Digital Domiciliary Care Management Specifications Outline

JULY 2020

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1 List of stakeholders and contacts

The following is a list of stakeholders involved in this project:

Autumn Care
Azure Charitable Enterprise
Birdie
Boots UK
Brighton & Hove Council
Burrowbeck Community Care
Care Association Alliance
Care England
Care Quality Commission (CQC)
Care Software Providers Association (CASPA)
Carers UK
Central Bedfordshire Council
Company Chemists Association (CCA)
Digital Social Care
Elderflower Care
electronic MAR
The Good Care Group
Greater Manchester & Bolton Local
Pharmaceutical Committee (LPC)
Halton Borough Council
Health Education England (HEE)
Invatech Health
Kent County Council
Kent Integrated Care Alliance (KICA)
Laing & Buisson
Lincolnshire Care Association - LinCA
Local Government Association (LGA)
Luton Borough Council
Med-e-care

NHS Digital
NHS England
No Place Like Home
Office for National Statistics
Oncare
Opieka
Person Centred Software
Pharmaceutical Services Negotiating Committee (PSNC)
Professional Records Standards Board (PRSB)
Protelhealth
Reallycare CIC
Registered Nursing Home Association (RNHA)
Royal Pharmaceutical Society
Royal Devon and Exeter NHS Foundation Trust
Sheffield Council
Skills for Care
SmarterHealth
Social Care Institute of Excellence
Solihull Council
Tower Hamlets (London Borough of)
TEC Services Association CIC (TSA)
UK Homecare Association (UKHCA)
University Hospital Southampton NHS
Foundation Trust
Walnut Care
Wilson's Care
Your Care Team

2   Introduction

A digital medicines support solution for domiciliary care services could bring significant cost savings to local councils, care homes, and health[1] and social care.

The PAMAN Pilot Program in Liverpool, a digital remote medicines administration monitoring service, improved quality of life and showed savings of around £200,000 per 100 patients.

Analysis of a single borough council's data identified that a digital solution reducing up to 30% of the time spent dealing with medicines would deliver annual savings of £96,000 [appendix 14] Replicated across England this could save up to £42 million.[2]

Integration of digital technology into the delivery of domiciliary care will support changes to the way they operate and deliver value to clients, care organisations and councils. New digital-driven products are impacting on all industries, enabling reshaping, restructuring and value creation along with enhanced user experience. Many parts of the social care system are becoming digitised and significant efficiencies have already been proven by their use. However, although significant benefits of a digital system for medicines support have been identified, no commercially available software solution that currently exists was identified that can fully address the needs of the domiciliary care system. This document seeks to address this need and specify the requirements for a digital system that directly supports the needs of the domiciliary care sector.

2.1   Background

"A Collaborative Council-led Discovery Project into the Benefits of a Digital Approach to Multi-Partner Medicine Support in Domiciliary Care" (November 2019), which was NHS Digital match funded via the LGA Social Care Digital Innovation Programme (SCDIP), highlighted that digital solutions are already being used in care homes. Digital solutions have shown significant benefits [20] that could be applied to domiciliary care, including:

- Improved client safety and compliance
- Improved and simplified medication support
- Improved medicines reconciliation
- Reduced risk of medication administration errors e.g. high-risk medicines
- Highlight unnecessary/inappropriate poly-pharmacy
- Reduced risk of adverse events requiring healthcare intervention e.g. hospital admissions or GP call outs
- Simplified audit to support continuous learning and service improvement
- Reduced medication wastage with stock control
- Paperless systems
- 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
- Greater transparency and reassurance for client's relatives.

The care industry is facing big challenges: "more people are requesting social care support but fewer people are receiving it"[3]. "Councils face a £3.6 billion funding gap in adult social care by 2025 and have lost 60p out of every £1 in central government funding since 2010"[4]. Strain on the care system will also mean implications for the NHS e.g. additional GP / Hospital interactions/ bed blocking etc.

By freeing up time through efficiencies a digital solution will enable more people to be cared for at home.

3   General requirements[5]

3.1   High-level goals
This document outlines the requirements of a holistic digital medicines' solution for domiciliary care. The digital solution seeks to:
- Create a joined-up portal to provide clients with efficient, safe care by care workers and care organisations which includes medicines support that facilitates task creation, reporting, and quality checking
- Decrease the overall cost of delivering domiciliary care by using digital technology to introduce efficiencies in all parts of the domiciliary care system including medicines administration and management
- Introduce savings and efficiencies for all involved parties through improved communication, synchronisation of client information, ordering and distribution of resources, reduced medicines waste and problem solving
- Promote safe and effective medicines support, information sharing with the person's consent between currently disjointed parties, including NHS, hospitals, care organisations, pharmacies and GPs reducing the need for a person accessing care to tell their story more than once
- Be user friendly for care workers, and provide them with a way of working that is more efficient than use of paper records giving confidence for families that care and support can be provided quickly and responsively

The solution should:
- Accurately support the planning, recording and reporting for the person accessing care and support – care worker – care organisation work cycle. Remove the need for paper

reporting, promote secure, rapid, digital transfer of records between person, care worker, and care organisation and remove the need to physically transport records

- Facilitate safe, accurate and timely medicines support for the person accessing care (including handover between care workers and multiple agencies)
- Facilitate identification of potential efficiencies such as better use of staff, reduced need for face-to-face caring, etc.
- Adhere to legal and regulatory requirements
- Maintain high levels of security and client confidentiality
- Inform structured medication reviews
- Improve communication on admission and discharge from acute settings

3.2   Benefits

There are many parties involved with the delivery of domiciliary care (home care). The supply of domiciliary care workers is generally a lower-cost solution when compared to alternatives such as care homes or NHS facilities.

The following diagram and explanation show the key organisations and individuals involved in the domiciliary care "ecosystem". It highlights some of the benefits the system can provide and the main beneficiaries of a joined up digital medical support solution.

