Guidance on Pharmacy Services and Medicines Use within Virtual Wards (including Hospital at Home)

September 2022

1. Overview

This guidance is for organisations establishing or maintaining virtual wards (including Hospital at Home).[1] It is intended to support organisations and NHS colleagues when considering service design, development and delivery of virtual wards in relation to pharmacy teams and medicines use. Case studies of pharmacy practice are included within the main text and in Appendix 3 to support local service development and implementation in the context of virtual wards, as well as broader virtual care showcasing safe, timely and effective medicines use in this setting.

2. Scope

This document aims to guide the multidisciplinary team (MDT) including pharmacy service leads, medical staff, nursing staff, allied health professionals (AHPs) and operational managers, in designing and delivering the patient care and medicines use aspects of the virtual ward service across all sectors.

Although the focus of this document relates to virtual wards; the principles also apply to services that provide virtual and/or face to face out-of-hospital care to patients within their usual place of residence. Providers of these services can be from acute trusts, community trusts and primary care including community pharmacy teams. Developing these services involves building on established services available, such as community nursing domiciliary visits, outpatient parenteral antimicrobial therapy (OPAT)[2] and palliative care services. Virtual care can be acute or long-term and usually involves remote monitoring of a patient by clinicians and/or treatment of patients. Such virtual care includes, but is not limited to, the following:

- Virtual wards (including Hospital at Home)[1]
- NHS@home[3] e.g. COVID Oximetry @home, Long Term Conditions Care @home (including managing blood pressure, heart failure, lung health and proactive care)
- Remote outpatient clinics or consultations from acute, community or mental health trusts
- Telehealth and telecare

Where *medicines* are referred to in this document, the approach could also be applied to prescribed items that are not medicines, such as wound care products, enteral feeds, blood glucose test strips, glucose monitoring devices, catheterisation packs, etc.

3. Introduction

A virtual ward (including Hospital at Home) is defined as a safe and efficient alternative to NHS bedded care that is enabled by technology. Virtual wards support patients who would otherwise be in hospital to receive the acute care, monitoring and treatment in their own home. This includes either preventing avoidable admissions into hospital or supporting early discharge out of hospital.**Error! Bookmark not defined.** In 2022, the national focus of virtual wards has predominantly been respiratory[4] and frailty[5] specialities. Local priorities have also led to the development of a range of other clinical pathways such as heart failure and diabetes. Virtual wards usually involve management of acute care with a short stay of up to 14 days and are a key element of patient care, NHS recovery and transformation of out-of-hospital services.

Most patients entering a virtual ward service will be taking medicines as part of their care and as such, pharmacy support and input at the outset is vital. This is described in five sections within this guidance document:

- Governance: Medicines Use and Safety
- Workforce
- Clinical Delivery
- Operational Delivery
- Transfer of Care

4. Governance: Medicines Use and Safety

The safe and effective use of prescribed medicines and devices is essential to the successful delivery of patient care in virtual wards, particularly in the context of working with a range of partners across a system in an integrated care model. Joint working enables people to receive integrated, patient-centred care and support. Medicines are a core element of patient care, that if not managed optimally could lead to patient harm, delayed recovery, avoidable admissions, and waste of NHS resources.

Whilst service delivery and partners involved in the pathways will be locally determined, it is recommended that pharmacy service leaders are central to the design, planning and implementation of virtual ward services.[5] Design and planning should be conducted in collaboration with professionals across all sectors including acute trusts, community trusts and primary care. Such professionals include, but are not limited to:

- Integrated Care Board members,
- Chief pharmacists across the NHS,
- Relevant clinical pharmacy leads, operational pharmacy leads, medication safety officers, community pharmacy representatives,
- Multidisciplinary team colleagues such as medical, nursing, AHPs, virtual wards, digital, finance and contracting teams.

