NHMC

National Homecare Medicines Committee

System-wide Delivery of Medicines Homecare

Output Based Specification

Version 10.0

Revised 14 September 2021

Contents

Executive Summary

The original system-wide delivery of medicines homecare output based specification (OBS) was written in 2013 and was support by a Technical System Specification. The NHMC Digital Subgroup was established to support the delivery of digital homecare. The advance in NHS digitisation has meant that the original output based specification required updates to align with the new NHS standards in digital, data and technology.

The consultation of the revised OBS involved members of the National Homecare Medicines Committee (NHMC) with representation from England, Wales and Scotland, Commercial Medicines Unit (CMU), ABPI, National Clinical Homecare Association (NCHA), the Pharmaceutical Market Support Group (PMSG) Leads, NHS Digital and NHSX. The updated OBS was approved by NHMC and NHCA in October 2019.

It is clear that 'digital' has a significant role to play in sustainability and transformation, including delivering homecare medicines services at scale, enabling new service models and transforming care in line with NHS strategic and clinical priorities.

More recently, the Carter review (published in Feb 2016) called for 90% of ordering and invoicing activity undertaken by NHS Trust pharmacy departments to be sent and processed electronically. Other recommendations from the Carter review include acceleration of the transition of prescribing and administration from traditional paper charts to Electronic Prescribing and Medicines Administration (EPMA) systems. Trusts should ensure there is accurate coding of medicines, cost data, particularly of high cost drugs.

Homecare Key Benefits

This document (OBS) shows that Investment in an interoperable IT Solution is needed to:

- Improve Treatment Outcomes
- Increase Patient Independence & Experience
- Make Time and Economic Savings for all (Patients, NHS and Homecare Providers) through increased efficiency and productivity
- Manage Future Growth
- Improve Governance and Accountability
- Ensure sustainability and transformation in line with the national digital standards.

Homecare Key Requirements

- Patient centric - Patient choice, Patient must feel in control
- Interoperable IT solution - linking Clinical (prescribing systems and clinical systems), Pharmacy (ordering, invoicing, patient medication records, repeat prescription records), Homecare Provider systems, and Financial systems
- Any solution must deliver better care and cost efficiency as well as workforce savings for the NHS & Homecare Providers
- Strengthened governance arrangement is fundamental in the development and deploy of any solution to ensure quality care, patient safety and financial probity.

Digital homecare is aimed to:

- Support the patient and the delivery of homecare services designed around the patient, safely, quickly, conveniently and seamlessly
- Support staff through secure and effective electronic communications, cut the time to wait for essential information, better learning and knowledge management and make specialised expertise more accessible
- Improve management and delivery of homecare services by providing good quality real-time data to support clinical audit, governance and management information

What is an OBS?

An Output Based Specification is commonly used within NHS system procurements to provide a clear description of what is needed. Two definitions are included below:

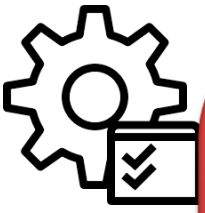
- "… OBS describes the output requirements for planned investments in new systems and/or services plus any constraints that apply to the proposed solution(s), such as the need to meet national or local standards and the need to interface with existing systems." (NHS Purchasing and Supply Agency [PASA])
- "… an output- based specification that focuses on what you want, not how to provide it" (Office of Government Commerce [OGC])

So, an OBS is a business requirements document that "wraps" the required functionality of a system (or systems) but does not define how the functionality is to be achieved.

Overview of the current homecare processes

The key features of the 'as is' processes in many of the acute hospitals are as follows:

- There is currently no system which allows the electronic transmission of prescriptions between the acute trust prescribing system and the homecare provider
- There is limited homecare functionality built in within ePMA systems.
- For some trusts there is zero or minimal electronic prescribing functionality and extensive use of paper prescribing for homecare. There are several variations in the way Trusts produce and process paper prescriptions which can include a mixture of individual homecare provider templates (therapy specific), trust prescription templates or both or printed paper prescriptions from their ePMA systems.
- These paper copy prescriptions are delivered by hand to pharmacy. Regardless of format within the Trust (paper/digital), the homecare provider will not release the medications without an ink signature on the prescription.
- Prescriptions durations can vary significantly depending on the service/therapy and the items currently prescribed via homecare including Prescription Only Medicines (POMs), Controlled Medicines (CDs) and there may be some requirement for General Sale List (GSL) or Pharmacy (P) medicines as supportive care
- Some homecare prescriptions can also provide the functionality for the ordering of ancillary items and nursing services
- Additional information such as allergies and pharmacy clinical check are annotated onto the paper prescription by hand especially where electronic prescribing is not available. Clinical validation of the prescription normally occurs in pharmacy by a suitably trained pharmacist.
  As reported in the NHS benchmarking data 2019, not all homecare prescriptions are clinically validated and therefore not compliant with the RPS standards.



The administrative process for homecare will differ depending on the systems available in each trust but the process for sending a prescription will usually involve:

- Raising a purchase order / requisition (through homecare modules to allow patient specific ordering) for each prescription. This order will cover the full duration of treatment as specified on the prescription
- The ancillary items/nursing services often go on the purchase order rather than the prescription. A nurse visit or other clinical intervention is created as "medication" in the stock control system to get around the ordering problems
- The purchase order/requisition is authorised by the purchasing manager and the purchase order/requisition number is transcribed onto the homecare prescription
- Trusts can choose to scan the documents and email to the homecare provider however legislation requires an inksignature therefore the prescription still needs to be physically sent to the homecare provider
- Depending on processes used by the trust, they may record the details of patient/prescription/order in a database
- Prescriptions are placed in freepost envelope and posted to the homecare provider – the prescriptions are usually delivered via Royal Mail post, therefore there are risks that prescriptions may go missing
- Prescriptions are received by homecare provider and processed.
- Prescriptions are manually added to the homecare providers' systems.

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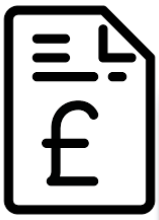
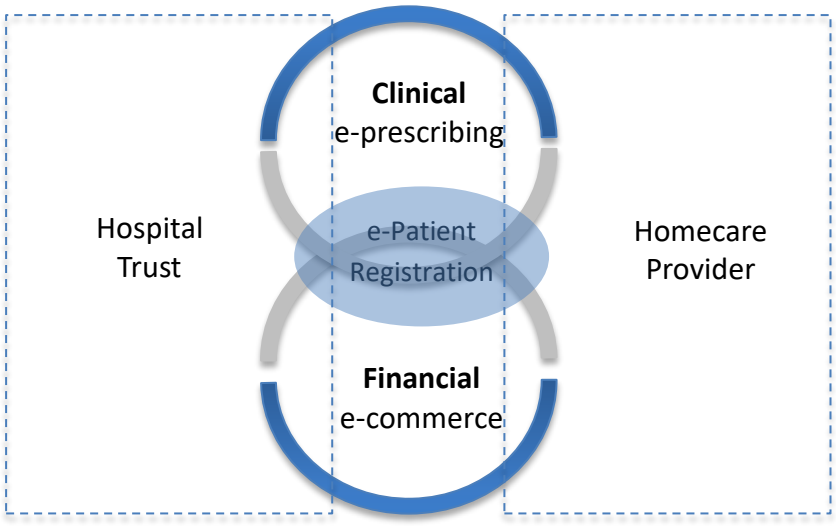


The processing of homecare invoices will differ depending on the systems available in each trust but the process will usually involve:

- Trust receives homecare invoice and delivery note through the post
- Homecare team validates the details of the invoice and delivery notes are correct. Any discrepancies are emailed to the homecare provider for query
- Homecare team processes the invoice for payment by receipting the purchase order/requisition, charge the stock to the consultant/directorate via the patient dispensing profile and processes the invoice for payment using the hospital pharmacy system stock control system. Depending on system this may be one step or three steps
- Many purchase orders (PO) and invoices do not match, either because the PO has the wrong values or the invoice has added the additional ancillary items that were required.
- Paperwork is filed in line with best practice and legislative requirements
- At the beginning of each month all purchase data including homecare transactions must be uploaded to CMU in an excel spreadsheet

[1] *This list is a generalised view of the current homecare processes from acute hospitals and may not accurately reflect some processes currently being used within the NHS*

Optimal future way of working



Strategic Papers

This section highlights new supporting papers, strategies and guidelines that have been made available after the first OBS was published:

The NHS Long Term Plan (Jan 2019) sets out a wide-ranging and funded programme to upgrade technology and digitally enabled care across the NHS. It is clear that digital transformation remains a key priority.

- Transforming outpatient care - The plan describes joined-up services with emphasis on prevention and personalised care using digital innovation, promoting care closer to home.
- Digital First – The NHS Long Term Plan commits that every patient will have the right to be offered digital-first primary care by 2023/24. This means that patients will easily be able to access advice, support and treatment that they need using digital and online tools.

The Queen's Speech 2019 – the proposed Medicines and Medical Devices Bill would allow all pharmacies to benefit from more efficient hub-and-spoke dispensing. This may change the future landscape of homecare. This legislative change may allow moves to 'hospital EPS' which may help with transfer of prescriptions across organisational boundaries.

In 2016, the Carter Review and its subsequent Hospital Pharmacy and Medicines Optimisation Project (HoPMOp) highlights efficiency savings opportunities through:

- The acceleration of e-prescribing (ePMA) in hospital pharmacy
- Accurate coding of medicines, cost data, particularly of high cost drugs (e.g. homecare medicines)
- 90% of ordering and invoicing activity undertaken by Trust pharmacy departments to be sent and processed electronically

How can digital technology enable the transformation of homecare?