Key:
NHS green
Councils orange
Cared for Person blue
Care workers yellow
Care organisations red
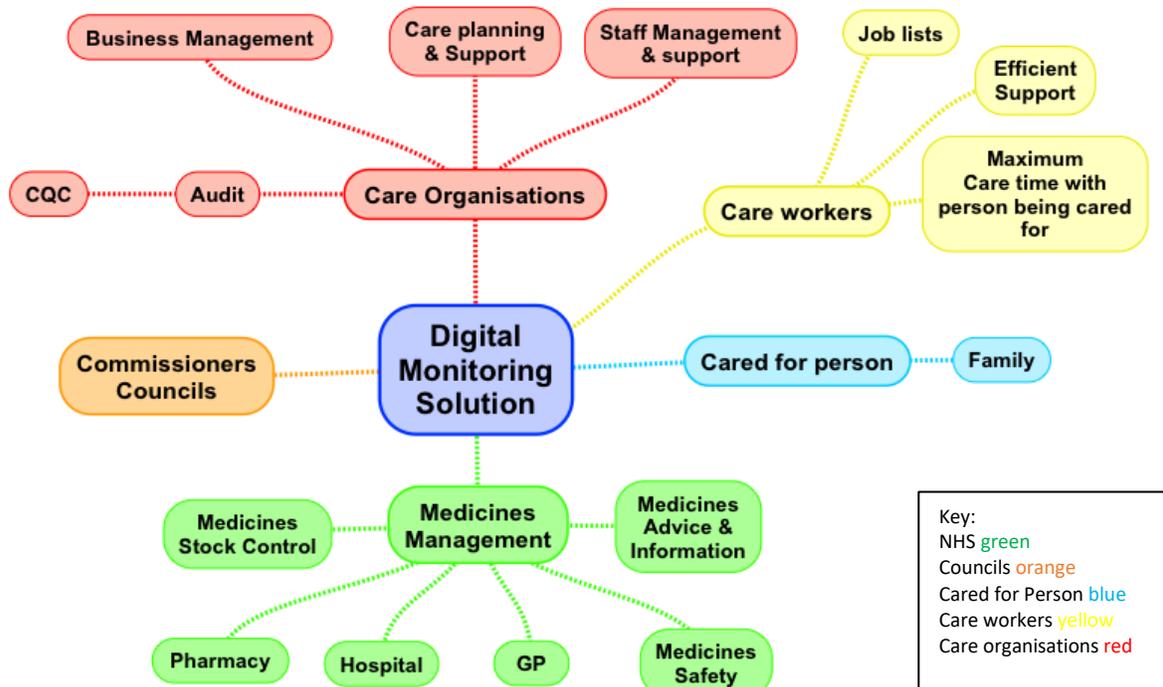
Benefits include:
- Improved patient safety and medicines compliance

- Reduction of medicines-related safety incidents, the health costs of these along with significant cost savings by fewer lost work hours for care workers and associated management costs involved with case escalations and hospitalisations
- Reduction of staff costs – through efficiency in scheduling, reporting, medicine support and physical transportation of records
- Reduction in the need for face-to-face contact for medicines-related support (e.g. COVID-19)
- Ease of accurately meeting regulations and NICE standards, inspection criteria, staff training needs, reporting and quality checks
- Reduced, streamlined administration, all electronically documented securely
- Opportunities for more effective, efficient and comprehensive medicines support input, e.g. from pharmacies or community NHS services:
    - Ability to integrate pharmacy services into the care pathway
    - Efficient access to the advice and support available for medications
    - Reduced escalation and emergency situations
- Councils being able to more easily evidence their needs for domiciliary care planning to support the projected increase in clients receiving care in their own homes without compromising safety and efficiency to help manage increased demand, whether directly commissioned or self-directed support.

3.3   Background and strategic fit

The domiciliary care market is underpinned by a mixture of local authority, NHS clinical commissioning group (CCG) and private funding with some providers operating across local authority and CCG boundaries. The increasing age of the population is increasing demands on the sector, yet funding support remains constrained. Innovative technology can enable efficiencies to support this industry and the people being cared for. Safety of administering medicines is a vital part of that delivery of care[6] [7] and improving medicine adherence.[8]

3.4   Aims

The creation of a digital system for domiciliary care should be guided by the following aims. The system should:

- Be a single (joined up) integrated system for all parties involved in a client's care including GPs and mental health trusts
- Facilitate ease of access to up-to-date care records
- Integrate in some way with NHS healthcare provider applications such as:
  - Community pharmacy patient medication records
  - Hospital discharge information e.g. Refer to Pharmacy,[9] PharmOutcomes etc.
  - The ability to integrate and accurately transfer/receive NHS data
  - The ability to securely share records and data
- Support effective management of medicines
  - Meet CQC and NICE standards
  - Align with medicines support processes
- Support the commissioning needs of local authorities
  - Statutory requirement to deliver care
  - Service provision review
  - Contract monitoring and management
  - Domiciliary care market development strategy
- Solution should be scalable, and able to meet future demands
- Support compliance, including capability for remote monitoring through generation of reports, alerts and triggers.

4   General technical requirements

This section describes the global requirements of a digital solution, and the main tasks that it must perform. As a general principle the digital solution must comply with "Open standards, secure identity and interoperability […] critical to the safe and successful use of technology, ensuring that systems talk to each other and that the right data gets to the right place at the right time" [10]

4.1   Compliance and standards

Information and terms used should conform to standardised sets of administration codes and ensure records use:

- Dictionary of medicines and devices (DM+D) descriptions and codes
- Systematised Nomenclature of Medicine (SNOMED) codes[11]
- Professional Record Standards Body (PRSB) standards

Records kept must comply with all relevant legal requirements, and consideration should be given to:

- NHS digital, data and technology standards[12][13]
- Records Management Code of Practice for Health and Social Care 2016
- Personal Health Records within the NHS Long Term Plan[14]
- Technology Code of Practice[15]
- PRSB national standards for the structure and content of health and social care records.
- Health and Social Care Act 2008 (Regulated Activities) Regulations 2014
- NICE guidance (NG67) Managing medicines for adults receiving social care in the community

Communication should be possible between digital systems of related parties.

