A Collaborative Council-led Discovery Project into the Benefits of a Digital Approach to Multi-Partner Medicine Support in Domiciliary Care

Discovery Phase Draft Report - November 2019

Multi-Partner Domiciliary Care Medicine Support Discovery Overview

This discovery project aims to tackle the complicated relationships that exist between patients, GPs, pharmacists, hospitals, carers and family members in terms of medicine management.

Local authorities are responsible for commissioning a significant amount of domiciliary care in the UK. Every day millions of people are supported by paid care workers in their homes and an important part of the care role is to support people to take their medicines safely and at the right time. Anything which improves the knowledge, accuracy and support to carers to do this more effectively could offer significant gains across local government, primary care services and health and care partners.

This Multi-Partner Domiciliary Care Medicine Support discovery project aims to reduce patient risk by reducing errors and improving care, and build a business case for the efficiencies and savings that could be achieved. It is based on the premise - agreed by the councils involved in the project - that a digital approach could offer significant improvements for people delivering and in receipt of care, resulting in reduced admissions to hospital and improved outcomes from their medicine support plans.

Against a backdrop of increased digitalisation within prescription management and the NHS more widely, the Social Care Digital Innovation Accelerator run by the Local Government Association and match funded by NHS Digital has supported this discovery project. Co-funded and led by five councils this discovery phase aims to understand the challenges and opportunities within the current system.

A National View: Digital Is the New Norm

With national funding pledges to increase the uptake of e-prescribing in hospitals, digital medicines management occupies a prominent place on the national healthcare agenda.

A report by the Department of Health & Social Care estimates that unused medicines cost the NHS around £300 million every year, with an estimated £110 million worth of medicine returned to pharmacies, £90 million of unused prescriptions being stored in homes and £50 million worth of medicines disposed of by care homes and domiciliary care.

Medication-related errors cost the NHS nearly £100 million a year in re-admissions, length of stay and litigation, alongside this digitisation is proving to reduce errors which is good for both the health service and patients.

Some 70% of the 650 million prescriptions produced per year are now electronic and take up of electronic prescription services by patients is also increasing.

The big challenge is in reconciliation of medicines as patients move between different parts of the system. 95% of patients only get their medicines from a GP, but as soon as a person goes into hospital and are then discharged with new and/or additional medication it becomes

more challenging. Around a fifth of hospital readmissions are due to failures to accurately transfer changes to medication to GP systems[1].

The reality of working within a complicated, pressured landscape with multiple digital approaches and disparate systems is challenging. Trying to rationalise the many systems and ensure interoperability of those that are key, is important to ensure we leverage the digital benefits for all stakeholders.

A Local View: Halton Borough Council

In line with the national picture, it is estimated that Halton Borough Council will experience an increase in its ageing population with expanding health and social care needs. In particular, there will be significant increases within the older age group of 85+, often characterised as having the greatest and most complex needs.

In the context of reduced funding from central Government, there is a need to be increasingly efficient and innovative to ensure that the needs of this ageing population can be met now and in the future.

Halton BC is an area with relatively low admissions to residential and nursing care compared to the national average, but a higher than average number of people living at home with a package of domiciliary care. This results in a wide number of partners in the local system supporting people to take their medicines at home.

Changes to the way services are delivered and the local demography has resulted in increasing numbers of people with complex needs and complex medication needs living in their own home and receiving care. This is beneficial for all as it is widely agreed that people living in their own homes with support lead to better outcomes.

The prescription, supply and administration of medicines involves multiple partners and poses significant challenges in relation to the timely administration of planned and unplanned medication. There are also challenges with medication wastage through the use of metered dosage systems, it is believed that moving to original packaging may reduce this.

