Local Investment Programme

Interim Evaluation Report

April 2018

Care and Health Improvement Programme

Local Investment Programme

Delivering Health and Social Care in a Digital Age

Local Investment Programme is overseen by the Local Government Association on behalf of the funders NHS Digital

OPM Group and the Bayswater Institute were commissioned to evaluate the Local Investment Programme in two stages – this interim evaluation report and a final evaluation report.

Programme Overview

- The LIP programme has funded **19 interventions** that are using different digital technologies, in various contexts for different outcomes.
- 15 of the interventions began in the summer of 2017 with funding of **£50,000** split into two equal payments. (Solihull's project requested less funding)
- Bradford, Hackney, Liverpool and Nottinghamshire's interventions commenced in the winter of 2017/18
- While the projects fall into **five categories**, they also **span categories** and vary in approach.
- The progress of the projects so far is showing that they are **adapting to local circumstances** and input from national policy and governance.
- This means that they are **iterating and adapting** their approach to overcome challenges and focus on enablers, where they exist.
- As such, they are not trying to constrain the solutions but are facilitating an **action research approach** to developing the interventions on the ground.

- This Interim Report reflects on the early stages of the project delivery, it will be followed by a full project and programme evaluation in Phase 2 to be delivered early 2019
- OPM Group and the Bayswater Institute's (BI) have designed this evaluation to **broad enough to capture what is being learnt on the ground** and synthesise this into material that can be used to **guide intervention development and the evaluation of projects in the future**.
- In this report we identify **key themes that recur across the projects** and draw learning from these themes.
- The goal is to capture both the **status and trajectory of the projects** but also to develop **key learning points that can guide future programmes and evaluations.**
- This interim report will capture the themes as they are being reported currently in monthly reports from projects
- As the projects progress the thematic analysis will continue and themes may evolve.

The thematic analysis will be in two areas:

1. Economic Evaluation

The costs identified by most projects include the costs of any new pilot technology, as well as staff and evaluation costs, but many seem to neglect the cost that is being offset on internal IT departments to implement the new technology.

While projects did not struggle to locate the potential savings and cost avoidances, there were challenges in *measuring* these outcomes. These included locating where system bottlenecks lie, isolating how much the digital technology alone enables system efficiencies, and factoring in the time it takes for the behavioural changes required for the new systems to work.

Most projects planned for sustainability based on efficiencies and cost savings afforded by the new systems.

2. Analysis of the challenges and enablers

The key recurring themes across the projects about the challenges and enablers of the LIP projects were:

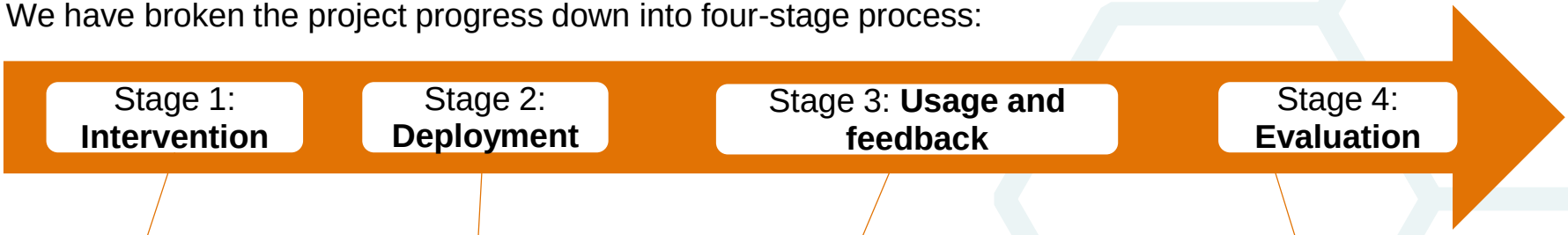
- Ambition – the benefits of starting small
- Information governance, data sharing and consent
- The potential impact of General Data Protection Regulation (GDPR) on projects
- Developing with partners and coming to agreement about intellectual property (IP).
- Ethics approval
- Implementing behaviour change