Security: data use, storage and sharing should conform to data protection standards and must comply with:

- **NHS Digital guidance** on protecting data and handling information securely to meet the standards required to handle care information
- **Data and cyber security**: protecting information and data in health and care to keep patient information and computer systems safe. Follow National Cyber Security Centre cyber security best practices [16]
- **UK Caldicott Guardian Council:** A senior person must be responsible for protecting the confidentiality of people's health and care information and making sure it is used properly
- **National Data Guardian (NDG):** requirements on the use of confidential health and care information
- **Information Governance Statement of Compliance:** IG requirements for organisations accessing NHS digital services including HSCN
- **NHS and social care data:** National guidance for health and care organisations who want to use cloud services or data offshoring to store patient information[17]
- **Data Security and Protection Toolkit:** an online self-assessment tool that all organisations must use if they have access to NHS patient data and systems
- **Codes of practice for handling information in health and care:** What health and care organisations must do to look after information properly, covering confidentiality, information security management and NHS records management
- **Digital architectural principles** as stated in the Department of Health and Social Care policy paper *'The future of healthcare: our vision for digital, data and technology in health and care'*.

4.2   Roles

Fulfil the requirements of the following domiciliary care roles, as described in detail in the relevant sections:

- Person being cared for [*See Client requirements section]*
- Care worker *[See Care worker requirements section]*
- Care organisation *[See Care organisation requirements section]*
- Medicines support *[See Medicines support requirements section]*
- Council (commissioner) *[See Council (commissioner) requirements section]*

4.3   Security administration

Create accounts and access groups with the appropriate authorisations and access for the roles outlined above, as well as the administrative and IT staff.

4.4   User experience

It is anticipated that the person cared for and care workers' main access to the system will be via an app on a personal device, whilst the care organisation along with medicines support's main access will be via a web portal although this need not be binding, e.g., an out of hours on call manager using an app on a mobile device or indeed a client using a personal computer.

The system needs to be designed to:
- Be easy to install. Apps should either be available in the relevant app store or from secure web download
- Be supported by common device types and operating systems (e.g. Windows/ iOS/ Android)
- Support browsers defined in GOV.UK Service Manual[18]
- Provide the ability to work offline (if in an area without a signal, for example)
- Separate the layers of our patient record stack: hosting, data and digital services.

The user interface (UI) of any app or web portal should be:
- Easy to use, and easy to navigate
- Have a simple, intuitive user experience (UX) design, and navigation.

4.5   Documentation and training

Documentation and video instruction as well as appropriate training materials should be provided to teach people how to use and navigate their role-based digital environment.

5   Client requirements[19]

A client is defined as any person receiving care at home from a care organisation. A care worker visits a client at home to provide support with a range of activities and support including:
- Mobility: getting into and out of bed, getting to appointments and social arrangements
- Physical care: washing, dressing, using the toilet, shopping for clothing and toiletries

- Diet: preparing meals and drinks, food shopping, and other essentials
- Remembering to take medicines
- Medicines support: help preparing and taking medicines, checking supplies, ordering and collecting prescriptions.

5.1   Goals

For the client role, the digital solution should provide an application:
- With a simple, intuitive UI from which the client can view, document, and manage their care and consent following Making It Real principles[21]
- That is part of the joined-up portal, linking to care worker calendar schedules and enable communication with the care organisation and relevant health professionals
- Enabling the client to view and update the client's daily care task list including medicines support and relevant care information. The calendar should include appointments, medical alerts and reminders for medicine(s) and other treatment tasks.

5.2   Description

As a client, I'd like to have one place/app/portal where I can:
- View and request amendments my appointments, including care worker visits, GP and hospital appointments
- Make my schedule available for those who care for me
- View my medicine schedule in real-time, receive reminders, alerts and allow me to record medicines I have taken so this appears on my care record
- Report any inaccuracies that need amending
- Easily request repeat prescriptions and order replacements directly from the pharmacy, GP or other NHS system
- Gain timely information and advice when I'm not sure about symptoms or treatment or issues with my medicines
- Facilitate communications with care worker, care organisation, GP or pharmacy and provide method of escalation for health issues
- Share this information with my family and other carers so that they are kept up to date with my status and my care needs
- Report to the care organisation and ask for modifications to my care schedule or duties of my care worker
- Be compatible with and connect to any electronic wearables I may have for safety and include an emergency call system
- Provide the option for care organisations to support me remotely to reduce the need for face-to-face care worker visits in instances where face to face visits are not possible (e.g. during a pandemic, such as the COVID-19 outbreak)
- Use it on a device to suit me, e.g. mobile phone, smart TV, smart speaker, wearable device, personal computer, etc.

5.3 Assumptions and prerequisites

Essential

The client module has the ability to link to care organisation and care worker modules. Depending on the abilities of the client, this functionality/app should need to be accessed and managed either:

- Directly by the client
- By the client's family member (with appropriate consent)
- By care worker(s).

The medicine schedule and dosage information will be populated from an up-to-date pharmacy Patient Medication Records System (PMR). This information will need to be approved by an appropriate senior member of the care organisation prior to administration to client.

Desirable

The client module links to a prescription ordering system(s).

Ability to obtain GP SCR (NHS Summary Care Record) data including prescriptions.

(See appendix Main client workflow scenarios)

6 Care worker requirements

A care worker is an individual who is paid or volunteers to care for a client on a regular basis. A care worker may have more than one client at any given time. A client is a person the care worker has, is, or will be caring for. An active client is a client the care worker is currently caring for.