A formal structured risk assessment of the planned care pathway must be undertaken and reviewed at regular intervals to identify key risks and develop mitigations. Human factors science/ergonomics should be applied to the assessment of risks and risk management strategies. Examples include using the Safety Engineering Initiative for Patient Safety (SEIPS)[6] model, failure mode & effects analysis[7] and application of the hierarchy of controls[8] as advocated by the Healthcare Safety Investigation Branch. The assessment should focus on:

- Prescribing
- Medicines handling – including storage and preparation
- Supply and/or administration of medicines
- Therapeutic drug monitoring, where applicable
- Medicines optimisation
- Record keeping
- Transfer of medicines related information to and from virtual ward teams and between health and care staff
- Workforce provision
- Digital tools and technology
- Approach to learning and safety

In the event of a medicine related incident, reporting should be completed through the appropriate and approved local mechanisms. Provision should be made to collate, review and respond to patient safety event reports from across all the partner organisations in the system. This should include a process by which acute trusts, community trusts and primary care providers inform the wider system of the reported incidents. A group or committee with oversight of medicines/prescribing safety across the system should receive and review the reports and co-ordinate the response. This could be under the governance of the System Quality Group, Integrated Care System (ICS) Medicines Optimisation Committee or similar locally defined arrangement. The overall accountability for clinical governance would be with the nominated lead provider.[9]

The service is required to be safe, effective, caring, responsive and well-led.[10] Standard operating procedures should be in place to outline medicines-related processes, including details of the out-of-hours medicines/prescribing support provision. Training for the appropriate staff should also be made available to ensure competency. It is important that the prescribing and medicines policy of the lead organisation includes the prescribing, supply and handling of medicines requirements for virtual wards. It should also include solutions for transfer of information relating to medicines and the process of referring to members of the pharmacy, virtual wards team, primary care and other healthcare providers involved in the patients care. When developing these services, considerations should include workforce, digital enablement (supported by digital leads) and business continuity. It is recommended that virtual ward services use technology as an enabler to maximise staffing efficiency as well as provide clinical and operational benefits to patients, carers and staff.

The use of technology should be explored to improve care, particularly communications across the various teams and sectors providing the virtual ward services. This includes the use of electronic prescribing and supply mechanisms that support seamless transfer of care across systems and allow for safe and effective prescribing decisions to be made. For effective information flow and care delivery within virtual wards, investment into interoperability can facilitate joint working and integration into ICSs. Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged. In order to achieve interoperability, adherence to information standards such as DAPB4013: Medicines and allergy/intolerance data transfer[11] are required.

The technology used should be able to capture prescribing and supply data in relation to virtual wards. This in turn should enable the monitoring and improvement of safe and cost-effective medicines use. It is vital to have medicines related budgets assigned to these services.

5. Workforce

5.1 Integrated Care Systems

Virtual wards present an excellent opportunity for pharmacy teams across systems to work collaboratively to enhance patient care. Maximising the benefits of pharmacy professionals being deployed from across the system to provide seamless medicines optimisation for a virtual ward service is key. The impact on, and contribution from, acute trusts, community trusts and primary care including community pharmacy teams should be considered in the development of the service to support safe and effective care.

5.2 Leadership

To ensure safe and effective service provision, it is recommended that a senior pharmacy lead should be assigned to the virtual ward service to coordinate all the pharmacy service providers involved and ensure compliance with medicines regulations. The pharmacy lead role should be connected to professional colleagues across the ICS, provide senior clinical input and overall accountability for the pharmacy service. The pharmacy lead should be involved with service planning, quality improvement, management and clinical supervision of pharmacy professionals providing the service. It is critical to the service that the pharmacy lead is fully integrated into the multidisciplinary virtual ward leadership and operational teams.

Case Study: Clinical Pharmacy Leadership Role in Virtual Wards

In Leeds, pharmacy leadership has been instrumental in embedding pharmacy professionals into the wider MDT for the virtual ward (frailty) (VWF). We have worked with project and clinical leads to explore and improve medicines pathways for people on the VWF and demonstrate that pharmacy input is hugely beneficial for improving patient experience and outcomes. Initial work included process mapping prescribing, supply and administration of medicines for people on the VWF and then implementing new processes and pathways in conjunction with the MDT and other stakeholders across the city to provide optimum medicines outcomes for people.