Programme Overview

Theme 1: **Sharing information and integrating services**	Theme 2: **Enabling people to interact with care services through digital channels**	Theme 3: **Promoting independence and wellbeing through the use of digital services and technology**	Theme 4: **Integrating commissioning through the improved use of information and analysis**	Theme 5: **Enabling care professionals to work from any base at any time**
Luton & CB: Enabling care homes to access care records	**Bradford:** Connect To Support virtual assistant service	**Barnet:** Assistive technology in supported living	**Kent:** Care Navigator digital tool to assessing outcomes	**Peterborough:** Aligning systems using same social care database
Leicestershire: Methodology for measuring and supporting prevention	**Essex** : Video communication in reablement	**Bath and North Somerset**: Range of assistive technology apps	**Liverpool:** Digital medication records in care homes	**Plymouth:** Enabling providers to access care management info
Norfolk: Customer service client referral service to voluntary sector	**Harrow**: Extend ePurse System to integrated personal health budgets	**Hackney**: Digital CBT for residents with long term conditions	**Wolverhampton:** Shared DTOC data across five councils	**Solihull:** Providing MH professionals with mobile tech
Sefton & Knowsley: Real time view of home care capacity	**Stockton on Tees**: Online care plan tool shared with professionals	**Hampshire:** Using voice activated home audio speaker for social care users		
Nottinghamshire: Shared social care record system				

Programme Overview

We have broken the project progress down into four-stage process:



- The technology has been selected
- The stakeholders have been engaged
- The theories of action and change have been described

- The operational procedures have been agreed and allocated
- The method of engaging end users is in place
- Some technology will be in the hands of end users

- The experience of the end users is captured
- The experience with the technology is monitored.
- There may be some iteration in this stage to further develop the service or technology
- Learnings generated

- This stage is an extension of stage 3
- The outcomes described in the theory of action and change will be captured and compared to what was expected
- This will be a summative evaluation as the intervention should have stabilised
- The indirect and direct costs of the approach will be understood to the extent that the outcomes can be linked to the costs

Programme Overview

The project stage reached by end of March 2018:

	Pilot or extension of existing	Local Authority	1: Intervention	2: Deployment	3: Usage and feedback	4: Evaluation
1	Pilot	Luton & Central Bedfordshire				
2	Extension	Leicestershire				
3	Extension	Norfolk				
4	Extension	Nottinghamshire				
5	Extension	Sefton & Knowsley				
6	Extension	Bradford				
6	Pilot	Essex				
8	Extension	Harrow				
9	Pilot	Stockton-on-Tees				
10	Pilot	Barnet				
11	Pilot	Bath				
12	Extension	Hackney				
13	Pilot	Hampshire				
14	Pilot	Kent				
15	Pilot	Liverpool				
16	Pilot	Wolverhampton				
17	Pilot	Peterborough				
18	Pilot	Plymouth				
19	Pilot	Solihull				

In the cases of **Leicestershire** and **Wolverhampton**, the red boxes indicate a block on progress due to the Digital Access Request Service applications with NHS Digital. For **Stockton-on-Tees** the block is a software dependency issue on a supplier which has led to the project stopping after the first phase of funding

The economic evaluation is dependent upon achieving stable deployments, therefore projects must reach stage 3 before the outcomes can be fully quantified and the real direct and indirect costs assessed.

The following section discusses each theme in turn; describing the key outcomes achieved in each theme, the anticipated cost savings, and how these can be identified and measured:

The Challenge

- The projects are **varied in their implementation**, **their stakeholders and their outcomes**.
- This provides a framework for a range of **return on investment approaches** that will be developed as the projects progress and real data becomes available – **to be included in the final report.**

Following the interim report, we will be conducting interviews with project leads and local stakeholders. Findings will be included in the final report. This will also allow more time for the project to develop, allowing for:

- Additional costs to be identified, differentiating between start-up costs, hidden costs (such as IT), ongoing and direct costs.
- Efficiencies to be proven (as some benefits will take time to unravel).
- Some savings can only be realised after there has been some cultural change.

Costs across all themes

- New pilot technology
- Training costs
- Staff costs (including admin staff, IT staff, technical specialist)
- Evaluation costs
- Several projects including **Nottinghamshire** and **Peterborough** require a lot of support from internal IT departments. These costs are not always recognised, as IT is seen as a shared resource, which means it would fail to give a realistic assessment to guide other organisations as to set-up costs.