6.1 Goals

Essential

- Provide a single joined up portal from which the care worker can manage and document all their clients' care requirements, safely, conveniently and effectively
- Facilitate efficient communication with the client, care organisations, GP and pharmacy
- Clearly delineate tasks that the care worker must perform and acknowledge during their visit
- Ensure task reporting is performed electronically according to industry standard format and standards, e.g. PRSB.

Desirable

- Provide consistent support, updates to care and training messages for the care worker.

6.2 Description

Essential

As a care worker, I'd like to have one place/app/portal where I can:

- Manage my client schedules and see any changes in real-time
- Coordinate my appointments and my client's appointments, view vacation days, sick days and days off pertinent to both

- View a daily task summary for each of my clients, that includes an electronic checklist of all medicine related and social care tasks
- Allow me to work through and acknowledge each task as it is completed (or not) and easily record this information appropriately in the relevant electronic care records or on the electronic medical administration record (eMAR) in real time
- Provide alerts (that must be acknowledged and responded to) for any tasks that are not marked as completed during my visit
- Provide any safeguarding alerts
- Receive prompts to check and reorder medicines at appropriate intervals (for care workers with relevant qualifications only)
- Create a summary of all tasks performed (and reasons for tasks that were not done) during a client visit, including any additional information that should be handed over to the next care worker or relevant family member
- Submit reports, eMAR summaries, payroll and all other pertinent information in the required format to the care organisation electronically
- Easily contact the care organisation, relevant health professionals or FAQ database for advice e.g. if I'm unsure of a patient's medicine needs, symptoms, or for medical issues that arise who do I contact
- Enable me with a method of escalation for care issues, to:
    - Provide timely advice to the client
    - Reduce care organisation and social care administration
    - Improve accuracy and safety of client care when issues arise
- Ensure I am only given tasks and responsibilities that are appropriate for my qualifications
- Reduce my time spent on medication administration and provide an accurate audit trail
- Create consolidated client records so that information can be accessed and provided by different involved parties, including all healthcare workers, fellow care workers and the care organisation caring for the same client with an audit trail.

Desirable
- Plan the most efficient route to, from and between clients and appointments via GPS
- GPS prompted alerts for incomplete work
- Access training and accreditation courses.

6.3   Assumptions and prerequisites

Essential
- Ability to link to prescription ordering system(s)
- Cooperation with pharmacy PMR (Patient Medication Records System) for populating eMAR data
- Ability to send and receive client care reports to the care organisation portal.

Desirable
- Ability to obtain GP SCR data including prescriptions.

(See appendix: Main care worker workflow specifications)

7 Care organisation requirements

A care organisation is a company providing health and social care. The company works with councils, Clinical Commissioning Groups and GPs to deliver care and support for older people and those with learning disabilities or mental health problems.

7.1 Goals
- Create an end-to-end digital trail for the care worker work cycle, from creation of client task list, to receiving a care worker report that complies with auditing requirements
- Digitalise the scheduling of client and care worker appointments
- Digitalise the case query and escalation process and connect the client/care worker with the right professionals to answer their questions directly
- Support safe administration, reporting and support for medicines.

7.2 Description
Essential

The care organisation module should manage all general tasks as they currently would using existing paper-based systems. This means that there will be a need for protocols for senior managers to have the ability to manage medicine related matters e.g. during out of hours.

Support safe administration, reporting and support of medicines. This includes:
- The portal should be a central repository for eMAR records
- The system should be able to receive eMAR records from pharmacies in a digital format
- All MAR records should be recorded digitally, to ensure comprehensive monitoring and auditing of all medicine administration issues
- From the portal it should be easy to share client eMAR record(s) with the correct care worker(s) and enable those care workers to fill in all medicine administration events on the eMAR record for monitoring, reporting and auditing
- Highlight report status, or view a live dashboard showing eMAR status, to easily identify cases with missing information or where medicines have not been taken, to facilitate follow up efficiently and reduce the need for any transcription.

Create personalised[22] client care plans, and facilitate task management, and care worker reporting:
- Use one digital template to create and approve the client care plan that will also serve as a task list(s) for the care worker(s)
- Assign a client care plan to the appropriate/relevant care worker(s)
- As the care worker checks off and reports on the progress of their tasks, it would populate the care plan record, reducing or eliminating the need for the care worker to create and deliver a separate report, reducing bureaucracy for both care organisation and care worker. The report should be in the correct format to comply with regulatory needs, auditing and reporting requirements

- Receive reports, or view on a live dashboard care plan event status for each client, so managers can easily identify cases where care plans are not complete or running to schedule and follow up efficiently.

Manage client and care worker scheduling:
- View and manage care worker and client schedules
- Enable care workers to manage schedules with their clients.

Facilitate client and care worker communication and case escalation:
- Provide a channel through which care workers can contact manager(s) to solve issues, especially those that are time critical
- To connect care workers with the right health professionals in cases where the manager is unable to provide the relevant information directly
- To be responsive, simple and efficient, such as through a chat facility or help line. This could be directly with a pharmacy or health professional. This would save much management time on the phone finding and communicating information and coordinating questions between care workers and the relevant health professionals.

Facilitate efficient, effective auditing and reporting:
- To reduce administrative hours spent on quality checking and reporting by ensuring all information is reported digitally in a format that is compliant with the required regulations
- To be able to easily identify information gaps and gaps in reporting, to help ensure quality checking is accurate and complete.
- Real time triggers and alerts e.g. if a medication is missed, late, or mis-dosed

Manage staff and staff accreditation:
The term "staff" includes all management, administrative staff and care workers.
- View staff details, background and qualifications to:
  - Easily match the right care worker to the needs of a specific client(s)
  - Ensure care workers are qualified for the client tasks
  - Ensure all care workers have up to date accreditations.

Desirable
- There is a live management dashboard using a traffic light alert system (or similar)
- Pharmacy will be able to manage eMAR data within the care records
- Enable performance management of staff linked to their care work, view how many tasks they complete fully and on time etc, to build a picture of their reliability and effectiveness in carrying out their tasks.