Time spent managing medicines in different care settings is often lost due to a lack of clarity around patient medicines. Changes in medication and/or provenance of medicines can also cause complications and delays. The following figures start to illustrate the time and costs involved:

Domiciliary Care Medicine Support Headline Costs

- 255 patients with medication care requirements
- Total hours of care delivered each week = 1,723
- 15% of hours per week spent on medicine management = 259 hours per week

Cost of medicine support in domiciliary care: 259 hours x £14.50 = **£3,750 per week**

[1]Chief Medical Officer at EMIS Health https://www.digitalhealth.net/2018/06/special-report-medicines-management/

Supported Housing Medicine Support Headline Costs

- 38 people with medication care requirements
- 38 x 1.5 hours per week = 57 hours per week on medication

Cost of medicine management in supported housing: 57 hours x £14.50 = **£826 per week**

Reablement Medicine Support Headline Costs

- 51 patients with medication care requirements
- Total hours of care delivered each week = 600
- 15% of hours per week spent on medicine management = 90 hours

Cost of medicine support in reablement: 90 hours x £17.50 = **£1,575 per week**

Total per week cost of medicine support in Halton = **£6,151**
Total per annual cost of medicine support in Halton = **£319,852**
(All costs as of Spring 2019)

The above figures start to show the potential for savings. Halton BC is a relatively small local authority area, so if scaled up, the opportunity could be significant. It is currently unclear as to the scale of saving a digital approach could offer, this is something the next stage of this project will work to uncover.

Multi-Partner Domiciliary Care Medicine Support Accelerator Approach

From the outset the project recognised that significant, existing work had been done in this arena. The purpose of an ‘accelerator’ approach is to engage collaborating councils - from different regions, with different care providers and systems - along with their health and care partners, with a technology provider to collectively surface the widest possible range of challenges faced and understand how and if technology could support them.

It was decided that to make best use of budgets and resource that an existing provider in the digital medication management sector should lead the project. MED e-care is a provider with 20+ years’ experience in the digital medication management arena with digital solutions primarily supporting the care home market.

With many of the technical issues already resolved through their eMAR solution, including integration with more than 80% of the UK’s pharmacies (including Boots and LloydsPharmacy) and a significant share of the care home market, their knowledge of the issues and expertise in this domain was agreed by all to be valuable in leading this project. Also, should the learning from the discovery phase be agreed to move into development, significant savings would be made by adapting an existing solution rather than starting from scratch.

Multi-Partner Domiciliary Care Medicine Support Discovery Workshop

The purpose of the discovery workshop was to understand the ‘pain’ within the current processes and the implications of moving from the current predominantly paper-based system to a digital solution.

This workshop was the first step in the process of determining the role, shape and size that a digital solution could play in this process.

Multi Partner Discover Workshop - Halton Borough Council - August 2019

During the workshop, each council spoke of their challenges and frustrations within the existing processes. There was consensus around the main areas and where digital could play an important role:

- **Medication Administration**

The administration of medication currently involves multiple partners, a range of delivery systems and complex pathways. Ongoing changes to the way services are delivered and the local demography has resulted in increasing numbers of people with complex needs and complex medication needs living in their own home and receiving care. Additionally care staff are not paid to make clinical decisions and inconsistency of care staff means that a lack of continuity adds to the time it takes to be clear and up to speed around medication and thus can negatively impact on medication management and patient safety. Feedback from a carer within the reablement service in Warrington summed up the situation: *“Meds issues occupy my whole life”*

- **Self Administration & Prompting**

There were differences/variations among the participating councils about the extent to which domiciliary carers are involved in medicines support. There was discussion around *'when is a prompt not a prompt'* and debate over recognised 'grey areas' and the multiple personal and environmental factors that exist in prompting and administration.

- **Medicine Administration Records (MAR Charts)**

Responsibility for providing and using MAR charts is with the care provider. Care workers should be, and in most cases are, suitably trained and supported throughout the process. In residential care, training and support is easier as all the medication is in one place, MAR charts are more likely to be up-to-date and support for the care worker is there as needed, especially when questions arise around change of medication and administration.

There were differences in the use of MAR charts across the partners. Some partners had standard MAR charts as well as standardisation around medicine codes, whilst others did not. Additionally some partners were working closely with hospitals in their area regarding dispensing and MAR chart alignment.