Theme 1: **Sharing information and integrating services**

Savings/cost avoidance

- **Less emergency admissions** as some admissions could be avoided through digital communication with health care professionals and new uses of advanced assistive technology, as well as timely access to the most up-to-date patient information.
- **Less non-elective admission to hospital** will mean that the care staff and social care discharge team will have time freed up.
- **Reduced length of stay in hospital** through shared care protocols.
- **Efficiencies** available to the system
- **Less or no delayed transfers** when returning to care homes.
- **Reduction in medical errors** and in the number of client, staff and visitor incidents, meaning reduced insurance bills
- Savings from **shifting cost of care from acute to community settings** and from **statutory services to self-care** and prevention.

Additional outcomes

- Staff training
- Improved staff compliance
- Improved rates of referral
- Improved reputation (CQC)
- Improved client, staff experience
- Increased independence of service users
- Where the pilot has opened up the possibility for additional funding. E.g. Luton Borough Council have received a more funding from NHS to roll out project across the whole STP.

Theme 1: **Sharing information and integrating services**

Challenges to measuring outcomes

- Challenge to isolate how much the digital alone enables system efficiencies. e.g **Luton and Central Bedfordshire** *'Have efficiencies been due to the digital or did it just help as part of other reductions.'*
- The potential impact of the **General Data Protection Regulation** (GDPR) being introduced in May 2018 Locating where the system bottle necks are.
- Enabling better predictions to know where cost savings could be.

Additional considerations

- **Trust** takes time to build up.
- It is a challenge integrating data between health and social care to measure outcomes. This also makes it difficult to look at individual patient pathways at a granular level.
- Data sharing authorisation from NHS Digital causing delays. It is important to note that convincing people to share data is a **time/cost in itself.**
- Where some project leads have felt enabled to apply for further funding, it will be important to explore how they have demonstrated the need for more funding and include these findings in the final report.

Theme 2: **Enabling people to interact with care services through digital channels**

Savings / cost avoidance

- Giving patients the independence to stay out of traditional services. This will lead to a cost saving from **reducing the number of physical visits to a health practitioners** and the **level of input needed from care workers**.

- **Optimise care worker time**, for example allowing them to make calls remotely to more services users (**Essex**) or reducing duplication of work (**Stockton-on-Tees**)

Additional outcomes

- People with complex needs and their families have better quality of life
- Less institutional care
- Reduced acute care needs
- More efficient use of money and resources
- Better care coordination and personalised care planning
- Help to reduce health inequalities
- Growth of providers and a support and independent-living network in the borough
- Integration and collaborative opportunities
- Furthering the personalisation agenda
- A shift in health and social care culture
- Empowerment of service users and patients to become the commissioner and control their own care
- Raise digital capabilities of service users overall

Theme 2: **Enabling people to interact with care services through digital channels**

Challenges to measuring outcomes

- Limited uptake due to teething problems with technology and people with complex care needs
- Takes time to **influence behaviour** change and see return on investment. This will be included in the final report.
- How to determine what costs there are coming from outside of the funding (e.g. **incentives**, etc)

Additional considerations and suggestions

- When measuring cost avoidance to reablement, it is possible to build up proxies of cost and see where it falls up stream. For example it is possible to model readmissions.
- There needs to be trust in the new system and technologies through behaviour change to make these savings.
- Incentivising professionals to introduce people to adopt the technology has improved take-up (e.g. in **Essex** they had used funding from elsewhere to provide an incentive.)
- Cost benefit should look at set up costs vs the returns over time, as it takes time to build trust. The cost benefit would grow over time. This will be included in the final report.