8   Medicines support requirements

Clients receiving domiciliary care packages are increasingly likely to be taking medicines and therefore in need of support. The level of support should be tailored according to individual needs and can vary from simple reminders (prompts) to having their medicine administered to them. For the purposes of this document medicines support is defined as any healthcare professional or organisation involved with the prescribing, monitoring, adjusting doses or supplying of medicines (e.g. hospitals, GPs, pharmacies, etc.)

8.1   Goals
- Provide a single joined up portal from which healthcare staff, care organisation and clients can access and manage the medicines records of clients' receiving care. (For clarity the portal would provide a live health and social care record for use by all involved in the care of a client and when future technology permits access the NHS records)
- Create and manage eMAR records and alerts that are incorporated digitally into clients' care records
- Facilitate safe administration, reporting and support of medicines, including repeat prescriptions and ordering of medicine supplies
- Facilitate up-to-date real time recording of medicines and healthcare needs, identify and target issues as they arise preventing or reducing the incidence of medicine related safety incidents and patient harm thereby reducing the incidence of unplanned care in hospitals (e.g. A&E)
- Reduce costs and the time spent/lost work hours by care workers coping with medicines related issues e.g. medicines not taken, or dosages administered incorrectly.

8.2   Description
The portal should be able to:
- Receive eMAR records digitally from pharmacies and incorporate them into clients' care records
- Record all MAR records digitally, to ensure comprehensive monitoring, reporting, auditing and all medicine support issues
- Ensure only authorised healthcare workers, qualified management and care workers should be able to write/view eMAR or administer medicines for a client
- There should be a full audit trail recording items created, viewed, amended, as well as the ability to log authorised changes (e.g. from hospital discharge letters)
- Be able to share the relevant eMAR record(s) for each client with the correct care worker(s) and enable those care workers to fill in all medicine administration events on the record for monitoring, reporting and auditing
- View medicine administration status per client on a live dashboard, or through reports, to enable care organisation staff to identify cases where medicines have not been taken and facilitate timely and efficient follow up.

Facilitate and support medicines ordering systems for relevant clients through:
- Built in stock management system ability to monitor medicines linked to eMAR that can either generate a report or create alerts for clients with low medicine stock
- Manage product recalls
- Incorporate a manual updating ability e.g. for tablets dropped on the floor, smashed bottles with e.g. message sent to family member, pharmacy or management dashboard

9 Council (commissioner) requirements

9.1 Goals
- Produce up to date, accessible information about services
- Receive data in standard formats from care organisations that gives the ability to rapidly aggregate multiple care organisations data for large/ whole council areas giving accurate bigger picture data that can:
    - Demonstrate budget versus delivery versus needs across a council footprint
    - Compare or performance manage care organisations
    - Review care and support plans and full access to care records if required.

9.2 Description
- Provide a single joined up portal which generates reports that support commissioning goals and compliance
- Reducing staff time on paperwork and administration means more caring time with clients and places the client is at the centre of decision making
- Interrogates data to analyse medicine related safety incidents, investigation of these, outcomes to decrease variation of practice by care providers and providing clients with the same approach no matter the care provider, creating consistency.

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● APPENDICES

10 Main Client workflow scenarios
Clients should be able to log in to their environment via a downloadable app, or web portal.

10.1 Security, access management, and personal information
Essential
Client login and personal details flow:
- Users should have a unique login to their client environment
- Users should be able to grant and remove access (view or edit access) to specific family members and care workers
- Family members and care workers should not be able to grant access to other individuals without consent from the client, or authorisation from the care organisation.

Add client information:
- Client should be able to add personal information, as well as nutrition and medical information, allergies, and preferences to their personal area.
- Relevant personal information should also be populated automatically by the care organisation
- Must be able to report any inaccuracies to be amended.

10.2 Appointment scheduling and alerts
Essential
The client should be able to:
- View, request amendments or request rescheduling of their own appointments with care workers. They should be able to view shared calendars with their care workers to enable ease of scheduling even without care organisation staff involvement
- The client should receive alerts of changes to existing appointments and be able to acknowledge, accept or reject a proposed schedule change.

Desirable
- Real-time updates sent to client to update them of care worker arrival time, without the care worker needing to update care organisation or client directly (via care worker GPS).

10.3 Medicine scheduling and reporting
Essential
The client should be able to:
- View their daily medicine schedule as a task list that they can check off as they take their medicines
- Receive real-time reminders of upcoming dosage
- Receive warning alerts for dosage not taken at the right time
- Optionally also send alerts and warnings to the designated care worker or family members

- Add a note or explanation of any changes to medicine schedule, or reasons medicines were not taken.

For medicine supplies, the client should be able to:
- Enter current medicine supply levels in the app or portal
- Request a prescription directly from the app, or by launching email from the app.

The system should be able to calculate supply levels from additional medicines taken and send an alert when it calculates that supplies are low.

Desirable
- Allow ordering and reordering of medications electronically, login directly to an ordering portal from the app
- Barcode scanning to ensure the correct medicines are taken and record this on the care records.

10.4 Communication and reporting to the care organisation
Essential
The client should be able to:
- Submit a request to care organisation (e.g. require extra care worker hours, or request a carer with a specific skill set)
- Submit report, compliment or complaint to the care organisation.

10.5 Advice and support
Essential
- Emergency panic button.

Desirable
- Live chat with care organisation
- Live chat with healthcare professional
- Link to advice line, such as NHS 111.

11 Main care worker workflow specifications
Care worker should be able to log into their environment via a downloadable app, or web portal.

11.1 Security, access management, and personal information
Care worker log in and personal details flow:
- Should have a unique login to their environment
- Should be able to add personal information, including qualifications, skills, languages and work preferences
- Should have access to shared calendars and view tasks for their active clients only
- Should be able to request access to client calendars and task lists from the care organisation but should not be able to manage access themselves.