The Care and Quality Gap

Examples of how digital technology can support closing the care and quality gap in homecare include:

- How clinicians can be alerted promptly to deteriorating or 'at risk' patients receiving homecare
- How clinicians and care professionals can make more effective decisions through sharing of information from the homecare providers (e.g. adherence records, records of wasted medicines)
- How new homecare service models can be underpinned by access to digital, real-time and comprehensive patient information
- How technology can be used to reduce the Information Governance burden and risk
- How seamless care can be improved through direct access and real-time recording of drug administration on a patient prescription by field nurse at patient's home

The Finance and Efficiency Gap

Examples of how digital technology can help close the finance and efficiency gap include:

- How workforce efficiency can be increased through e-prescribing and e-commerce
- How unnecessary patient contact can be avoided through self-booking of delivery / nurse visit slots by patients
- How deliveries of unnecessary medicines, equipment and ancillaries can be avoided through self-reporting by patients, therefore reducing waste

The Health and Wellbeing Gap

Examples of how digital technology can support closing the health and wellbeing gap include:

- How patient-recorded information can contribute to an increased role for self-care in homecare setting
- How health management in homecare can be supported through the analysis of data across the systems
- How patient care at home can be integrated through digital technology and tools

Vision for digitally enabled transformation in homecare

The scope of this vision encompasses but is not limited to:

- Paper free (or paper light) in all homecare medicines processes (including at the point of care)
- Digitally enabled self-care to support patients receiving treatment at home
- Real-time data analytics (e.g. KPIs, homecare activity, patient outcomes)
- Whole systems across organisations intelligence to support service management and effective commissioning, clinical surveillance and research

Its scope is defined by the following universal groups of capabilities:

- E-prescribing
- Transfers of patient records externally (i.e. NHS Trust to homecare providers and vice versa)
- E-commerce
- Patient friendly applications to support self-care
- Integrated system to support medicines management and medicines optimisation
- Asset, resource and workforce optimisation
- Unified communications

The vision will be informed by the priorities by the local health and care system in development of the individual Hospital Sustainability and Transformation Plan. It is recognised that different local health and care systems will

progress towards digitisation at different rates, prioritise the deployment of capabilities differently and be able to articulate their medium- to long-term plans to different degrees.

Successful system-wide change requires strong leadership and deep clinical/practitioner/supplier engagement. It must also be underpinned by national standards and comply with all governance requirements particularly as the system will interface beyond the NHS. It is vital that all Trusts and homecare providers are taking a consistent and joined up approach and the solution must work for all parties. The homecare digital roadmap sets out the proposed arrangements in this respect.

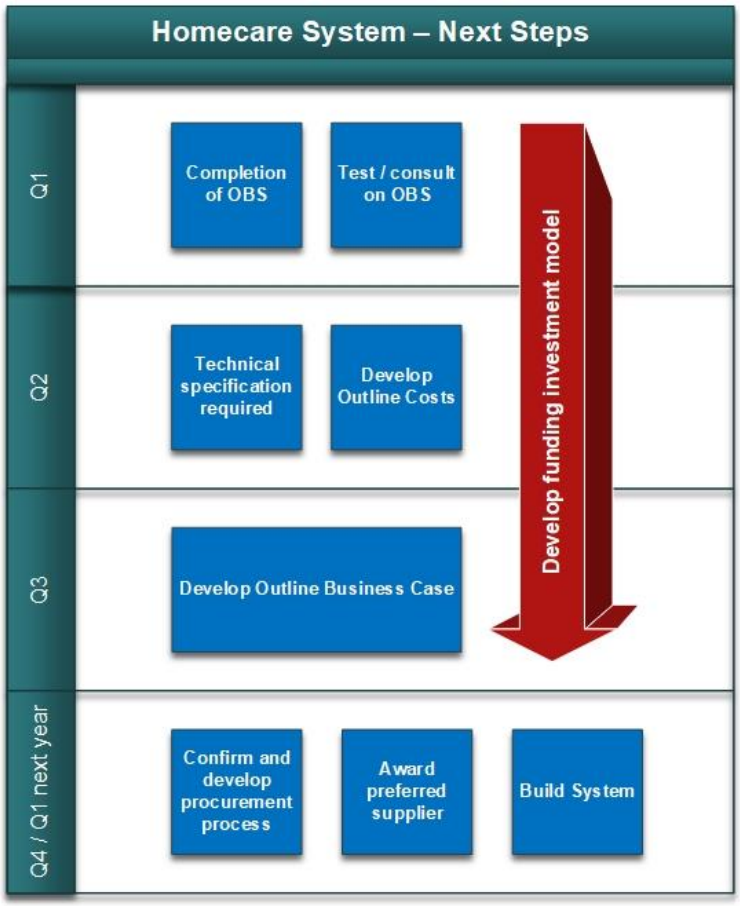


Figure 1 - Homecare Roadmap

Systems Development

Homecare improvements are likely to need integration of many different systems for each trust to meet these business requirements in this OBS. The range of integration and scope of development needed will be dependent on the current Trust/Homecare Services working practises and adoption of the Expertise and RPS Homecare Professional Standards 2

The following section shows one possible development / adaption of an IT service akin to the current service known as EPS (Electronic Prescriptions Service)[2]. Such possible system might be integrated to support the transmission of both FP10 prescriptions and valid homecare prescriptions from NHS hospital Trusts.

[2] Currently EPS is not available in Wales nor Scotland.

The diagram below illustrates how such a system could be developed to support changes in hospital pharmacy service provision.

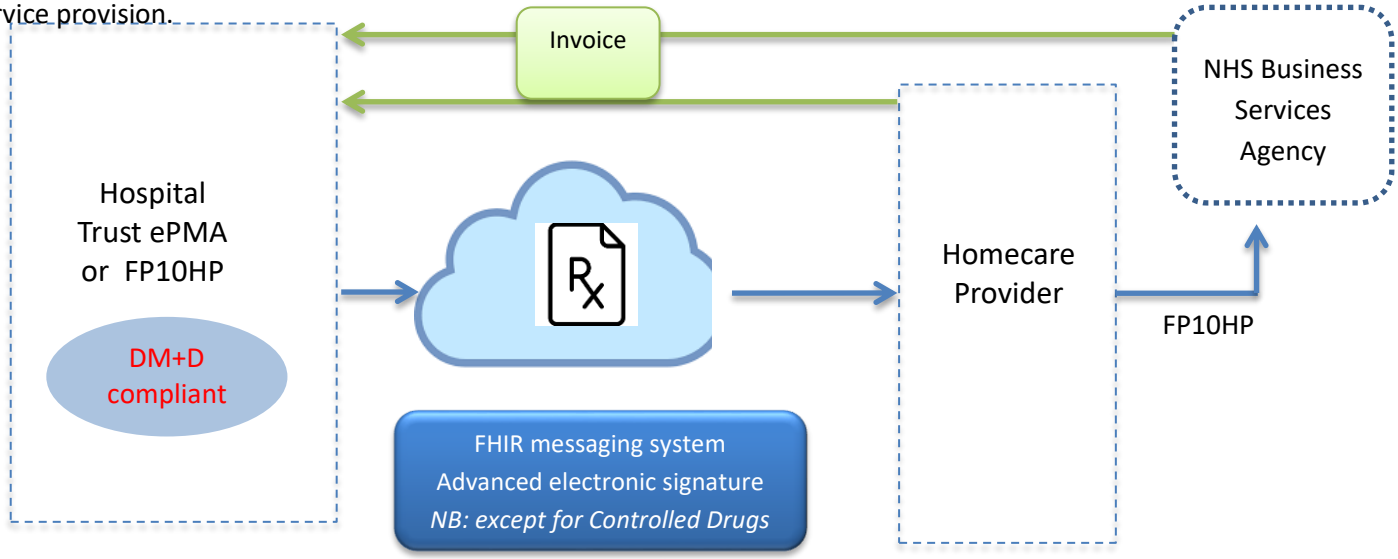


Figure 2 - Vision for e-prescribing in Secondary care

Further discovery work has confirmed that a prescription for homecare medicines generated from a Trust's ePMA system signed with an advanced electronic signature would be accepted as a legal prescription for dispensing by a homecare provider. [3] The message structure, FHIR, represents the standard being adopted by the NHS for messaging.

The process flow for Figure 2 is as follows (additional new processes that could also be introduced to support Homecare dispensing have been highlight with yellow):

- This process assumes the following is known:
  - Patient's NHS number (or CHI number in Scotland)
  - prescribed medication
  - Variable Homecare service charges relevant to individual drugs/prescriptions
  - The Homecare dispenser is chosen as follows:
- If the patient has a nominated Homecare dispenser, then that dispenser is used
  - If this prescription needs a specific Homecare dispenser, then that dispenser is used
  - Otherwise select a dispenser from a drop-down list.
- Prescription message is created and electronically approved by the prescriber
- Once approved:
  - The pharmacist will clinically check the prescription.
  - The nominated dispenser can download their prescriptions
  - A non-nominated prescription can be downloaded using the Prescription ID. The Prescription ID is normally conveyed to the dispenser on a printed prescription token as text and a barcode. [However, the Prescription ID could be conveyed to a specific dispenser via email or another communications mechanism.]
- The medication is dispensed and issued to the Patient, which:
  - sends a Dispense (or a dispatch) Notification message to EPS
  - cross charges the associated hospital directorate.
- Dispensing endorsements related to BSA[4] prescription reimbursement are forwarded to the BSA for processing

[3] The Human Medicines Regulations 2012 – Electronic Prescriptions (219).
[4] NHS Business Services Authority. In Scotland, this is known as National Services Scotland Practitioner Services Division

- Each month the FP34 paper claim forms are passed to BSA, so BSA can record the number of paper and electronic prescriptions submitted for reimbursement in that month.