Theme 3: **Promoting independence and wellbeing through the use of digital services and technology**

Savings / cost avoidance

- Reduction in non-elective hospital and residential care admissions
- Reduced delayed transfer of care
- Free up capacity to for care workers to take more cases and support more people
- Reduction in care package costs
- Delay in need for domiciliary visits
- Use of data and monitoring analytics to gain an accurate picture of individual's regular life patterns and needs to provide data-driven care - smarter working

Additional outcomes

- Feeling of isolation in service users decreased
- Feeling of assurance in family members increased
- Care practitioners satisfaction with new technology
- Reduction of care package
- Greater independence and more personalised care
- Ability to deliver immediate 24/7 support

Challenges to measuring outcomes

- **Collecting data is a challenge and a cost in itself** as collecting **qualitative data is very time consuming**
- How best to measure the cost benefit of improving isolation

Suggestions

- There needs to be a lot of longitudinal data to measure these outcomes.
- Can introduce technology incrementally and test whether it is having cost saving benefits and can iterate accordingly.

Theme 4: **Integrating commissioning through improved use of data and analysis**

Savings / cost avoidance

- Identification of individuals who will benefit from further proactive interventions to avoid deterioration of their situation with concomitant costs.
- Delay need for statutory services
- Reduced hospital admissions and delayed transfer of care
- Reduced admissions to care homes
- Reduce wastage of resources and medicines
- Reduction of staff time in administration (**Liverpool**)

Additional outcomes

- More effective commissioning of care navigation service
- Identification of most effective community resources
- Analysis of level of public follow-up of recommendations

Challenges to measuring outcomes

- Savings can only be realised after cultural change
- Need to understand pathways to measure signposting away from statutory services. This is a challenge with information governance issues.

Suggestions

- Need people to support the cultural shift with technology

Theme 5: **Enabling care professionals to work from any base at any time**

Indirect savings / cost avoidance

- Reducing the need for travel will reduce staff and travel costs
- Reduced unplanned emergency admissions
- Reduction in residential admissions
- Reduced delayed transfers of care
- Less duplication of work
- Improved data sets for better system planning

Additional outcomes

- Improved intermediate care outcomes
- Flexible working will enable outside of office hours working

Challenges to measuring outcomes

- Defining a directly attributable cost
- Cost of delays in supplying and learning to use new IT equipment

Suggestions

- Identify cost of a visit and any reduction through different ways of working
- Looking at data with HR team and social workers
- Staff turnaround and retention, which counts as cost

Sustainability

We will discuss approaches to sustainability with project leads in greater detail and to what extent the plans for sustainability are being realised. We will include additional findings in the final report.

In most cases the plan for sustainability is built on the efficiencies brought about by adopting IT solutions. The savings from this added efficiency is intended to fund the ongoing IT delivery, and project development / expansion into the future.

Several projects including **Bath, Nottinghamshire Harrow, Luton** and **Liverpool** have used the LGA funding to **create exemplars** which convince care homes that digital connectivity provides better outcomes and more efficient system delivery. The intention is that the ongoing costs of the projects (e.g. any broadband connections or software licenses) to the home are outweighed by the **benefits and savings in efficiency received.**

In other cases, including **Barnet, Kent, Wolverhampton, Peterborough** the approach is being integrated into regional improvement programmes and STPs and will inform the final design for the implementation of the new social care systems.

In **Solihull, Hampshire, Norfolk, Leicester** and **Plymouth,** the ongoing costs of maintaining laptops to deliver the projects have been agreed by the IT department. The outcomes are predominantly in **efficiencies** of being **able report anywhere and supply information on the spot.**

Other projects, such as **Stockton-on-Tees** have no ongoing costs, and once the software is developed it willcontunue to be available and in **Hackney** the project is being used to develop partnerships and identify future opportunities.

Although some of the projects are early in their development this report considers what progress has been made so far and what has been learned about challenges and enablers that the projects have faced.

The breadth of the projects and their plans for using technology creates an opportunity to explore how digital innovations in care engage with the complexity of their context. This will be an ongoing search as projects evolve and new learning becomes available.

There are several recurring themes that emerge from the projects as they begin to move into the deployment and usage phases of their projects (see page 4), which will be explored in this section.

Not all themes occur in all projects, but they appear often enough to represent issues that could be supported by more detailed consideration in the development of future project proposals.