Care worker access level:

- More than one level of access should be defined for the care worker role, to support and balance the appropriate level of client privacy and care. Access should be granted to active clients only, and access levels should be defined for:
  - Viewing active client calendar
  - Viewing active client medicines information
  - Viewing daily task summary for active clients.
- Process should be defined at the care organisation level for removing care worker access when a client is no longer an active client.

11.2 Appointment scheduling and alerts

Essential

The care worker should be able to:

- View and access calendars of all active clients in a single care worker calendar window
- View, amend and reschedule their own appointments with clients. They should be able to view shared calendars with their clients to enable ease of scheduling even without care organisation staff involvement
- If the care worker has multiple clients, it should be easy to visually differentiate between client entries (e.g. entries colour coded per client)
- Add care worker vacation days, days off and sick days
- View client schedule, including appointments, vacation days and any other client days off
- Edit the care worker schedule including a method to request (and enforce the need for) approval (from care organisation), if required
- Access client task list for the current visit directly from the relevant diary entry
- Receive real-time alerts to inform care worker of changes to existing appointments (e.g. client unavailable on the day of a visit), including ability to acknowledge and accept or reject a proposed schedule change
- Receive safeguarding alerts.

Desirable

GPS guided travel planner providing:

- A map of the most efficient route and transportation to the client and client appointments
- Real-time updates to the client of care worker arrival time, based on the care worker phone GPS location data without the care worker needing to update care organisation or client directly.

11.3 Access client information, tasks, and care records

Essential

The care worker should:

- Receive/access the electronic care record including task list for the current visit, for each active client. This should be updated and available on a daily visit.

From the electronic care record, the care worker should be able to:

- Confirm client identity and consent at each visit
- Use the record as a check list with which to document each task performed, as they complete it
- Add other relevant information and indicate an importance
- Include a handover section that can be graded to highlight information that is:
    - Urgent: must be taken care of before/during next care worker visit. An "urgent" alert should be visible in the calendar for the relevant care worker that must be acknowledged during their visit
    - Important: should be known by the care worker when making their next visit. An "important" alert should be visible in the calendar for the relevant care worker that should be acknowledged during their visit
    - Informative: includes all useful information that the care worker should be aware of that makes a difference to how the client feels they are being looked after. This could be simple care issues, e.g. no longer wants sugar in tea or prefers to take tablets with a cold drink or likes to take all their tablets together, etc. An alert should be visible to show useful information is available for the care worker to view
- Use the check list, insert other relevant information and use it to create the report available to the care organisation at the end of their visit
- Ensure eMAR access capabilities and requirements fit the care worker qualifications. Only qualified care workers should be able to view and be required to perform medicines-related tasks for a client
- Submit/make available a full electronic care record based on tasks completed, at the end of each client visit.

Desirable
- Bar code scanning system to verify correct medicines supplied/administered and automatically input data into the system – avoids transcription errors.

11.4 Medicines administration and support
Essential
- Ensure care worker has been added to the appropriate access level, according to their qualifications so they are able to:
    - Confirm client identity and consent at each visit
    - View client medicines requirements
    - Record medicines administration tasks and the care work task list
    - Permit checking of client supplies and ordering and reordering of medicines
- Real time reminder of upcoming dosage for current client, including requirement to acknowledge a reminder
- Warning alert for client dosage not taken by the required time
- View the task list for each specific client visit, including:
    - Most important information first, such as a requirement to administer a medicine at the beginning of an appointment because it must be taken on an empty stomach

- View medicine and treatment schedule checklist for the current client and enable the care worker to check off (acknowledge) each task when it is done. Acknowledgement should include:
  - Whether the client took the medicine at the prescribed dosage yes/no (right to refuse)
  - If 'no' selected, for each medicine that the client should take, the care worker should be able to add the relevant eMAR code and/or include a note/explanation for any changes in a free text field.

11.4.1 Medicines supply support

Essential

Ensure only qualified care workers can access medical supply information and order supplies. Reminders and alerts:
- Generate reminder at regular intervals for the care worker to check medicine supplies and indicate when supplies are low
- Alert care worker and organisation when supplies are low (if system monitors quantities received, medicines taken and calculates when supplies are low)
- Enable care worker to manually update details of medicine supplies received by the client, as well as supplies that have been lost or destroyed (by human error, for example). This action should require manager's approval

Desirable
- Optionally request prescription, if client not able to do so
- Optionally request ordering and reordering of medicines electronically and arrange pick up or delivery.

11.5 Reporting to the care organisation

Desirable
- Reporting work time. Care worker should be required to clock in and clock out at least once at the beginning and end of each day. This could be done automatically by requiring them to log in and out of the system/app at least once each day.

Submitting requests:

The care worker should be able to:
- Submit a request to the care organisation (e.g., I want to work extra hours, take vacation, or other personal requirements that may impact the client)
- Submit an incident report, comment or complaint to the care organisation.

11.6 Communication, advice and support

Essential
- Enable care workers to communicate, with managers or pharmacy, to obtain timely advice about health or medicines-related issues for their client from the care organisation, or the relevant health professional via:
  - Live chat or messaging service
  - Direct link to an advice line, such as NHS 111

Desirable

- Access to information via a health or relevant FAQ database.

11.7 Training

Essential

- Provide reminders to renew accreditations and mandatory training, when required.

Desirable

- Provide information to the care worker of how to gain accreditation including: Recommended courses to achieve accreditation.
- Modules required to obtain relevant accreditation, and relevant course schedules.

12 Main Care Organisation workflow scenarios

12.1 Security, access management, and personal information

Essential

Care organisation portal log in and personal details flow:

- Create profiles and groups with role-based access subject to local and individual preferences, to provide individuals with the level of access to information and resources appropriate to their role, within the portal. For example:
  - Administrators group: access to all IT related information and tasks
  - Senior manager group: full read write access to all areas (super users)
  - Junior manager group: full read write access to relevant areas appropriate to role
  - Care-worker group: read write access to their approved client task list and schedule, as well as their own area
  - Care-worker medicines group: read write access to their approved client task list, medicines tasks and client schedule, as well as their own area
  - Clients and/or Family: read write access to their own care record space
- Process should be defined at the care organisation level for removing care worker access when a client is no longer an active client.