Prescribing pathways on the VWF can be complex due to clinical staff working in different organisations and the use of different clinical systems. Developing and supporting the introduction of electronic prescribing via SystmOne and the Electronic Prescription Service (EPS) has streamlined prescribing and obtaining medicines in a timely manner. We have worked with our acute trust on processes for obtaining acute medicines that are difficult to obtain in primary care and for acute changes to multi-compartment compliance aids outside normal community pharmacy opening hours. Processes for prescribing, supply and administration of subcutaneous fluids have been developed and we have linked in with existing pathways for intravenous antibiotics and diuretics.

Having pharmacy staff embedded at all levels of leadership, from the daily MDT to the VWF steering group, ensures we are active collaborators in developing pathways, mitigating medicine-related risks and influencing future developments of the VWF.

Heather Smith, Consultant Pharmacist: Older People,

NHS Integrated Care Board (ICB) in Leeds, West Yorkshire ICB

5.3 Recruitment and Retention

Virtual ward pharmacy presents an opportunity to recognise the role of pharmacy and enhance the experience of pharmacy professionals. Systems are encouraged to consider the development of hybrid or rotational roles, which allow pharmacy professionals to experience new and different ways of working, in different parts of the system. This can help to expand the work portfolios of pharmacy professionals across different sectors, provide flexible working opportunities and support the retention of clinical professional talent within systems.

Business contingency plans need to be put in place to ensure continuity of virtual ward services. Given the emergence of a range of models for virtual care and wards, this is an opportunity for locally innovative approaches to building virtual ward pharmacy teams according to the needs of the local population.

Further supporting information for ICS leads: enablers for success: Virtual wards including Hospital at Home[12] outlines the relevant governance processes and provides examples of virtual ward staffing models.

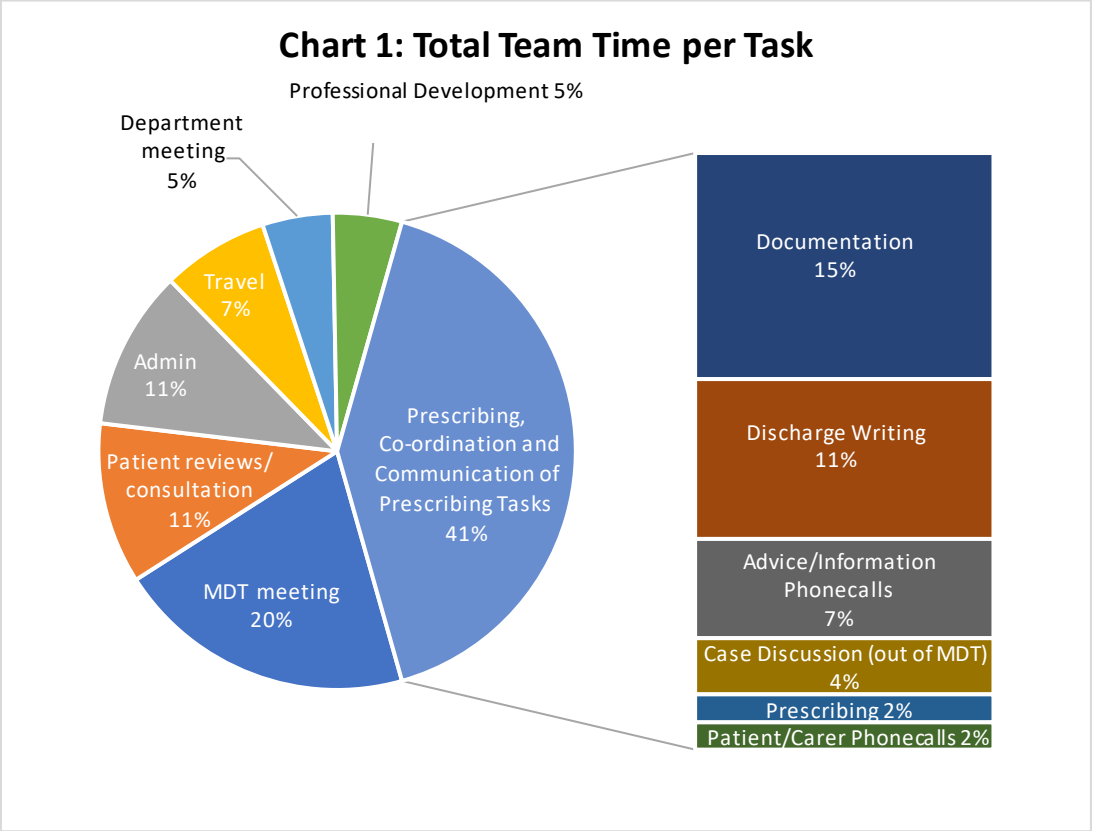
Case study: Pharmacy Skill-mix: Virtual Ward Frailty (VWF)