MAR charts causes a range of issues which were surfaced in the workshop:

- Medication codes: Pharmacies and pharmaceutical companies use different medication codes
- Hospital discharge: Revised/new MAR charts are often created when people are discharged from hospitals and these don't always coincide with existing/ pharmacy charts
- MAR chart accuracy & trust: Carers don't always know or believe that meds on the MAR chart are correct
- MAR chart & medication misalignment: MAR charts often don't match what medication is in the home
- MAR chart checking and auditing: Only 20% of MAR charts are checked in some cases, and as such mistakes, trends and issues can be missed
- MAR chart storage: MAR charts, care and comms plans all have to be kept for 7 years, which is causing storage issues and costs
- Carer routine: Sometimes carers may not look at the MAR chart and just do what they do every day, but medication may have changed
- Hand transcribing on MAR charts:
    - Who is responsible for updating the MAR chart if medication changes?
    - There can often be lots of different paper MAR charts in use for one client
    - Handwriting is often illegible

- **Medication Instructions & Dosage Times**

There is a real problem with medication and dosage times. The person taking the medication might need to take one set of meds an hour before food; then another set half an hour before food then one set half an hour after. All the medication may be in one blister pack, the carer will often be unable to identify which tablet is which and may only visit at breakfast and tea time. Examples such as medication for the treatment of Parkinson's require a person to take the medication, wait and then return for the next dose, which is difficult/impossible to roster for.

On top of this the carer is often faced with the problem of ensuring that the meds are actually taken. Issues of people refusing medication are widespread and carers are time poor and

are stretched. Medication refusals are logged on MAR charts but not analysed or fed back to the pharmacy or GP.

- **System Failure**

It was generally agreed that sometimes patients receive medicines they don't actually use or use only occasionally, leading to them losing out on the intended health benefits of their prescription. The reasons why a person might not take all their medication can vary. Audits have shown that around half of all the medication returned to pharmacies has not even been opened, suggesting that patients are receiving medication that they don't even start to use.

Carers report stories about medication stockpiling, being tampered with, issues of family intervention and medicine security. Additionally it was recognised that 80% of dom care medication is not regulated, including items such as patches, creams etc.

- **Blister Packs versus Boxes & Bottles**

Blister packs (also known as ‘compliance packs’ or ‘bubble packs’) help people keep track of their medicines. Blister packs contain designated sealed compartments or spaces for medicines to be taken at a particular time of day. By comparison dosette boxes have multiple compartments divided by time and date and come in many shapes and sizes with features including detachable units, alarm reminders and different segments for each day.

At the workshop all partners recognised a range of issues with blister packs from different medication needing different administration requirements and timings, to blister packs taking over 4 hours to create in hospital pharmacies severely delaying patient discharge. Issues around who ordered medication were complicated and what roles - both positive and negative - family/next of kin can play were cited.

- **Turnover of Staff & Training**

Retention of care workers is problematic across the board. Carers are faced with long unsociable hours, are undervalued and often poorly paid. Yet everyone acknowledged that they are performing a vital role and need to be supported. There is high turnover of staff in terms of both carers and management, which can have a negative effect on the service.

All carers undergo mandatory training, however due to poor staff retention many new recruits are often untrained, and this can be a major factor when using agency staff.

- **Carer Rostering Systems**

The group identified as critical the need for any solution to interface with their care rostering systems. Across the councils in this discovery project 14 different rostering systems are used:

Halton Borough Council:	CareFree
Warrington Borough Council:	CM2000
Kent County Council:	Care Planner, Staff Plan, People Planner/Access Care, Planning, ICT Bureau, Mobizio, IQ Timecard

Sunderland Council:	CareFree, Webroster, Cold Harbour, Ulysses
Newcastle Council:	CareFree, CareBlox, iCareHeath, Access System, Malinko, Care Planner

- **Previous Digital Experiences/Trials:**

The group discussed previous digital experience in this domain, much of which had mixed success due to failure to engage with carers from the start, lack of training on devices, connectivity issues which affected both use and updating, trust in technology versus paper, data protection challenges, culture change as well as some of the programmes being 'trials' and thus the funding and commitment not continuing.