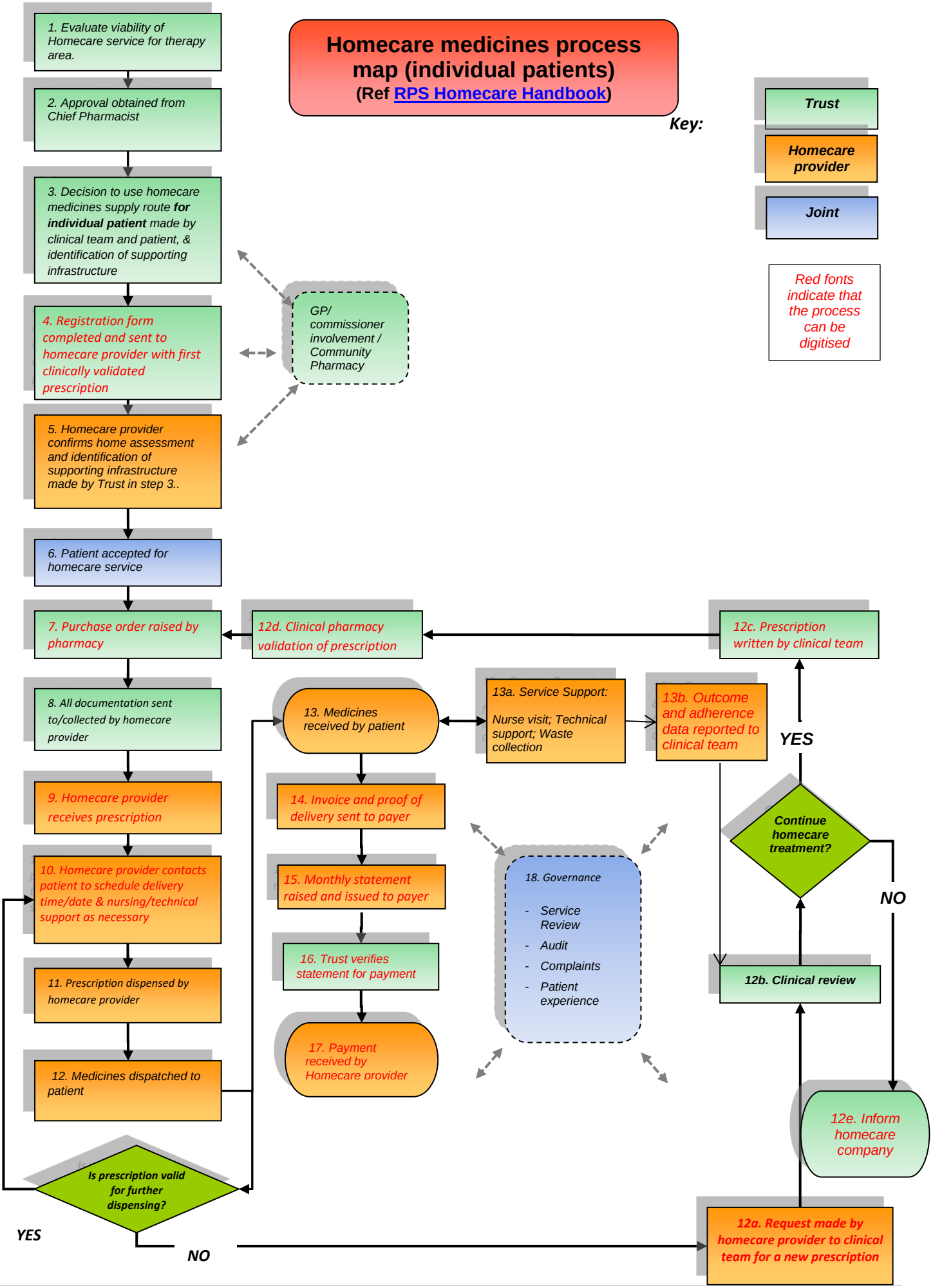
Suggested specifications for NHS Trusts EPMA system, incorporating homecare aspect:

The list below does not follow any particular process flow but simply highlighting key specifications for homecare.

- The outpatient prescribing functionality **MUST** support the production of either (1) an electronic supply request to the Trust pharmacy department, dispensary, or a designated commercial community pharmacy or Homecare providers, or (2) a prescription which can be taken to any other approved dispenser.
- For Day case prescribing, once the prescription has been completed and approved, the system **MUST** support the immediate production of an electronic supply request to the Trust pharmacy department or dispensary, or to a designated commercial outpatient or Homecare service providers
- The system **MUST** support the transfer of homecare prescription and/or medication information to GPs, community pharmacists and a commercial pharmacy and Homecare providers using the Trust's future messaging system.
- Discharge information **MUST** make it clear if the patient is going home with their own medicines which they brought into hospital on admission, or already have a supply at home, or will be having their medication delivered by a specialist Homecare provider.
- The prescribing functionality **MUST** comply with Advanced Electronic Signature standard

Homecare medicines process map (individual patients)

(Ref RPS Homecare Handbook)



Patient Journey Overview

The following shows the 4 key building blocks for homecare and the need for an overarching reporting tool. Please note, a further more detailed vision for how a Homecare prescription / dispensing business process should work from a Patient prospective can be found in Appendix 2.

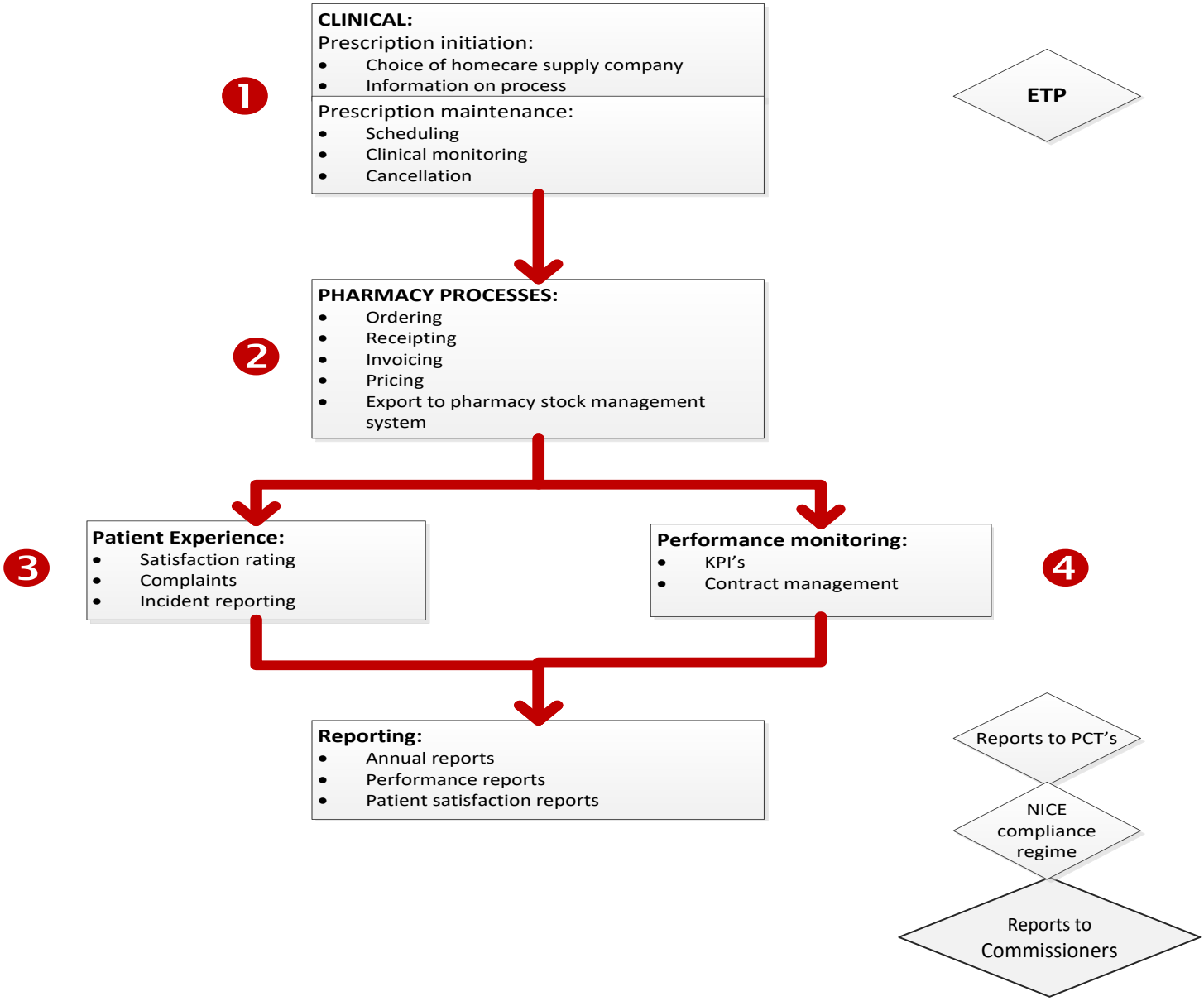


Figure 3 - Patients Journey Overview

Business Requirements Overview

This section shows:

- the overview of the Homecare Key Functional Areas
- and then the individual Homecare Key Processes layered next to each other, so they can be compared.

Please note, the same Functional Areas have been located in the same place in all diagrams to facilitate clarity.