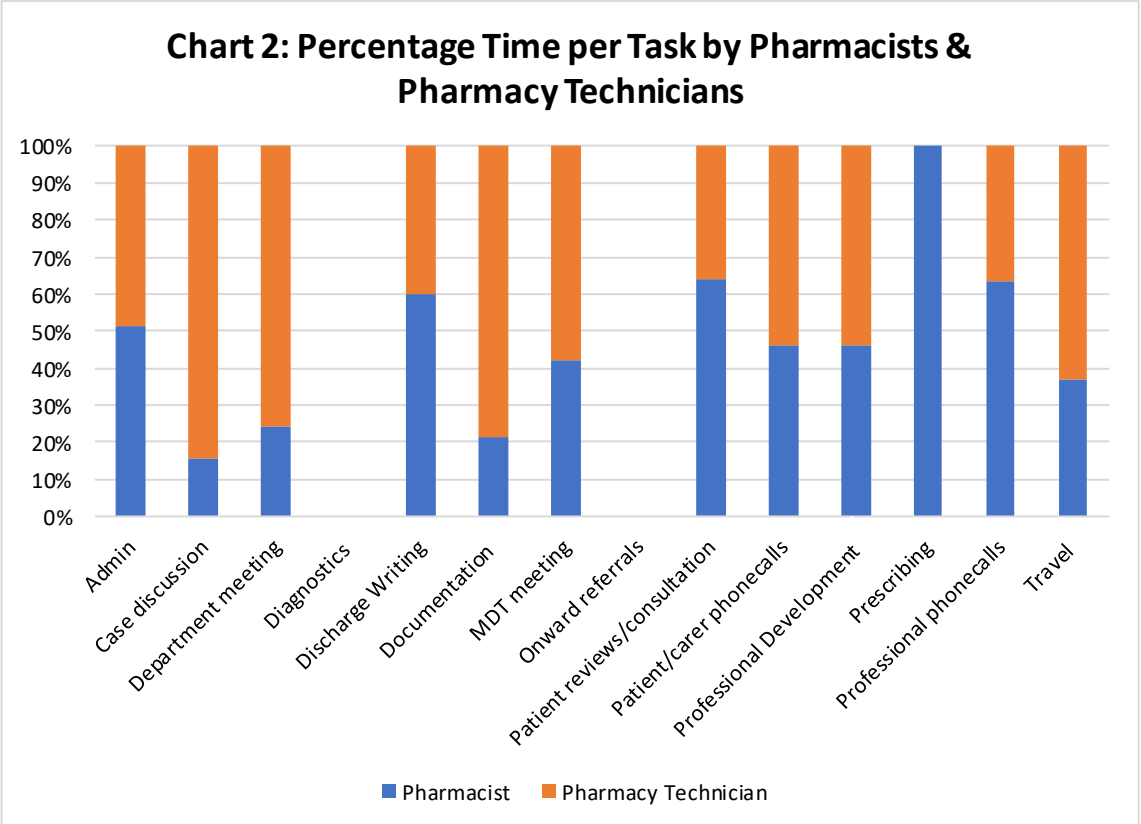
The VWF pharmacy team has been established at 1WTE pharmacist (band 8a/7) and 1WTE pharmacy technician (band 5). The pharmacy team's scope is to provide advanced pharmaceutical care through attendance at the daily MDT meeting, structured medication and/or adherence reviews, co-ordinating and communicating medication changes (including prescribing by pharmacists) and providing pharmaceutical governance and advice to support the wider VWF team.

A recent time and motion survey provided analysis of the working day by task type. The working day for all staff was dominated by four task types: pharmacy contribution (including prescribing, co-ordination and communication of prescribing tasks), MDT meetings, patient reviews and administrative tasks (chart 1).