Desirable

- Provide ability for clients to grant access to family members to the client only areas.

12.2 Medicines Support

12.2.1 Security and access management

Essential

- Define staff medicines support access level: More than one class of access may be required to support and balance the appropriate level of client privacy and care; all must have a full audit trail to comply with legal/CQC obligations such as:
  - Senior manager: View/define/amend client eMAR and medicine requirements

- Healthcare worker: Update/amend client eMAR and medicine requirements
- Care worker: Allow eMAR recording and/or request new prescription
- Allow ordering and reordering of medicines.

12.2.2 Task and report generation

Essential
- Permit the import of pharmacy generated eMAR records into client records so that dosage instructions received from the pharmacy automatically populate the client's eMAR record. This improves accuracy, avoids the need for dosage instructions from pharmacy medicines labels to be transcribed into MAR, and reduces the chances of human error. Approval will be required by appropriate senior care organisation staff member.
- Generate a medicine administration task list for use by care worker for the specific visit, including:
    - Confirming the 6 R's of medicines administration
    - A prioritised the order of medicine administration information, such as the requirement to take medication on an empty stomach 30-60 minutes before food therefore administer as first task before carrying out any other care etc.
    - Ability to set real time reminders for time dependent dosage for a client, e.g. Parkinsons' or anti-diabetic medicines, including requirement to acknowledge a reminder and an alert if not acknowledged in a defined time frame.
- Generate a view at a glance summary of daily medicines and appointment schedule for the active clients.
    - Red: Medicine(s) not taken at all
    - Amber: Some/all medicines not taken but query raised (i.e. task open and incomplete)
    - Green: All medicines are taken (reported by care worker or client, if self-medicating)
    - Colour to be defined: Medicine stocks low for this client.

Desirable
- Reports should include medicine supply status, indicating when last ordered, and when new order is required. This should be visible by the care worker and translate into a care worker task if an action is required.

12.2.3 Prescriptions and medicine stock management

Essential

Ability for staff to:
- Generate prescription requests to be sent to the GP/pharmacy/NHS portal, if client is not able to do so
- Manually update details of medicines received into the system, or lost or destroyed by human error, for example
- Generate a medicines audit log, including all medicine-related transactions.

Desirable
- The system should monitor medicine stocks, by tracking quantities received and medicines taken when inputted onto eMAR and use this information to calculate when supplies are low.
- Generate an alert when a client's medicine supplies are low
- Generate a reminder at regular intervals for the care worker to check medicine supplies and indicate when supplies are low
- Link to GP, NHS or other prescription ordering portal and facilitate convenient ordering and reordering of medicines electronically and specify delivery or collection details. Collection or delivery confirmation tasks should automatically be added to a care worker task list, if appropriate.
- Facilitate electronic communication with nominated pharmacy to obtain ordering updates, change orders, and receive relevant advice:
    - Medicines orders, means that management / care staff / clients will know when medicines have been ordered, when they will be available or if there are any supply issues
    - Medicines advice
    - Ability to update/amend medicines on eMAR, e.g. mid-month additions or changes
- Audit log of medicine support. This should include all medicine-related tasks, ordering, and changes to orders.

12.3 Appointment scheduling and alerts
Manage care worker and client schedules
Essential
- Enable scheduling between staff and clients directly, or by the care organisation
- Ability to view, create, edit and manage staff appointments and visits
- Ability to give and revoke care worker access to relevant client schedules so they can manage their own appointments/request approval for scheduling changes based on client availability
- Viewing and edit staff and client calendar schedules, including appointments, vacation and any other client days off
- Enable/disable requirement for care worker to request approval (and for care organisation staff to approve/deny requests) for all schedule changes.

Desirable
- GPS guidance providing:
    - Travel planner: enable map of most efficient route / transportation to client and appointments
    - Update to dashboard indicating care worker arrival/departure/lateness, without the care worker needing to update care organisation or client directly
- To visually differentiate between entries (e.g. entries colour coded staff/clients etc)
- Access to client task lists and care records directly from the relevant diary entry

- Changes to schedule should generate real-time alerts to inform care worker and client and enable them to acknowledge changes to existing appointments (e.g. client unavailable on the day of a visit).

12.4 Client care planning

Essential
- Support and facilitate the creation/editing of client care plans and task lists including medicine related tasks such as:
    - A drop-down list of care plan action items/tasks and allow tick box selection relevant for the client
    - Additional free text field for manual input
    - The format should comply with regulatory requirements and complies with Health and Social Care Act 2008 (Regulated Activities) Regulations 2014: Regulation 17
    - Care plan tasks should automatically populate the care worker task list.
- Ability to assign care plan daily task lists to relevant care workers. Only qualified care workers should be able to take on a task list. For example, a task list with medicine related tasks should only be assignable to care workers with medicine support qualifications.
- Task list should include a "handover" section that can include handover tasks and information. It should be possible to define handover information importance levels, such as:
    - Urgent (red): Urgent action item that must be performed before/by the next care worker
    - Important (amber): Important information for next care worker
    - Informative(yellow): Useful information the next care worker

    Ideally these colour coded indicators should be visible in the care worker calendar, and link to the relevant task entry from the calendar.

Desirable
- Care plan status should change to reflect the various steps in the care plan cycle, including:

    Care Plan created > Task List Created > Task list in progress > Task list Done. Ideally an overall care plan status should be visible on the live dashboard and allow managers to monitor performance levels at a glance.

12.5 Care organisation's live management dashboard

Desirable

The live management dashboard is a single location that provides a visual representation of the real-time status of active tasks and care delivery.