Key Functional Areas

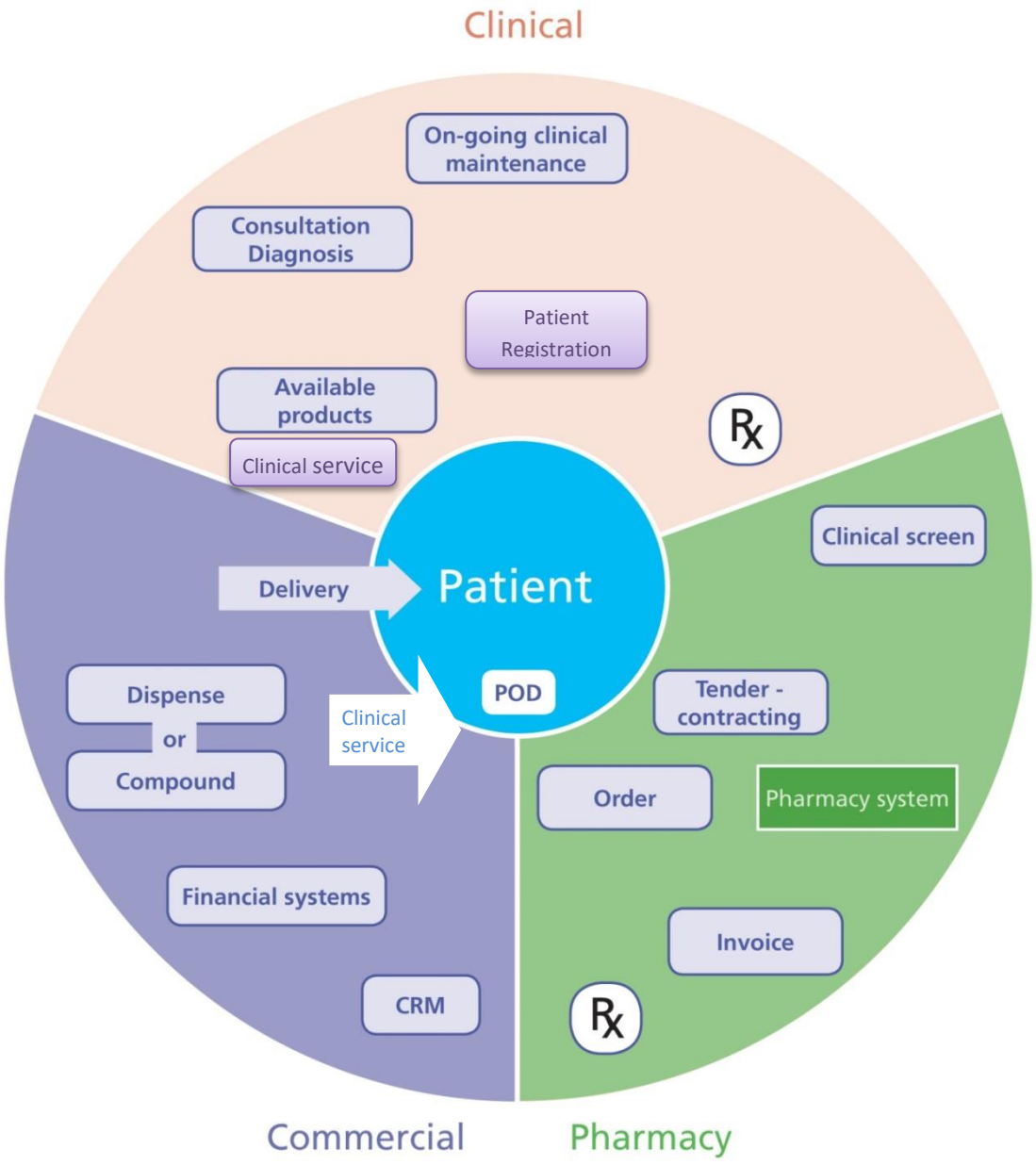


Figure 4 - Key Functional Areas

Key Processes

The following shows the individual Homecare Key Processes layered on-top of each other to help visualise the similarities and differences:

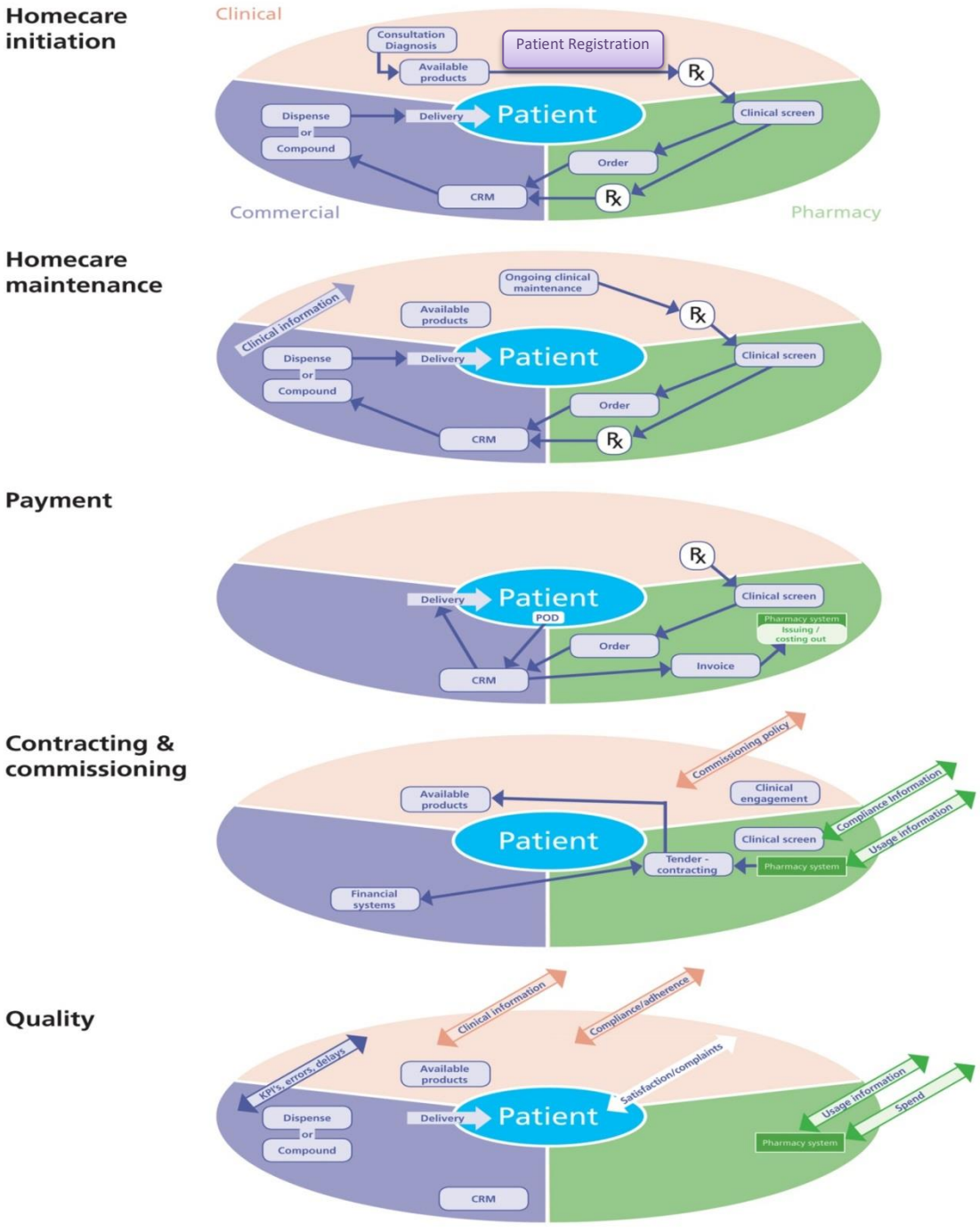


Figure 5 - Key Business Processes

Prioritised Requirements List

Fundamentals

Throughout any developing systems involved in the provision of NHS pharmacy services it is a requirement that all relevant applicable data standards are incorporated to ensure interoperability and comply with NHS requirements.

The following examples are SOME of the essential components that will be used across this output based specification as standard. This list is not exhaustive and will change. Continued compliance will be required.

- NHS Open API policy
- https://www.england.nhs.uk/digitaltechnology/connecteddigitalsystems/interoperability/open-api/
- NICE – Evidence standards framework for digital health technologies (Mar 2019)
- The Human Medicines Regulations 2012 – Electronic Prescriptions (219).
- The Electronic Identification and Trust Services for Electronic Transactions Regulations 2016 No. 696
- The NHS Digital data and technology standards framework sets out message standards which opens new possibilities for accessing and transferring prescription and related information across all care sectors.
- The NHS number – as required by the NPSA safer practice notice (Risk to patient safety of not using the NHS Number as the national identifier for all patients) & the NHS Contracts requirement; This is also a new requirement of the new NHS Digital, Data and Technology standards framework
- NHS Organisation Data Service code (also known as NACS) – e.g. RLQ
- Clinical Information Standards to support the 'end to end' flow of patient information flow across the health ad care system:
    - dm+d – all prescribing and medication related transfers of information to utilise dm+d coding;
    - Snomed CT – the vocabulary for use by clinicians in an Electronic Patient Record (EPR). A single terminology across the care system enables cross sector interoperability, reducing clinical safety risk due to potential data loss on mapping between different terminologies.
- NHS Digital Interoperability Framework
- HL7 the international framework (and related standards) for the exchange, integration, sharing, and retrieval of electronic health information. Fast Healthcare Interoperability Resources (FHIR) created by HL7 – a standard for exchanging healthcare information electronically between systems, including mobile and cloud-based applications.
- The technology compliance process follows the NHS Digital "Common Assurance Process". An approval must be gained from the NHS Digital Solutions Assurance team to develop an electronic-prescribing compliant system.
- Relevant digital technology must be assessed and approved through the Digital Technology Assessment Criteria (DTAC) process run by NHSX.[5] Further guidance and support can be found in A guide to good practice for digital and data-driven health technologies.
- In addition to the DTAC process above, any digital technology that is classified as a Medical Device must also comply with the regulatory requirements under Medical Devices Regulations 2002, certified with conformity marking and registered with MHRA.
- Align with NHS eProcurement Strategy - PEPPOL6 and its accompanying standards must be used for electronic purchase order and invoice messages and are required to be exchanged through PEPPOL Access Points. Adoption is mandatory for both NHS Trusts and their Suppliers through NHS Terms and Conditions of Contract for the Supply of Goods and Services. These standards include:
    - GS1 standards
    - GSRN – patient/prescriber identifier
    - GLN – location codes
- Compliance with the EU Falsified Medicines Directive including options for capturing batch number and expiry dates PLUS the ability to capture and record any form of serialisation numbering (e.g. GTIN (akin to AMPP dm+d)
- NHS eClass – the bespoke classification system for products and services. NHS-eClass facilitates the accurate analysis of expenditure and is now administered by NHS Shared Business Services.