Analysis of tasks by role (chart 2) showed pharmacists spent most of their time on advice/information phone calls, case reviews, discharge communication and prescribing. Prescribing is a key requirement for the pharmacists working in the team to prevent medication delays and errors. The single prescribing pharmacist was in work for 50% of the survey period, distorting the data. The prescriber spent an average time of 40 minutes per day prescribing (between 20-60 minutes). Co-ordination and communication of these prescribing tasks were recorded separately across a number of tasks (chart 1). These tasks were completed by the whole team and accumulated to over 40% of our task time.

The pharmacy team were not involved in diagnostics or onward referrals. Diagnostics is identified as an area to expand our team skill set in (pharmacists – clinical assessment skills, pharmacy technicians – clinical observations), to reduce duplicating patient visits across the wider VWF team.





Amy Vigar, Advanced Pharmacist Virtual Ward Frailty, NHS ICB in Leeds, West Yorkshire ICB

6. Clinical Delivery

Pharmacy teams are integral to the MDT and should play a proactive role in the entirety of the virtual ward care episode, ranging from medicines reconciliation at admission through to referral to community pharmacy for the Discharge Medicines Service (DMS). It is key to ensure the pharmacy team is embedded within the MDT delivering virtual ward services. Pharmacy teams should participate in virtual ward rounds, MDT meetings and patient reviews, as appropriate to the need of the patient. Pharmacy professionals should be proactive and develop strong working relationships with health and social care professionals in the virtual ward team, patients and carers. Ensuring links with social care teams, patients and carers can be particularly important in understanding challenging social circumstances for certain patients that may require adjustments to tailor their medicines support to their specific living arrangements. A personalised approach should be undertaken with a focus on addressing health inequalities.[9]

Pharmacy professionals' skills are central to medicines optimisation by addressing a range of pharmaceutical care needs for patients, such as prescribing or deprescribing, medicines reconciliation, medication review, timely medicine supply, antimicrobial stewardship, therapeutic drug monitoring, education for patients/carers and medicines advice to health and social care providers. Patients should be counselled on their medicines and be given contact details for further medicines-related queries. Building in pharmacist capacity for medication reviews to reduce medicines burden avoids patients taking unnecessary medicines and reduces problematic polypharmacy.[13] Tackling overprescribing, wastage of medicines, medicines adherence and particularly consideration of lower carbon medicines such as inhaler choice supports in delivering the 'Net Zero' NHS[14] sustainability plans.

Optimising the capabilities of the pharmacy workforce is essential to ensuring an appropriate skill-mix of generalist and specialist pharmacy professionals. For example, this may include Advanced Clinical Practitioners (ACP) undertaking clinical assessments, utilisation of independent prescribers and pharmacy technicians triaging, conducting medicines reconciliation, risk assessment and/or adherence reviews with patients and/or carers.

Nurses, pharmacists and AHPs can prescribe, once qualified as an independent prescriber. Different types of prescribers hold different prescribing rights. Refer to The Medicines, Ethics and Practice[15] guide to identify which products each type of prescriber may prescribe.

Accessing medicines related information in a timely manner will be a consideration when in the patient's home alongside reliable access to the internet at the point of care. Commonly encountered clinical queries and links to resources are listed below:

- Medusa provides guidance on the preparation and administration of injectable medicines in adult and paediatric patients[16]
- Advice on using medicines safely and effectively in patients with swallowing difficulties[17]
- Stability of medicines outside of the fridge[18]
- Materials to support safe and appropriate supply, administration, monitoring and equipment issues for medical gases[19]

Case study: Medicines Optimisation in Patients Homes

In 2021 there were 2819 patients admitted to the three functions of the Oxford University Hospitals virtual ward services, CovidCare@Home, Complex Outpatient Antimicrobial Therapy and Hospital@Home. While it is not feasible to complete in person medicines reconciliations or medication review on all patients, targeting those patients who most benefit from it is important. These include:

- Elderly and frail patients, or those who receive home delivery of medicines from their local pharmacy. These patients often miss out on counselling on newly initiated medicines.
- Patients with multiple co-morbidities or complex polypharmacy regimens.
- Those admitted to the service with falls or acute kidney injury (AKI) where long term medicines are likely to be altered or stopped.