The table below lists the key recurring themes that are emerging in terms of challenges and enablers for the projects to date. These themes will evolve as the projects continue to progress, and others may emerge:

1. Ambition – the benefits of starting small
2. Information governance, data sharing and consent
3. The potential impact of General Data Protection Regulation (GDPR) on projects
4. Developing with partners and coming to agreement about intellectual property (IP)
5. Ethics approval
6. Implementing behaviour change

The challenges and enablers are based on the monthly reports submitted by the projects, who in most cases are still in the first phase of project delivery. There will be further evidence as their projects develop through phases 2-4. These will be captured in the final report.

Ambition – the benefits of starting small

The Challenge

- When developing project proposals, it is tempting to over-commit and identify the widest deployment of a project from the outset to make for a competitive bid.
- Several of the projects have made good progress by having a staged approach to developing the intervention.

The learning

- A staged approach where the scope of the project is initially limited to engage key stakeholders is necessary to demonstrate the possible outcomes and secure more buy-in.
- The early parts of a project are usually taken up with discovering where the challenges lie.
- Once these have been surfaced and addressed it gives other stakeholders confidence to engage.
- This can then be followed by a roadmap of broader engagement that leads to scale

1. **Ambition – the benefits of starting small**

- The **Luton and Central Bedfordshire** project recognised the challenges of getting digital services into care homes. They started by implementing a 'Bronze' level into **five homes** which included a Wi-Fi signal that was of a certain quality around the home and arranging for the home to have an NHSNet email address. This level of engagement with the care homes was not too daunting for them and the offer to set up Wi-Fi acted as an **incentive for engagement**.
- Once the broadband connectivity was in, the homes could **progress** to 'Silver' which gave them access to the GP record.
- The broadband facilitates a range of new digital possibilities that can become part of the 'Gold' package.

- **Liverpool** are focusing on getting homes working with a care management package.
- They had the advantage of having connected 65 of their 96 care homes to Airedale's clinical teletriage hub in West Yorkshire, which meant that the Wi-Fi capability was already installed.
- They anticipate working with 10-20 homes by June and ramping up from there.

- **Wolverhampton** discovered how challenging it can be to coordinate many partners when their project initially involved 14 councils.
- This was reduced to 4 to 5 with the remainder observing the outcomes for a potential later round of engagement.

2. Information Governance and Consent

The Challenge

- This is a particularly challenging area, where **projects that try to stratify patients run into patient identifiable data problems**. (e.g. Wolverhampton and Leicestershire)
- There is a recurring **bottleneck in approving data usage.**
- The Information Governance (IG) leads in trusts and care organisations tend to be focused on local issues. Innovative use of data then becomes subject to **resource constraints.**
- Organisations that put resources into projects that stall where there appears to be no help and the problems are difficult to uncover become **averse to innovation.**

The Learning

- NHS Digital could take this opportunity to **guide and facilitate data use**. They have a real opportunity to support innovation by having templates for stakeholder roles in common data sharing situations. For example, explaining who should take the data controller role and who could be the data processor.
- The example of how **Liverpool** have achieved their regional data sharing agreements and their roadmap to interoperability across health and social care would be a beneficial case study for other projects.
- Care system innovation projects experience **fewer barriers to data management**. While this is a benefit, it skews innovation towards these system developments at the expense of projects that consider the **patient journey**. To move to an outcomes-based approach that is patient focused there needs to be **guidance on how data can be used to achieve these benefits.**

2. Information Governance and Consent

Wolverhampton and Leicestershire have had their projects significantly **delayed** because of issues around use of a predictive analytics supplier and obtaining **sign off on the use of data from NHS Digital**.

- **Leicestershire** had collaborated with their Commissioning Support Unit (CSU) to pseudonymise the data such that the patient journey could be charted without the patient being identified. When they **submitted this to NHS Digital** for a Digital Access Request Service (DARS) they were told to **stop using the approach immediately**. Between September 2017 and now they have been **unable to progress**. The contract with their predictive analytics supplier has been allowed to expire and their project is behind.
- Similarly, **Wolverhampton** wanted to use Predict X to produce a dashboard that would facilitate better understanding of patient flow and delayed transfer of care. They were working with their local CSU to provide pseudonymisation of the data and are **still waiting for DARS sign off**

Liverpool is introducing a care management system across care homes. The region has put a lot of effort into establishing **data sharing agreements**. There is a roadmap for providing connectivity across social care and then introducing interoperability with health.