[5] https://www.nhsx.nhs.uk/key-tools-and-info/digital-technology-assessment-criteria-dtac/

[6] Early discovery work in 2017 has identified a potential IG hole when trying to use PEPPOL to electronically transfer orders containing patient details. This has created a problem as the PEPPOL access points require the document in plain text even though it was encrypted for transport.

- Professional Record Standards Body (PRSB) standards – national standards for the structure and content of health and social care records. These cover, for example, hospital referral letters, handover communications, discharge summaries and inpatient / outpatient letters.
- All systems must utilise 128 bit encryption (or greater) for all transactions crossing public networks.

Any system must provide a flexible and comprehensive reporting tool to allow appropriately authorised and audited data extraction. Whilst proprietary systems may be used to link into the homecare system all functionality must be based around open standards for IT systems to allow future developments.

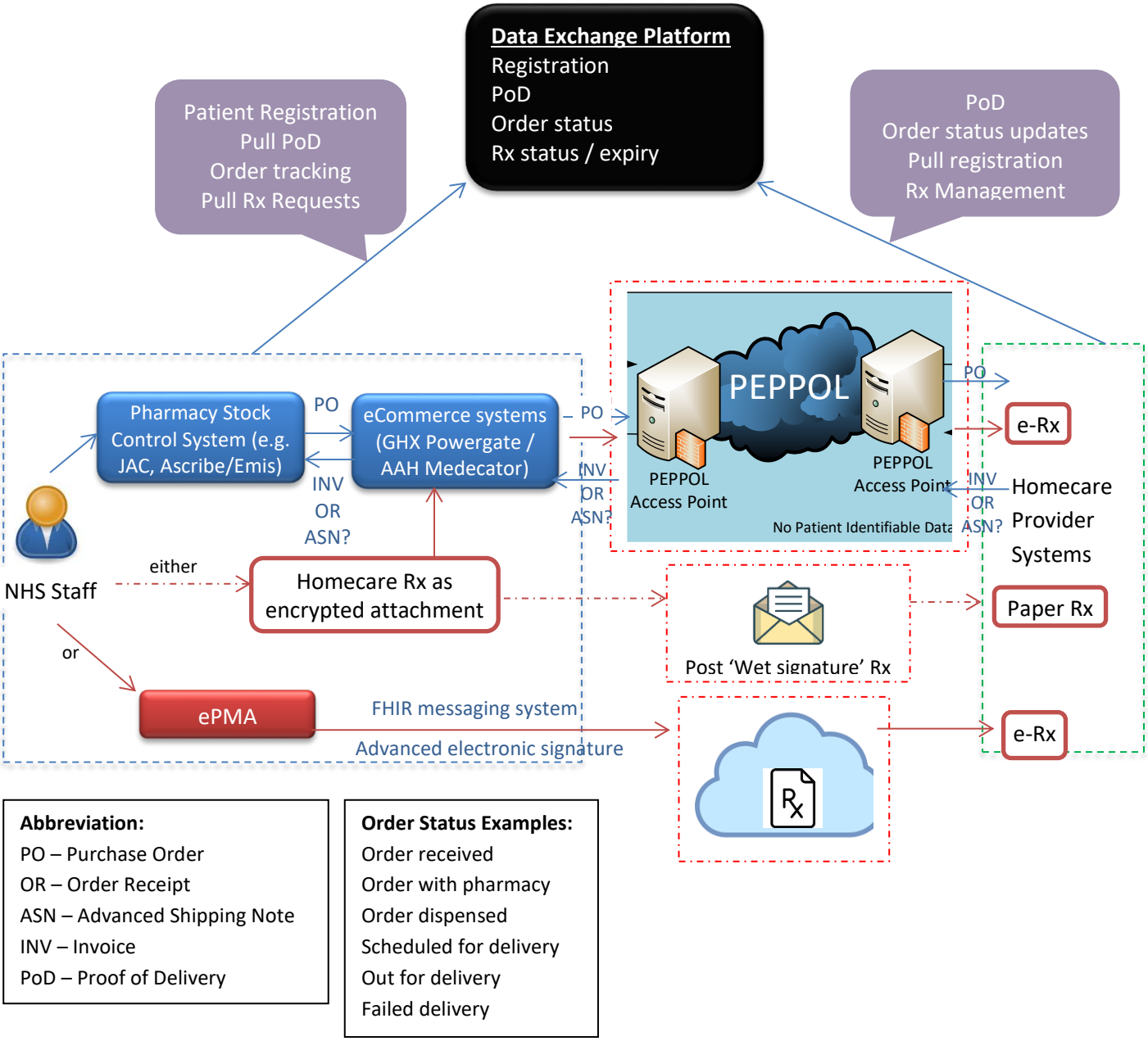


Figure 6 - Future of digital homecare

Prioritisation

Within the following tables the following principles have been used to prioritise the requirements:

- Fundamental – required immediately as part of any system
- Priority 1 - required within 12 months of any system being implemented
- Priority 2 – required within 2 years of any system being implemented
- Strategic – Provides overall direction of strategic development. Should be used by developers as a route map for intended system development

Patient Requirements

Requirement	Output	Priority
Provision of a single point of contact	Provide simple feedback methods into systems.	Fundamental
	Deliver digital and traditional systems available in parallel.	Fundamental
	Allow for mobile device alerts or call centre data entry.	Priority 2
	Provide automated responses – e.g. computerised call up to confirm medication delivery.	Priority 1
	Provide a patient satisfaction survey process.	Priority 1
	Allow patient initiated complaints and issue recording & resolution.	Priority 1
	Develop other patient driven support systems e.g. Blog's, Discussion forums, newsletters.	Strategic
Data Management and access to information.	Ensure plain English/ readability	Fundamental
	Provide a repository for organisational and medication/disease specific Patient Charter documents with overall vision	Priority 1
	Provide systems for authorising (and de-authorising) Proxy access to support care management (carers/parents etc)	Priority 2
	Provide assurance of confidentiality and, where appropriate, anonymity	Fundamental
	Ensure GDPR compliance; where consent is required to enrol of any Patient Support Programme, feature to enable opt-out must be incorporated in the systems	Fundamental
	Provide secure access including support for lost passwords etc	Fundamental
Contact/Communication systems.	Manage who (Patient, parent, carer) and how (phone, email, text etc) are patients contacted	Fundamental
	Information for the patient as to which company and which treatment must be clear in all communication	Fundamental
	Information as to which hospital is managing the homecare that any contact relates to (as many patients may be accessing clinical services from different providers)	Fundamental
	Provide English and access other languages for information as a minimum	Priority 1
	Provide options for alert systems- fridge temperatures; smart infusion pumps	Strategic
	Allow for a review progress – provision of a patient perspective, optional diary or log of care and progress. Including an escalation process to the clinical team	Priority 2

Requirement	Output	Priority
Managing Own Delivery	Explain options and allow choice of supplier – which, within a contract process, would include “in hospital” care plus the contracted homecare provider.	Priority 1
	Provide flexibility of timing of delivery	Priority 1
	Provide visibility of delivery schedule and real-time tracking	Priority 1
	Allow patient /carer to make changes	Priority 1
	Allow for personalisation – preferences as to contact methods, times of day for contact etc	Fundamental
	Ensure options for consolidation of supply – not multiple deliveries	Strategic
	There should be flexibility in delivery system potentially including courier, collection from local pharmacy *(*as relevant to medication being supplied).	Fundamental
	Support proxy involvement in changes	Priority 1
	Ensure security of supply including escalation process for supply problems	Fundamental
Access to a single clinical record – “My Homecare”	Allow patient and authorised carer access to THEIR homecare record	Priority 1
	Provide the option to review clinical information	Fundamental
	Allow for patient/carer entry of clinical problems – side effects	Priority 2
	Allow patient to confirm they have been offered choice of treatment (where available)	Priority 1
Information governance	Provide the functionality to see individuals (authorised proxy access) and organisations (NHS Trust and homecare provider) who can access individual patients records	Priority 2
Access to counselling and Medicines Information / patient charter relating to current treatment	Provide access to electronic copies plus the option to request printed copies via telephone help line	Priority 1
Compliance / adherence diary facility	Provide functionality to allow patient to able to enter medication taken, adverse effects and clinical problems encountered.	Priority 1
	Support via opt-in for call centre to contact the patient to collect same information	Priority 1
Efficient and transparent process	Pharmacy processes should not adversely impact on the patient’s pathway.	Fundamental
	Pharmacy actions must feed into the “My Homecare” record to keep patient/carer informed.	Priority 1
Patient satisfaction – including complaints, complements and queries	Provide assurance that complaints, compliments and queries are reported and responded to.	Priority 1
	Provide access to the overall governance reporting for their homecare provider	Priority 1
Self-funding process for private patients (e.g. IVF)	Provision of invoicing and payment system	Priority 2

