, trust, and relationships. Mind of My Own is an application accessed by a mobile phone or computer which gives young people the chance to write statements relating to their care for sharing with support teams. The application aims to provide a digital solution to advancing universal children's rights and involving looked after children in their care plan. The increased involvement hopes to reduce the occurrence of missing children and promote self-confidence by making their own choices.

Outcomes:
One individual reported that by using this application they felt more in control, that their needs were better understood and heard ahead of Social Worker reviews and an anxiety reduction. The use of personal reporting improved trust and communication between looked after children and Social Workers allowing them to work better together. The developers of Mind of My Own state that the use of the application in over 70 councils saves Social Workers around 8 days per year in time spent typing Children's views allowing their resource to be better used in the future.

Case Study 5: Lessons from lockdown: Care technology, COVID-19, and crisis management – proactive wellbeing calls to individuals requiring shielding.

Background:
2020 has been an unprecedented time for everyone with every aspect of Care and Support being profoundly impacted. The Office of National Statistics analysed clinically extremely vulnerable people in England during the pandemic, leading to approximately 2.2 million people being advised to shield. It is the council's statutory duty to provide shielding support to those who were classified as clinically extremely vulnerable, this is currently approximately 9052 individuals within LBBD.

Solution:
Carmarthenshire County Council commission Delta Wellbeing, a telecare service who proactively contacted its 3,500 alarm users. This proactive service was designed to reach service users before they reach a crisis or an incident occurs, reducing demand on other emergency healthcare services. This proactive response system was then deemed suitable to contact the initial 8,500 individuals instructed to shield within the county because of COVID-19.

Outcome:
Delta Wellbeing were able to contact all 8,500 shielding individuals to assist with food, medication, isolation before negative outcomes allowing for personalised support plans when needed. The success of this increased outreach to 18,500 individuals. This prevented any surges in demand on statutory and local authority services and resulting in a positive increase on referrals to information and advice away from statutory services improving the capacity of the Local Authority. There were also consequent softer positive impacts with the service empowering users to feel in control and at the centre of their health and wellbeing decisions.