Sefton and Knowsley have a project developing **real time view of homecare capacity** across the two local authorities and also including Liverpool. This care system-side view of flow is not subject to the same issues as **no patient identifiable data is used**. They plan to integrate with **Liquid Logic** case management in the future and it is likely that this is when IG will become an issue.

Kent have avoided IG issues by **not obtaining any personal information** as part of their voice of the end-user service. They have developed an app with Leicestershire Informatics to allow people to feedback on their experience of care. **The data is anonymised by district.**

3. Potential Impact of General Data Protection Regulation on Projects

The Challenge

- The EU GDPR comes into force on **25th May 2018**. It will have a great impact across any use of personal data.
- There is a lot of activity in the public and private sector in raising awareness of the impact of GDPR.
- In practice the Information Governance (IG) leads will be the front-line in handling changes and local negotiations around the new regulations.
- GDPR will have impacts in **consent, data sharing, breach notification, privacy by design and the role of Data Protection Officers (DPO.)**
- As organisations review their systems and consider the future, requirements issues around information governance are likely to slow down. **This may explain the delay in the DARS response for Leicestershire and Wolverhampton.**

The Learning

- Changes on the scale of GDPR do not occur with great frequency. However, health and social care are always operating against a background of continual change.
- This is a major contributory factor for why things always take **longer than planned** and an intervention in implementation **often looks different to what was originally planned**.
- This calls for **flexibility in approach** and an **action research** approach to intervention development that **accommodates change rather than persisting with the original proposal**. The LIP programme is a great example of this in action.

4. Developing with partners & coming to agreement about Intellectual Property

The Challenge

Intellectual property identification and management is a source of risk for many projects across the public and private sector. There are two main sources for this risk:

a. That the innovation **breaches another entity's intellectual property** and/or

b. That the development of the innovation **through collaboration** will result in **disagreement over intellectual property** that will stop the project.

The complexity of the second point increases as the number of stakeholders increases.

Intellectual property comes in the form of patents, registered designs, trademarks and copyright.

Currently, within the LIP programme most projects are purchasing software/services from third parties and this usually requires that the third parties **protect the purchaser against IP issues**. IP considerations are likely to arise when they **begin working on their solution.**

The Learning

As part of the document repository we will seek wording around IP development from other publicly funded innovation projects. This will help to inform the future guidance on IP development within projects.

Kent is developing an app with Leicestershire Health Informatics Service which means any IP should be within the NHS. However in the G-Cloud 9 Contract, it states that:

The Supplier grants the Buyer a non-exclusive, transferable, perpetual, irrevocable, royalty-free licence to use the Project Specific IPRs and any background IPRs embedded within the Project Specific IPRs for the Buyer's ordinary business activities.

Bradford is interviewing technology providers but there is no current provider who has exactly what they need so are instead linking with local universities.

5. Ethics Approval

The Challenge

- As more innovation crosses over between health and social care the **difference in the ethics approval becomes important**.
- Often the level of ethical approval required will be perceived differently by different stakeholders. For instance, a collaboration with a health provider may see the intervention as research whereas a social care provider would see it as service development or audit, which require **different levels of ethical clearance.**

The Learning

- Seek **guidance early in the project design** about the level of ethical approval required. This will be tied to whether the intervention is improving service delivery or constitutes a new way of delivering care.
- Seek **information from projects that have implemented similar interventions**.
- It is important to establish the **level of flexibility** allowed by the ethical approval obtained to change the project.

Bath and North East Somerset ran into early delays around both ethics and intellectual property discussions with their University partner and instead partners with TSA.

6. Implementing Behaviour Change

The Challenge

- For many projects there have **been behavioural barriers** which are limiting the project results. These include **resistance to adopt or deploy new technologies and digital literacy**
- The variation in this across projects and regions can explain why transferring interventions between contexts can yield very different results
- The area of behaviour change, relating to adoption of new ways of working, is highly studied because it is so challenging

The **Luton and Central Bedfordshire** project improves Wi-Fi in care homes offering them an advantage for internal use.