Clinical Requirements

Requirement	Output	Priority
Exception reporting	Providing information from the homecare provider e.g. Delivery failures, patient issues related to delivery driver etc	Priority 1
Clinical Governance/ Clinical Responsibility	Provide compliance and feedback regarding potential Non-compliance	Priority 2
	Review treatment/progress from patient diary	Strategic
	Patient diary escalated information	Priority 2
	Status of prescription – is there a current prescription? Number of instalments delivered on the prescription, Date next delivery due	Priority 1
	Able to transfer updated information about homecare service to GPs in a standardised template	Priority 1
	Able to update patient status e.g. on hold or discontinue with reasons	Fundamental
	Where there is more than one patient with the same name, the system should warn the user to perform additional checks before proceeding	Fundamental
	If more than one person is able to access a patient medicine record at any one time, only one authorised user can amend/update the active medicine record at the same time.	Fundamental
Access to a single clinical record	Provide access to Real-time demographic and clinical data including all entries relating to that patients care from all clinicians and the patient.	Priority 1
	Allow for auditable event reporting including admissions, discharges (including link to relevant clinical information e.g. SCR), death etc	Priority 1
	Providing reporting on patient entered information including adherence & adverse drug events (ADE's), complaint and incident	Strategic
	Display all related Pathology & other recorded clinical data	Priority 1
	Capable of importing patient demographic and clinical data from existing PAS/EPMA systems; the update of patient record only takes place once in a single source to ensure information accuracy across all interfaces.	Priority 1
	Display information from homecare company clinical evaluation records during homecare	Priority 1
	Provide outcome data following interventions from patient support programme (e.g. Patient Activation measure) by the homecare provider	Priority 1
Homecare formulary and process	Identify available Medication selection (treatment group specific)	Fundamental
	Identify Supply route options including detailed information on any specific requirements	Fundamental
	Provide access to Patient charter information for each option	Priority 1
	Provide information on any required Funding approval processes including approval status	Fundamental
Electronic Prescribing	Functionality to allow for Treatment initiation; role based access control for prescribing repeat prescription vs changing or initiating treatment	Fundamental
	Provide systems for Clinical scheduling including visits to hospital, clinical nurse specialists, homecare nurses	Priority 1
	Provide functionality for prescription management (repeat requests from homecare company)	Fundamental
	Enable homecare prescription to be put on hold or stop if the patient is admitted to hospital or changing treatment or personal circumstances.	Fundamental

Requirement	Output	Priority
	Provide a Stop facility for patients previously on homecare including information on anticipated patient held stocks. Any suspension on patient medicine schedules should adjust the schedule accordingly.	Priority 1
	System must comply with all UK legislative requirements and Department of Health guidance pertaining to medicines that may be issued, both now and in the future	Fundamental
	System must allow for customised administration schedules	Priority 1
	System must include the capability to prescribe medicines by infusion, including medicines which require reconstitution and intravenous fluids	Fundamental
	The prescriber must be able to select an appropriate infusion fluid and infusion fluid volume, infusion device during the prescribing process	Fundamental
	It should be possible to assign a level of urgency or priority to prescriptions	Fundamental
	The system must provide a clear audit trail of all modification on prescriptions which is viewable to all users. Once a patient has been discharged from the homecare service then it must not be possible to alter prescriptions.	Fundamental
Identification of clinical responsibility	System for clearly identifying which clinician is responsible for which aspect of a patients care (e.g. prescribing, blood testing, results review etc)	Priority 2
	Provide a Transfer of care/responsibility audit record for any changes in patient's clinicians	Priority 1
	Provide system to fully transfer care between organisations – e.g. to a different hospital if the patient moves provider or to a GP.	Priority 1
Formulary and approval process kept up to date	Clinicians engaged in formulary approval process including NICE drugs *(SMC in Scotland; AWMSG in Wales)*	Fundamental
	Formulary links managed via pharmacy computer system	Fundamental
	Individual patient charters and service provisions linked to the formulary and available to print, email or read online	Priority 1
Electronic Prescribing system	Prescribing system in use supports homecare prescribing including information on products and services provided	Priority 2
	Able to prescribe drugs and *ancillary items*	Priority 2
	Prescriptions transmitted to pharmacy for clinical screening and approval/processing	Priority 1
	IT service akin to EPS incorporated for NHS and "private" prescriptions	Strategic
	Paper based backup system available as part of disaster recovery arrangements	Fundamental
Patient safety	Supports historic NPSA and developing medication safety guidance	Fundamental
Clinical Key Performance Indicators – to show service value	Patient satisfaction	Priority 1
	Adherence with prescribed treatment	Priority 2
	Performance across specialty (granularity of reporting)	Strategic
	Clinical visits being undertaken and reported (clinical evaluation forms completed)	Priority 1
Periods of unavailability	The system must provide mechanisms for handling periods of unavailability and downtime due to planned maintenance, system breaks or communication problems	Fundamental

Pharmacy Requirements

Requirement	Output	Priority
Provision of alerts to patient	Allow for opt-in alerts e.g. Check your pump, check fridge temperature etc provided by text, phone-call email etc	Strategic
Clinical Governance	Provide patient satisfaction information	Priority 1
	Provide patient compliance feedback	Priority 1
	Allow for Issue identification, recording and resolution	Priority 1
	Provide option for patient and/or healthcare professional Yellow card alerting in relation to their homecare medication	Strategic
Access to a single clinical record	Provide access to Real-time clinical data including all entries relating to that patients care from all clinicians and the patient.	Priority 1
	If more than one person is able to access a patient medicine record at any one time, only one authorised user can amend/update the active medicine record at the same time.	Fundamental
	Allow for auditable event reporting including admissions, discharges, death etc	Priority 1
	Providing reporting on patient entered information including adherence & adverse drug events	Strategic
	Display all related Pathology & other recorded clinical data	Priority 1
	Display information from homecare company clinical evaluation records during homecare and real-time information on receipt of deliveries	Priority 1
Electronic prescribing – review and authorisation	Provide clinical screening functionality to allow review of prescribed medication to ensure compliance with formulary and clinical governance controls. This must allow for clinical changes to be reviewed, pharmacy specific annotation to be added.	Fundamental
	Provide information on any required Funding approval processes including approval status.	Priority 1
	Provide functionality to authorised pharmacists to change or cancel prescription with reasons recorded.	Fundamental
	Record authorisation/verification of prescription by clinical pharmacist. Verification status must be visible to all users	Fundamental
	Allow allocation of relevant treatment to categories – NICE, PbR excluded, exceptional funding.	Fundamental
	Allow transmission on to pharmacy ordering system	Fundamental
Homecare formulary	Allow pharmacy to maintain formulary for homecare medication (linked to wider hospital formulary).	Fundamental
	Allow maintenance of Patient Charter information, supplier information & any required additional registration paperwork	Priority 1
Adherence / compliance information	Allow the clinical pharmacist to review any medicines compliance/adherence information.	Priority 1
Ecommerce processes	Link from ePrescribing review & authorisation	Priority 1
	Parallel process to create & transmit electronic purchase order (next to EPS)	Fundamental
	'live pricing' e.g. add item to basket which automatically adds other relevant ancillary items or request a quote (purchase requisition) which is then referenced in purchase order to avoid any surprise of additional items being added or prices changing.	Priority 2

Requirement	Output	Priority
	POD reconciliation or alternative solution e.g. through the use of NHS App to check patient's receipt of delivery.	Fundamental
	Goods receipt	Fundamental
	e-Invoicing	Fundamental
	Simplify the update of CMU / PAS / other contract prices across interface (i.e. NHS and homecare providers)	Priority 2
	e-Credit (e.g. for Patient Access Schemes, credit notes)	Priority 1
Clinical Costing & coding	Automate patient level issue "booking out" of Homecare with correct/current costing from e-Commerce transaction.	Fundamental
	Standardised ancillary items including Nursing input, patient training, postage	Priority 2
Interoperability & standardisation /feed into pharmacy systems	Utilise open standards for data communication ecommerce.	Fundamental
Key performance indicators	Patient satisfaction.	Priority 1
	Operational KPIs – No. patients (registered, newly registered, "off treatment", on hold), Deliveries made, Items supplied, Invoicing (value, errors totals)	Fundamental
	Medication errors (incorrect drug, dose, label, formulation, quantity, expiry)	Fundamental
	Service failures (Missed/late deliveries, wrong location, inaccurate items)	Priority 1
	Automation of KPI reporting	Priority 1
Framework governance reports	Monthly, Quarterly and annual reporting facilities by homecare provider to include financial, performance (KPI), quality and patient focussed information	Priority 1
	Report to inform NHS organisation Medical and Nursing Directors of Homecare performance – Template with facility to add narrative and additional details.	Priority 1
	Service review meeting template reports	Priority 1
Contract monitoring	Provide a contract monitoring report by homecare provider	Priority 1

Commercial Requirements

Commercial requirements can further be categorised into the following:

- Homecare Provider
- Commissioner
- Finance
- Other

Requirement	Output	Priority
Homecare Provider Requirements:		
Communication systems	Allow for Voice, written, electronic (text, email)	Fundamental
	Provide clear communication audit trail – visible to patient and link into CRM system.	Fundamental
	Allow for patient specified schedule of times for communication	Priority 1
Prescription management system	Provide information to support homecare company CRM systems in managing on-going prescribing of homecare	Fundamental
	Allow acute provider review of requested, outstanding and sent homecare prescriptions	Priority 1
	Provide system of escalation to ensure patient supply is maintained	Priority 1
Access to a single clinical record	For registered and consented patients with that homecare company only: - Diagnosis, treatment pathways in use - Clinical outcomes - Adverse drug events	Priority 2
	Provide functionality to enable appropriate role-based access rights	Fundamental
	Provide access to Real-time clinical data including all entries relating to that patients care from all clinicians and the patient.	Fundamental
	Allow for review of event reporting including admissions, discharges, death etc PLUS event entry for homecare relevant activity – e.g. home care delivery, nurse administration.	Priority 1
	Providing reporting on patient entered information including adherence & adverse drug events	Priority 1
	Display all related Pathology & other recorded clinical data	Priority 1
	Display information from homecare company clinical evaluation records during homecare	Priority 1
Entry of clinical data	Allow for entry of clinical information relating to homecare services provided.	Fundamental
Information on adherence	Allow for entry of any homecare provider gathered information on patient adherence and stock level at patient's home	Priority 1