Agreed Multi-Partner Ambition for a Digital Approach

- To decrease the cost of medicine support in domiciliary care by using digital technology to monitor what is prescribed, how much and when
- To create a digital solution to give 'one version of the truth' in terms of current medication and prescriptions
- To track the delivery of medicines
- Decrease medicine wastage by enabling health professionals to monitor administration, dosage and current prescriptions via a person-centred solution

Digital Solutions in Medicinal Management

Digital solutions have been used in care home settings for approx. 20 years. From MED e-care's experience of this sector there are a variety of benefits to using a digital approach:

- Improved patient safety and compliance
- Improved and simplified medication management
- Reduced risk of medication administration errors
- Quick and simple auditing to ensure adherence to procedures
- Reduced medication wastage with stock control
- Reduced paperwork
- Integration with care planning systems
- Clinical decision support & reporting
- Better patient outcomes
- Improved patient security and GDPR adherence
- Support for complex medication regimes
- Improved operational efficiencies and staff productivity
- Building safeguarding best practice needed to show compliance

During the discovery phase the councils were presented with the current functionality of the MED e-care eMAR solution to assess in terms of their requirements. Since the discovery workshop MED e-care has held conversations with the five individual councils to ensure a deeper understanding of the current processes and the changes that will need to be in place for a digital solution to succeed.

Current Key eMAR Functionality:

- Real-time administration and recording of medication and treatments
- Users have the ability to manage medication orders directly from the MAR administration screen
- Waste is automatically recorded
- Accessible administration history
- Ability to make notes, create follow-ups and manage orders
- Audits and reporting
- Advanced security system to protect confidentiality
- Ability to fully integrate with electronic Care Planning systems, it helping to manage clients' often complex medicine regimes
- Integration with pharmacies

Functionality Review of eMAR for Domiciliary Care

From the discovery workshop outputs, the identified common challenges and agreed ambitions of the five participating councils, a technical review of MED e-care's care home solution was undertaken to assess what additional and amended functionality would be required. It was agreed that a lot of the support and processes that are in place in a residential care setting do not exist in domiciliary care and as such any digital approach needs to be more robust to manage these differences.

Critical Functionality

1. **Carers to be linked securely to clients**

In a care home setting each client has a unique profile and account, all clients are listed under one organisation (the care home) and all care home carers can see all clients.

MED e-care's current eMAR solution does not allow for clients to be individually assigned to a carer as they would need to be in a domiciliary care setting. A local authority (and partner) version would need a fundamental design change to enable each client to be individually assigned to a carer, and for this to be fluid to enable different carers on different days to access the relevant client details securely.

Potential Solution:

- Care staff schedules to be set up as assignments
- Each client can belong to multiple assignments
- Care staff can be assigned to a single or multiple assignment as required
- Create an assignment function with scheduling
- The assignments will match the grouping on the rostering system

2. **Interface work for multiple pharmacies and dispensing systems into a single environment**

The MED e-care eMAR solution interfaces with more than 80% of the UK's pharmacies including big chains such as Boots and LloydsPharmacy

Usually a care home is aligned with one pharmacy to provide all the medications for their residents and they use one set of codes. As such each instance of the current solution interfaces with one pharmacy/API. In a local authority version clients will get their medication from different pharmacies and potentially a number of pharmacies per client, as such multiple API interfaces would need to be enabled to allow for this functionality. Additionally

work to enable coherent and accurate medication code look-up tables would need to be undertaken.

***Potential Solution*:**

- Ability to receive and process medication details from different pharmacy dispensing systems/interfaces within one environment
- Ability to receive medication details from different pharmacy dispensing systems using multiple master numbers

3. Received Orders - Medication go direct to MAR

Building on the pharmacy API, new functionality would be required to enable new medication, repeat prescription and other updates to automatically be listed on the client's eMAR.

Potential Solution:

- Enable automatic receiving of medication
- Switch off received orders

4. API for staff rostering solution

Linking directly to 1. 'Carers to be linked securely to clients', to be able to understand which carer is attending which clients on which day, it is critical that the digital solution interfaces with the rostering system that the care provider uses to ensure carers can see all - and only - their clients for each particular shift

This is a generic MED e-care API that could interface with any open API from the multiple rostering systems (as listed on Page 7), but there could be a cost from rostering provider to integrate with their system. During the discovery phase MED e-care has spoken with Carefree and the headline from the call is that CareFree advise that they are happy to work with MED e-Care eMAR to achieve this integration.