In **Liverpool** the project gives the care home an advantage in their documentation management with the same system providing better medication management and data capture

The Learning

- As the interventions develop within their contexts one of the key factors in success becomes **engagement** with the projects by **front-line staff**
- The **role of champions** is often a key factor in motivating people to change, particularly when it comes to trusting new technology
- It can come from incentivising new behaviour
- We use the COM-B model which looks at three factors that contribute to behaviour change. These are: capability, opportunity and motivation to engage with the intervention
- By exploring the capability, opportunity and motivation for change the projects will also contribute to better understanding of how behaviour can be successfully addressed when implementing interventions

The **Essex** project implemented a reward system for referrers within their reablement team

Building an Example Document Repository

The projects have been asked to supply examples of the following documents where relevant for their projects:

- Patient Selection Criteria
- Patient Consent Forms
- Ethical Approval
- Section 75 Agreements
- Information Governance Pack
- Data Sharing Agreement
- Privacy Impact Assessment
- Interoperability Specifications
- Care Provider Service Level Agreement
- Family Engagement Documentation

In addition to the project documents, the thematic analysis has identified several other documents that could be useful to add to the repository. These include:

- Examples of intellectual property approaches from other public sector funded projects
- A case study regarding data sharing across the Liverpool area
- Guidance on the ethical requirements for projects of the type in the programme.

These will be used to build a document repository which will be included with the final report

Developing a Digital Maturity Approach

The two models (right) measure digital maturity, as well as the themes uncovered throughout this report. These have formed the basis of our **suggested digital checkpoints,** to uncover digital maturity of health and care interventions:

1. **Staged and iterative approach:** projects should have a discovery stage and be flexible to respond to any changes throughout, while developing a roadmap of activities.
2. **Stakeholder map:** projects should clearly identify key stakeholders including users, practitioners, IT
3. **Stratification or selection process:** the end user engagement process should be identified.
4. **Data sharing and governance:** the roles of data controller and data processor should be identified.
5. **Engagement with NHS Digital**: early engagement with NHS Digital and the need for DARS should be explored at the start.
6. **Ethics:** the status of the project with regard to whether it constitutes health research, service development or audit should be established to avoid bottlenecks.
7. **Intellectual property (IP):** the role of IP should be considered early on.
8. **Sustainability:** there should be a strategy for sustainability in place.
9. **Exemplar search:** has the approach, or something similar, been attempted elsewhere? Are documents available?
10. **Behaviour change:** the capability, opportunity and motivation for behaviour change should be considered. Drawing on previous examples could guide motivational aspects.

1. **The Digital Maturity Assessment** (NHS England) measures maturity across three key themes: readiness, capabilities and infrastructure. A similar digital maturity assessment (LGA) for local authorities with social care responsibilities
2. The Digital Service Standard contained in the **Government Digital Service (GDS)** model. It has 18 check points to determine whether a service is good enough for public use.

Digital tools used across projects: Theme 1

Project	Digital Tools Introduced	Comments
Luton and Central Bedfordshire	Telecare, Telehealth and NHS Mail	Gradual approach of introducing tech into homes has helped to ensure buy-in. Used the incentive of setting up better quality Wi-Fi to engage care homes
Leicestershire	PI health tool – new dashboard for easy analysis	Developing methodology for measuring and supporting prevention and non-medical interventions by mapping the customer experience and creating user personas in the next few monnths Data sharing issues – authorisations from NHS Digital has led to delays. May adopt an alternative approach which does not include sharing health information
Norfolk	Electronic, automatic referral system (NCAN)	Struggling to incorporate the '**Money Matters**' into the NCAN online portal. The number of referrals has been significantly lower than originally estimated. Some potential organisations identified by practitioners have not wanted to join the network at this stage.
Nottinghamshire	24/7 information sharing platform across health and social care	Challenges to find a system that secures flow of information and meets data protection and information governance requirements Requires staff behaviour change as they need to upload more current up-to-date info to optimise use of the system
Sefton and Knowsley	A digital interface that will streamline the process of requesting homecare services and provides real-time view of service requests, delivery and capacity available to all health and care professionals.	Liverpool City Region Tripartite are working with **Strata Pathways** to develop and deliver the project. Capacity submissions have been deployed within Liverpool, however, there has been a delay in Knowsley and Sefton due to the recent re-commissioning of domiciliary care providers. A digital interface is a requirement within the new contract and new timescales have been identified for implementation.