Requirement	Output	Priority
Patients able to be transferred between care settings	Provide functionality to allow for patients to be transferred between: - Care settings - Homecare provider - Commissioner	Priority 1
Electronic prescribing – review and authorisation	Provide reporting of clinical screening & other key events of the review of prescribed medicines. This must allow for clinical changes to be reviewed, pharmacy specific annotation to be added.	Priority 1
Prescription management system	Link to Homecare company Customer Relationship Management software	Priority 2
	Access to Electronic Transfer of Prescriptions service (EPS)	Strategic
	Link to hospital pharmacy homecare management team to support local resolution of prescribing issues	Priority 1
Patient switch management	Facility to move patients between homecare providers as contract changes occur	Priority 2
Commissioner Requirements:		
Details on clinical usage	Reports (anonymised but commissioner relevant) on diagnosis, clinical role of primary care	Priority 2
	Reports on delivered services and if commissioned/approved for treatment	Priority 2
Clinical Governance & assurance	Anonymised reports as to if that commissioner's patients are using the prescribed treatments	Priority 2
	Summary Patient satisfaction reports – with indication of the impact the treatment is having	Priority 2
Clinical outcome information	Provide summary anonymised reporting on commissioned service/patient related:	Priority 2
Formulary adherence	Ability to report on approved medication being used for approved indication PLUS un-authorised usage	Priority 2
	Reporting on patients being offered choice of treatment	Priority 2
Patient satisfaction	Reporting functionality to summarise commissioner's cohort of patient's satisfaction with homecare by company and treatment area.	Strategic
Management and minimisation of waste	Provide reporting on drugs not used/wasted by patients but charged to commissioners including error and patient events (clinical changes/death etc)	Fundamental
	Management of additional costs – extreme delivery choices**	Priority 1
Reporting	Monthly (and consolidated longer period) patient level reporting. By commissioner, drug, indication	Priority 1
	Patient Access Scheme usage reporting	Priority 1
	Reporting must not interfere with the normal working of the system	Fundamental

Requirement	Output	Priority
Approval mechanisms	Identification of commissioning policy – link to patient pathway & drug treatment (local vs. specialised commissioning)	Priority 1
	Facility for Cohort based, Criteria based access and prior approval (electronic systems); interfacing with Blueteq	Priority 2
	Audit tools to provide assurance of compliance	Priority 1
Finance Requirements:		
Wastage	Summary anonymised reports on any medication wastage including stock going out of date, unused deliveries, stock not used when patients die	Priority 2
Current clinical commitment	Summary of on-going homecare by commissioner and clinical condition with medication type – NICE, PbR excluded, Exceptionally funded	Strategic
Forecasting – to support clinical contracting	Summary of clinical indication usage over time to support horizon scanning and forecasting.	Priority 2
See Commercial section	See Commercial section	
Reporting tools	Provide (on a monthly basis) the aggregated cost of Homecare services by clinical service in the Trust. This cost being made up of invoices paid and an accrual for goods received but not yet paid for (The accrual being automatically generated by the system).	Priority 1
	Payment transactional data by supplier e.g. comparison between actual invoice payment date and date included in standard terms, relationship between the value of accruals and invoices paid in the month.	Priority 1
	Report on goods/service ordered but not yet received	Priority 1
Patient Level Costing	The cost of Homecare for each individual patient so that the relevant commissioner can be charged and so that costs can be directly allocated within the Patient Level Information & Costing system (PLICs).	Priority 1
Patient satisfaction – Value for Money	Develop reporting that reviews the value of spend by supplier with patient satisfaction/quality measures such as late delivery, complaints, incidents etc and also providing intelligence about whether the potential causal factors relate to geography, time of day, type of therapy, whether it's patient or carer feedback.	Priority 1
Appropriate financial controls	Contracting; Ability to automate the update of contract prices following a contract/framework award	Priority 2
	Costing/pricing algorithm to reflect accurate price change near real-time.	Priority 2
	System tolerances – ability to set thresholds in price discrepancies where minor price differences which are negligible can be overridden and discrepancies above the set threshold require further authorisation prior to passing invoices for payment.	Priority 1
	Delegation of authority	Fundamental
	Separation of duties	Fundamental
Data transfer	Interface between homecare system and finance/outsourced pay services	Fundamental

Other Requirements:		
Pharma-company - Information	Provide Pharmacovigilance reporting including yellow card submission	Strategic
	Provide anonymised summary Patient satisfaction reporting on medication specific service relating to Pharma company	Strategic
	Provide electronic links for any industry standard / clinical or registry portal for which Trusts may adopt in the future	Strategic
MHRA – Pharmacovigilance	Reporting Adverse Drug Events (Yellow Card information)	Strategic
DH reporting	Tools to provide England wide reporting on homecare drug usage	Strategic
	Homecare savings QIPP report	Priority 2
Devolved administrations	Transferability between home countries – allow for cross boarder activity	Strategic
Security	Application adheres to the Application Security Good Practice guide	Fundamental
	Achieve Data Security Standards required through the Data Security and Protection Toolkit	Fundamental
	The system must allow different levels of user access to be defined for each user profile and/or groups of users	Fundamental
Audit	All actions performed within the system must be date, time and user stamped and be auditable. Date and time stamps should preferably be recorded from a central clock for the whole system, not from clocks on individual PCs/devices	Fundamental
Standards	The system should be flexible and consistent with NHS standards through the use of national coding standards where they exist as documented in the NHS Data Dictionary, NHS Information Standards Notices and other similar official publications	Fundamental
Consistency	The system's look and feel should be consistent across all modules and functions with regard to design	Priority 1
System	The system must provide separate database and access environments for live operations, user training and testing of new software releases and developments. The system should provide for the ability to copy reference data between the live, testing and training environments but otherwise the databases should be mutually discrete and secure.	Strategic

Appendix 1 – Interoperable, Computable Medication Message

The FHIR specifications and implementation guidance for ***digital medicines*** covers the use of medication and dosage structure definitions within HL7 UK INTEROPen CareConnect Profiles. https://developer.nhs.uk/apis/dose-syntax-implementation/ FHIR is now the strategic, mandated standard for interoperability between systems within the NHS.

Appendix 2 – Ideal Patient Journey

Figure 7 gives an overview of the patient journey through Homecare prescription / dispensing from a Patient perspective which identified the requirements in the requirements section. Below is a vision of an ideal patients journey in more detail.

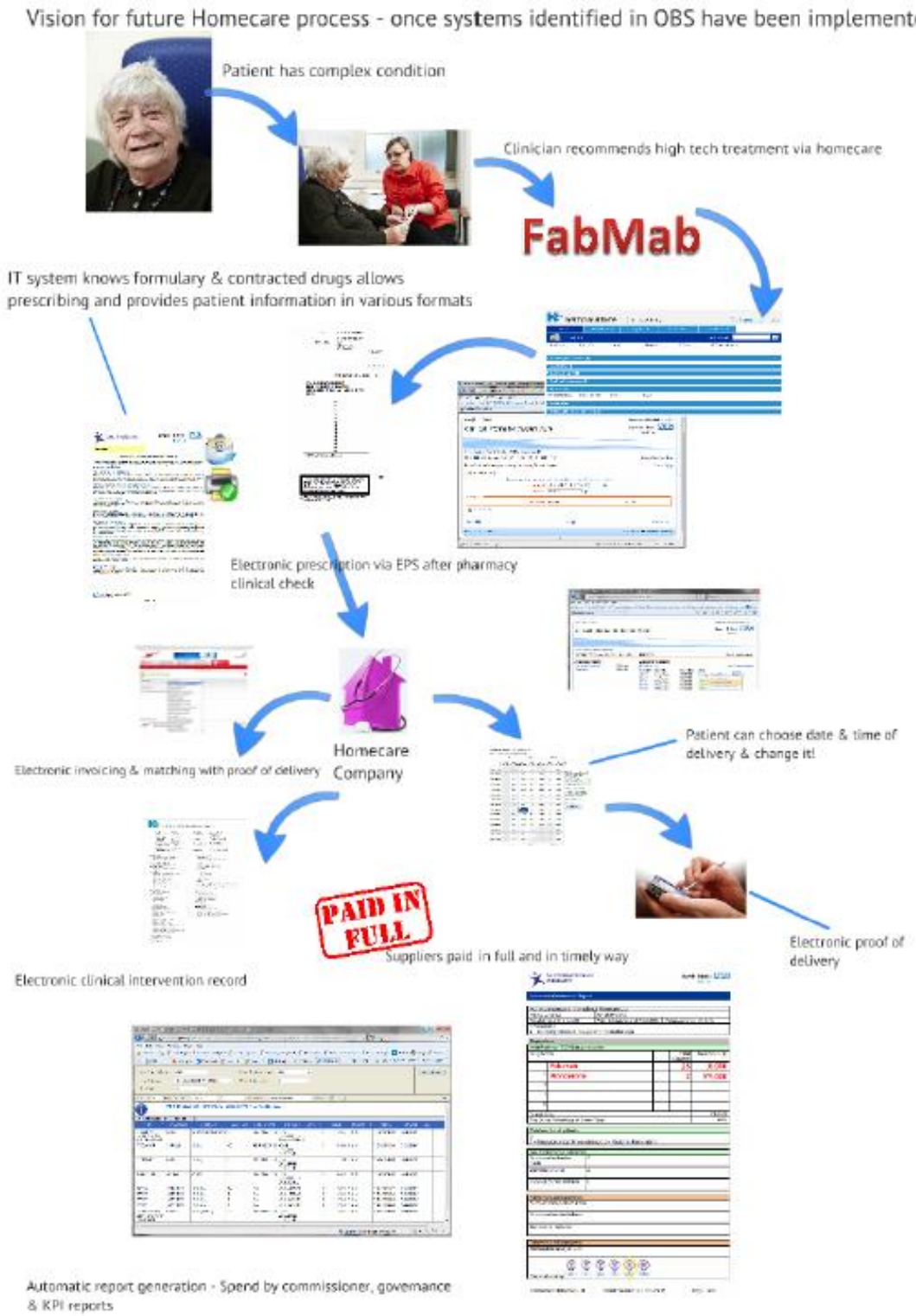


Figure 7 - Homecare prescription / dispensing from a Patient prospective

Appendix 3 – Useful Links

1. Homecare Medicines – Towards a Vision for the Future, 2011, Hackett, Mark, Department of Health (Gateway reference 16691). A copy of the Hackett report can be found here http://cmu.dh.gov.uk/files/2011/12/111201-Homecare-Medicines-Towards-a-Vision-for-the-Future2.pdf