Tasks should be colour-coded, and indicate percentage complete, or a breakdown of number of reports by status. For example:
- Green: care workers on time and all scheduled tasks completed
- Amber: tasks in progress, care worker delayed or raised a concern

- Red: care worker has not delivered an item or items of care or has raised an urgent alert**.**

It should be possible for a manager to drill down to view more details and individual records**.**

Options should include:
- A "Client Care icon" indicating number of staff currently visiting clients. Drilling down to a list of care staff currently visiting clients, each member of staff colour coded to indicate their overall visit status.
- Time management icon, indicating overall status:
  - Drill down to view how many care workers are on time today, e.g. 15 listed on time, 5 delayed
  - Drill down further to the see a list of names of delayed care workers
  - Drill down further to open an individual care worker's tasks and view reason for delay (if defined).
- View care worker status according to current client visit or task list status (green: all tasks complete, amber: issues or concerns raised by care worker, red: some or all of care package not delivered)
- Drill down or click on the individual client gives appropriate access to care and medicines records which highlight amber: the issues, concerns raised or red: care package not delivered
- There should be an ability to communicate with the staff member to manage the care issues. Care issues raised, if needed, should be able to be easily allocated/delegated to an appropriate member of management or staff work schedule list to manage
  - Whilst open this should be red or amber accordingly
  - Red items should be prioritised in the relevant task list.

13 Medicine support workflow scenarios

Essential

Log in and personal details flow:
- Create profiles with different permissions, to provide individuals with the correct role with access to relevant areas, information and resources within the portal. All medicine related additions or changes must be authorised by another trained member of staff. Assign role level e.g:
  - Senior management – full read write access all areas (super users) but any additions or amendments must be verified by another trained staff member
  - Junior management - read write access to relevant areas appropriate to role but any additions or amendments must be verified by senior staff
  - Pharmacists or Pharmacy Technicians – full read write access but any additions or amendments must be verified by senior staff
  - Back office function that will manage things such as merging of double registered clients.

Support of medicines:

- Reports should include medicine supply status, indicating when last ordered, and when new order is required. This should also be visible by the care worker and translate into a care worker task if an action is required.
- Generate a view at a glance summary of daily medicines and appointment schedule for the active clients.
  - Red: Medicine(s) not taken at all
  - Amber: Some/all medicines not taken but query raised (i.e. task open and incomplete)
  - Green: All medicines are taken (reported by care worker or client, if self-medicating)
  - Colour to be defined: Medicine stocks low for this client.
- Permit the import of pharmacy generated eMAR records into client eMAR records so that dosage instructions received from the pharmacy automatically populate the client's eMAR record. This improves accuracy, avoids the need for dosage instructions from pharmacy medicines labels to be transcribed into MAR, and reduces the chances of human error.
- Generate a medicine administration task list for use by care worker for the specific visit, including:
  - Confirming the 6 R's of medicines administration
  - Ability to prioritise the order of medicine administration information, such as the requirement to take medication on an empty stomach 30-60 minutes before food therefore administer as first task before carrying out any other care, etc.
  - Ability to set real-time reminders for time-dependent dosage for a client e.g. Parkinsons' or anti-diabetic medicines, including requirement to acknowledge a reminder and an alert if not acknowledged in a defined time frame.

Reminders and alerts:
- Generate prescription request to be sent to the GP/Pharmacy, if client not able to do so
- Ability for staff to manually update details of medicines received into the system, or lost or destroyed by human error, for example. This task should be included in a medicines audit log.

Desirable
- Bar code scanning system to verify correct medicines supplied and automatically input data into the system – avoids transcription errors
- Facilitate electronic communication with pharmacy for relevant tasks such as:
  - Medicines orders – this means that care staff / clients will know when medicines have been ordered, when they will be available or if there are any supply issues
  - Medicines advice – prompt access to a pharmacist's advice may reduce medicines administration delays, because advice is needed or prevent harm to a client through inappropriate dosage
  - Ability to update/amend medicines on eMAR, e.g., mid-month additions or changes.

14 Halton Borough Council business case

HALTON BOROUGH COUNCIL
THE COST OF MEDICINE SUPPORT IN DOMICILIARY CARE
POTENTIAL SAVINGS **£32K to £96K** BY INTRODUCING A DIGITAL SOLUTION

		DATA
Total Population figure		**125,000**

Domiciliary Care Medicine Support Headline Costs		
Clients with medication care requirements		255
Percentage of the population		0.20
Total hours of care delivered each week		1723
Per client hours of care a week		6.76
15% of hours per week spent on medicine support		258.45
Carer hourly wage £	£	14.50
Cost of medicine support in Domiciliary Care per week £	£	3,747.53
Cost of medicine management in Domiciliary Care per year £	**£**	**194,871.30**

Supported Housing Medicine Support Headline Costs		
People with medication care requirements		38
Percentage of the population		0.03
1.5 hours per week required per person		57
Carer hourly wage £	£	14.50
Cost of medicine support in supported housing per week £	£	826.50
Cost of medicine support in supported housing per year £	**£**	**42,978.00**

Reablement Medicine Support Headline Costs		
Patients with medication care requirements		51
Total hours of care delivered each week		600
15% of hours per week spent on medicine support		90
Carer hourly wage £	£	17.50
Cost of medicine support in reablement per week £	**£**	**1,575.00**
Cost of medicine support in reablement per year £	**£**	**81,900.00**

Total per week cost of medicine support £	**£**	**6,149.03**
Total per annual cost of medicine support £	**£**	**319,749.30**
If digital system saved 10% of carer time £	**£**	**31,974.93**
If digital system saved 20% of carer time £	**£**	**63,949.86**
If digital system saved 30% of carer time £	**£**	**95,924.79**

Other savings not monetised but recognised:
- Reduction in medicine wastage and over ordering
- Reduction in GP appointments and re-admittance to primary/secondary care settings due to medicine related issues
- Reduction in time spent by social care assessors in dealing with medicines support issues for clients
- Less requests for medications to be supplied in MDS by agencies

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