Digital tools used across projects: Theme 2

Project	Digital Tools Introduced	Comments
Bradford	Artificial intelligence virtual assistant to add to existing self assessment tool	The vendors interviewed do not have complete solutions so a buy versus part-develop decision is being considered. Started to work with **University of Bradford** to provide some research resource and expertise
Essex	Device to offer video calls instead of physical visits by a care worker	Planned to partner with **SpeakSet,** but there were issues with the firewall which required a 4G workaround Now use **Breezie** technology as well as SpeakSet to overcome issues
Harrow	Extension of My Community E-Purse to include personal health budgets	Working with **IBM** (Watson Care Manager). The CCG has reduced the agreed scope as they decided that at this stage only direct payments and not commissioned care of PHBs should be managed by the Council. This has reduced the opportunity for cost savings as the number of people involved will be significantly smaller. The new scheme has been successfully set-up which should demonstrate potential to extend to commissioned care and possible use of Harrow's ePurse service by neighbouring CCGs
Stockton-on-Tees	Create an open API from an online care planning tool to allow it to be shared	Worked with digital provider to develop the API, but there have been delays from the provider's end Challenges to creating a model of consent and issues with Information Governance were resolved through work with **Connected Health Cities**

Digital tools used across projects: Theme 3

Project	Digital Tools Introduced	Comments
Barnet	Personalised Telecare	Working with **Argenti** to set up the technology who have been active in promoting technology to frontline staff via team meetings Complications with existing technology systems and behavioural challenges
Bath and North Somerset	Apps and devices for reablement and rehabilitation	Partnered with **Virgin Care** and **University of West England (UWE)** to deliver the services but have had Information Governance issues between individuals, Virgin Care and UWE with NHS Ethics approvals a challenge. Have reshaped the project with TSA to overcome the ethics approval barrier with UWE
Hackney	Digital CBT tool Silvercloud	Challenges with Digital Literacy and consistent engagement and are scoping the impact GDPR. Are reviewing the 6 legal bases for processing data, to determine with 'public task' or 'legitimate interests' would provide the backing for patient information to be stored by an independent data warehouse and collated. Using **Queen Mary University of London** to do the data binding
Hampshire	Amazon Echo/Alexa for social care	Devices are being put into people's homes working with **Argenti** to ensure appropriate referrals and Alexa is compliant with Data Governance protocols Developers needed to tailor the voice functionality

Digital tools used across projects: Theme 4

Project	Digital Tools Introduced	Comments
Kent	Development of an app which Care Navigators can use with the member of the public on a phone or tablet at any location	Information governance issues resolved through not collected person level data. Tablets set up with the app by **Leicestershire Health Informatics Service** and given to care navigators to pilot the app.
Liverpool	Electronic Medicines Adherence Record (eMAR)	Lack of broadband in care homes which has resulted in delays due to ICT capacity across care homes The **Liverpool Care Homes Partnership,** a Community Interest Company set up a few years ago, has been used to make the decision about selecting the products/partners to work with and enabling quicker procurement away from the bureaucratic council procurement processes.
Wolverhampton	An interactive dashboard with regional data to assist commissioners in local areas to understand performance	Working with **Predict X** but data access requests has been made to NHS Digital for the use of data obtains by CSU.

Digital tools used across projects: Theme 5

Project	Digital Tools Introduced	Comments
Peterborough and Cambridgeshire	Integrated health and social care record portal	Using **Servelec's Mosiac** system The timeframes associated with Mosaic implementation are different across Peterborough and Cambridgeshire, making alignment of project milestones more challenging.
Plymouth	A Multi-Agency View tool that interacts with the used case management and data collection systems at source	Capacity amongst providers to deliver the necessary software within the timescales requested has resulted in some delays. Having an integrated care provider **Livewell Southwest**, has been beneficial for several reasons including the existence of IG.
Solihull	Agile Information Technology to carry out statutory duties in the most appropriate location (on laptops)	Some technical issues surrounding 4G but all mobile devices have been deployed.

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