2. Royal Pharmaceutical Society Professional Standards for Homecare Services

3. Operational productivity and performance in English NHS acute hospitals: unwarranted variations (Lord Carter's review June 2015)

4. NHS Long Term Plan 2019

5. NHS Five Year Forward View 2014

6. Fast Healthcare Interoperability Resources (FHIR) – NHS Digital systems and services

7. The Operating Framework for the NHS in England 2012/13. http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_131428.pdf

8. National Audit Office report for prescribing costs in primary care, can be found here http://www.nao.org.uk/publications/0607/prescribing_costs_in_primary_c.aspx

9. DH paper for "Improving the use of medicines for better outcomes and reduced waste", can be found here http://www.dh.gov.uk/health/files/2012/12/Improving-the-use-of-medicines-for-better-outcomes-and-reduced-waste-An-action-plan.pdf

10. NCHA Proceedings Homecare Systems Workshop (20th Jul 2015)

11. NHSX What good looks like framework Aug 2021

Appendix 4 – Glossary of Terms

Name	Acronym	Description
Actual Medicinal Product Pack	AMPP	Medicine description which consists of the Actual Medicinal Product (AMP) name (SmPC/packaging name) + Supplier + Quantity + Quantity unit of measure
Application Programming Interface	API	An interface or communication protocol between a client and a server intended to simplify the building of a software application.
Clinical Commissioning Group	CCG	Clinical commissioning groups are groups of GPs that will, from April 2013, be responsible for designing local health services In England. They will do this by commissioning or buying health and care services including: • Elective hospital care • Rehabilitation care • Urgent and emergency care • Most community health services • Mental health and learning disability services
Care Quality Commission	CQC	Regulate care provided by the NHS, local authorities, private companies and voluntary organisations. They aim to make sure better care is provided for everyone - in hospitals, care homes and people's own homes. They also seek to protect the interests of people whose rights are restricted under the Mental Health Act.
Clinical Commissioning Group	CCG	Community patient care and commissioning organisation.
Commercial Medicines Unit	CMU	CMU work to ensure that the NHS in England makes the most effective use of its resources by getting the best possible value for money when purchasing goods and services. CMU enhance and safeguard the health of the public by ensuring that medicines and medical devices work and are acceptably safe. No product is risk-free. Underpinning all our work lie robust and fact-based judgements to ensure that the benefits to patients and the public justify the risks.
Commissioning for Quality and Innovation	CQUIN	The Commissioning for Quality and Innovation (CQUIN) payment framework enables commissioners to reward excellence by linking a proportion of providers' income to the achievement of local quality improvement goals
Customer Relationship Management	CRM	An approach to manage a company's interaction with current and potential customers.
Department of Health and Social Care	DHSC	The Department of Health and Social Care provides strategic leadership for public health, the NHS and social care in England.
Electronic transfer of Prescriptions Service	EPS	Existing system which may be enhanced to support the transmission of both FP10 prescriptions and "private" NHS prescriptions for Homecare and out-patients
Fast Healthcare Interoperability Resources	FHIR	A standard for exchanging healthcare information electronically and is the strategic standard for

Name	Acronym	Description
		interoperability between systems within the NHS. The international FHIR standard is published by HL7.
General Practitioner	GP	A medical practitioner who typically the first medical professional a patient will see and as such treats wide variety of illnesses and provides preventive care and health education for all ages and all sexes
General Data Protection Regulation	GDPR	A new EU data privacy regulation that came into effect in May 2018, that replaces the Data Protection Directive 95/46/EC
Global Location Number	GLN	A part of GS1 Identification Key used for any location (physical, operational or legal) that needs to be identified for use in the supply chain.
GS1	GS1	Global Standards organisation (not-for-profit) that develops and maintains global standards for business communication (e.g. barcodes).
Global Service Relation Number	GSRN	GS1 Identification Key used to identify the relationship between a service provider and service recipient.
Global Trade Item Number	GTIN	A globally unique 14-digit number used to identify trade items, products, or services, developed by GS1.
Homecare		Homecare is defined as a service that regularly delivers medicine supplies and associated care, directly to a patient's choice of location. Homecare services are split between those which are set up by the Pharmaceutical industry for individual products and those services which are contracted to an NHS specification
Hospital at Home		Arrangements made to avoid admission to hospital or to facilitate early discharge from hospital by administering medicines, often via the intravenous route, in the patient's home – **This type services is NOT included within this Output Based Specification**
Interoperability		The use of specific, fundamental standards in IT systems to support effective communication between systems. Full 2-way access must allow information to automatically flow between systems within standardised messaging formats
Key performance indicators	KPIs	Key Performance Indicators are quantifiable measurements, agreed to beforehand, that reflect the critical success factors of an organisation.
Manufacturer derived scheme		Process by where the manufacturers of the product works with a homecare provider to ensure their product/s are delivered to a patient at home. The NHS has no relationship or involvement with this arrangement other than paying for the product and service which is bundled together.
Multi-disciplinary team		Collaborative efforts of professionals from different disciplines toward a common goal. Can be made up of Consultant's, Clinician's, Nurses, Pharmacists and Healthcare Workers.

Name	Acronym	Description
National Clinical Homecare Association	NCHA	Represents and promotes the interests of industries whose business is substantially to provide medical supplies and/or clinical services directly to patients in the community within an appropriate quality framework. Provide a forum for lobbying on issues that affect homecare. Set and debate policy decisions with the National Homecare Medicine Supply Committee and other relevant government bodies.
National Homecare Medicines Committee	NHMC	A national committee comprising of NHS, Industry and Department of Health representatives. The key aim is to act as the national focus for developing and improving processes for homecare services.
National Health Service	NHS	English Health Service.
National Institute for Health and Clinical Excellence	NICE	NICE is an independent organisation responsible for providing national guidance on promoting good health and preventing and treating ill health.
National Patient Safety Agency	NPSA	Lead and contribute to improved, safe patient care by informing, supporting and influencing organisations and people working in the health sector. An Arm's Length Body of the Department of Health and through three divisions covers the UK health service.
Output Based Specification	OBS	It can be considered as a "wrapper" to describe the functionality required of a range of different systems supporting the provision of homecare.
Patient Access Scheme	PAS	A pricing agreement proposed by pharmaceutical companies to enable patients to gain access to the high costs drugs in the NHS.
Payment by Results	PbR	A system of paying NHS healthcare providers a standard national price or tariff for each patient seen or treated.
Pan European Public Procurement Online	PEPPOL	A set of artefacts and specifications enabling cross-border eProcurement. It enables the NHS and its suppliers to use standardised connection for eOrdering, eInvoicing, electronic Credit Notes and Advance Shipping Notifications. This means that a Trust can have one single eProcurement link to the outside world, via which they can trade with the current or future suppliers.
Primary Care Trust	PCT	Community patient care and commissioning organisation (replaced by CCG in April 2013)
Quality, Innovation, Productivity and Prevention	QIPP	QIPP is a large scale transformational programme for the NHS, involving all NHS staff, clinicians, patients and the voluntary sector and will improve the quality of care the NHS delivers whilst making up to £20billion of efficiency savings by 2014-15, which will be reinvested in frontline care.
Serious Untoward Incidents	SUI's	An SUI is in general terms something out of the ordinary or unexpected, with the potential to cause serious harm and/or likely to attract public and media interest that occurs on NHS premises or in the provision of an NHS or a commissioned service.
Service Level Agreement	SLA	A service level agreement (frequently abbreviated as SLA) is a part of a service contract where the level of

Name	Acronym	Description
		service is formally defined. In practice, the term SLA is sometimes used to refer to the contracted delivery time (of the service) or performance.
Sub-contractor		A subcontractor is an individual or in many cases a business that signs a contract to perform part or all of the obligations of another's contract. A subcontractor is hired by a general contractor (or prime contractor) to perform a specific takes as part of the overall project.
Summary Care Record	SCR	The electronic patient record, centrally held, that contains information about the medication taken, allergies suffered and adverse medication events individual patients
Trust/Organisation		Strategic health authorities are responsible for the performance of NHS organisations known as trusts. This includes CCGs, acute trusts, mental health trusts, Ambulance service trusts and foundation trusts.

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V 8	Andrew Davies	V8 was the first published edition, which was featured in the launch of the Homecare Handbook October 2013. It was developed, subject to full public consultation and published following publication of **Homecare Medicines: Towards a Vision for the Future** and approval by the DH Homecare Strategy Board.	August 2013
V 9	See Mun Wong (Chair of NHMC Digital Subgroup)	Reviewed as part of the NHMC Digital Homecare Project with homecare stakeholder consultation and NHMC approval. Minor updates and addition of signposting to NHS Digital app guidance.	18 October 2019
V10	See Mun Wong	Change of NHS Digital Assessment Portal to NHSX DTAC assessment for any digital technologies that are used in delivering NHS health and social care; Added NHSX 'what good looks like' framework under reference	14 Sept 2021