Potential Solution:

- API will allow access to clients to be sent from an external rostering system
- API to allow assignments to be updated according to the rostering without having to login to MED e-Care

Recommended Functionality

1. Show low stock items on dashboard widget

To enable medication to be maintained and not interrupted by shortages or lack of clarity around quantities, being able to show that a client is getting low on their meds would have value for all in the care delivery chain.

Potential Solution:

- Create a low stockholding widget on the dashboard

2. Expired order

Different medication has different shelf lives and this is a challenging area for carers, not only due to how meds need to be stored, their form (liquid versus pill), but also due to the fact that new/different meds can be prescribed in short order from different settings (hospital, GPs et al). Being able to log when medication was begun and the digital system pro-actively tell the carer how it should be stored and how long it will last has real value in terms of both patient safety and reducing wastage.

Potential Solution:

- Ability to set an expiry date for a medication including the date opened - this is different from the current end date functionality
- Create a new entry for medication orders with editable expiry date

- Display expiry date along with order details
- Create option for number of days to flag expiry
- Display alert for soon to expire or expired medication

Existing/Adaptable Functionality

There are a range of developments already underway on the eMAR solution that would benefit a local authority version such as:

- **Self-Administration and prompting as well as administered and not administered**
  Ability for carers to log whether a client took their own medication, refused it, etc.

- **PRN protocols**

- **Business Continuity Plan where no 3G / 4G / Wi-Fi - Offline MAR/Dom Care**
  Use existing offline MAR on windows tablets / sync before and after each visit using Wi-Fi

- **Double signatures for controlled drugs not required**
  Remove double signature requirements

- **Follow up for PRNs**
  Switch options for PRN follow ups

Estimated Cost for eMAR for Domiciliary Care:

Critical Functionality	£262,565
Recommended Functionality	£25,984
Existing/Adaptable Functionality	£0
Total Cost	**£288,549**

Post Discovery Partner Perspective

Kent County Council agrees with the discovery report findings and is keen to progress further funding permitting. To progress, Kent would need to develop and submit an internal business case.

Warrington has stated that the digital approach outlined is what they need, however again need to create an internal business case to proceed. Their main issue is around patient safety and the correct medication charts particularly around hospital discharge into intermediate care. They identify with all the issues raised during the discovery phase and see this solution as the way forward in dealing with their current situation.

Newcastle shared the information from the discovery workshop with team and it was well received and agreed. Similar to Sunderland, they have multiple providers with different rostering systems and see the integration as being critical to the success of a digital approach. In addition they are currently reshaping their home care services so they don't believe this is the right time to progress or seek additional funding.

Halton would very much like to pilot the project if further funding is approved. They feel that carers are not getting the support they deserve and require. They would be interested in getting a view from the CQC on the MED e-care solution, but from their perspective MED e-care's eMAR approach ticks their boxes.

Sunderland - like the other co-funding councils - believe integration with rostering systems is critical to the success of a digital approach. The authority has a number of dom care providers and see the integration piece as both a time and budgetary challenge, as each provider uses a different rostering system.

Following the workshop report and technical options, Sunderland has decided not to commit further to this project due to the complexity of the multi-system rostering integration and other local health and social care priorities. They are keen to see the progress of the project, but have to concentrate their budget and resource elsewhere.

Suggested Next Phase

The discovery process has proven that there is a need and a will to investigate a digital approach to multi-partner domiciliary care medicine support further. Despite the challenges being complex there is evidence that supports the business case from both efficiency and patient safety perspectives.

Technical solutions exist and can be adapted for local government and their partner needs, however the price tag is high. To ensure demand and support for such an approach it is suggested that this project moves to a ‘Commercial Discovery’ phase to validate the approach.

A Commercial Discovery will involve:

- Market validation and engagement to assess interest, distribute the report and engage with local government more widely
- Commercial business case development with engaged councils based on the Halton model
- Engagement with a number of bodies working in this arena (e.g.: CQC, PRSB, Skills for Care) would be useful to both share the discovery work to date and again help validate the case for / against development
- Investigation of other meds mgmt discovery projects
- MOU with MED e-care to progress development should there be appetite/agreement
- Clarity on standards to prevent any vendor lock-in wherever possible

This recommendation will be considered by the Social Care Programme Board in November, should it be agreed, the outlined commercial discovery will seek to report by the end of January 2020.