Around 65% of patients have at least one new medicine initiated during their Hospital@Home admission, therefore having an up-to-date and accurate record of their medicines is important. Completing medication reviews in patients' homes allows the practitioner to see how a patient is using their medicines. Often asking a patient to show you their medicines leads to an open conversation around their medicines use, including why they may have chosen to stop or not take some of them.

Our service liaises with our local primary care providers to rationalise or deprescribe long term medicines. This may include reducing the number of times a day a patient is required to take medicines; adjusting doses based on kidney function; stopping medicines that may be causing unwanted effects; or simply stopping medicines that patients no longer wish to take.

Sophie McGlen, Lead Pharmacist Ambulatory Care,

Oxford University Hospitals NHS Foundation Trust

Case Study: Bradford District and Craven working with the Digital Care Hub, Airedale NHS Foundation Trust to deliver a "Super Rota" virtual ward

During April 2020 to March 2022, the "Super Rota" brought together a multi-disciplinary team of clinicians from care home, secondary care and primary care backgrounds. The aim was to provide 24/7 escalation decision-making support to facilitate acute respiratory infection management as an alternative to NHS bedded care. During the COVID19 pandemic, the Super Rota provided clinical care to patients with escalating needs who clinicians assessed could be cared for at home, including:

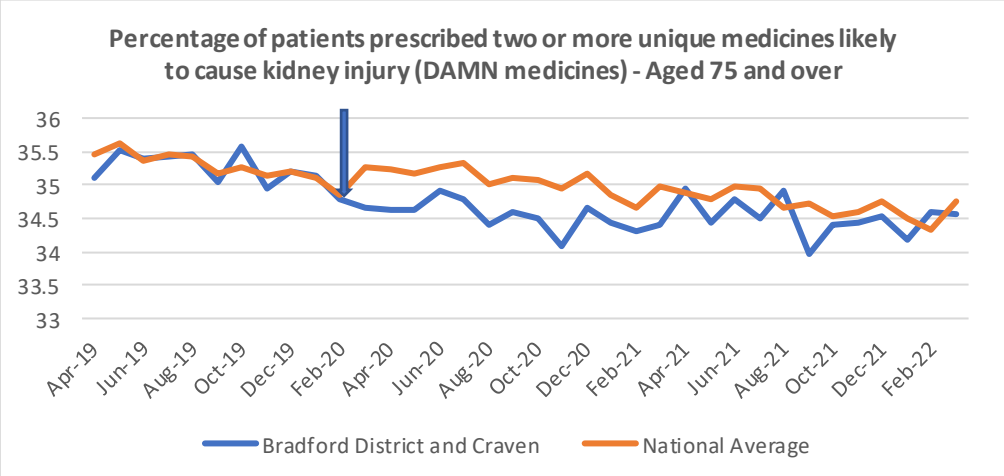
- Frail patients in care homes
- Domiciliary palliative patients within the last year of life
- Chronic obstructive pulmonary disease patients with a Clinical Frailty Score > 5

Pharmacy input included:

- Co-developing procedures and empowerment of multi-disciplinary teams to screen patients for medicines associated with AKI (e.g. diuretics, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, metformin, non-steroidal anti-inflammatory drugs (DAMN)) and apply sick day rules e.g. medicines temporarily stopped for two weeks.
- Co-developing a falls pathway including anticoagulant/antiplatelet review.
- Raising awareness of medicines exacerbating the presenting complaint.
- Governance for non-medical prescribing to improve patient access to medicines.
- Minimising risk from medicines administration errors.
- Facilitation of access to medicines in last days of life.

For some patients, clinicians chose not to restart medicines which had been temporarily halted during acute infection, as patient observations on recovery found they were not necessary. Critical to clinician confidence in deprescribing was 24/7 availability of experienced nurse oversight provided by the Airedale Digital Hub.

The chart below reflects how the introduction of a Super Rota led to a reduction in percentage of patients prescribed two or more unique medicines likely to cause AKI. This was reported from the Polypharmacy Prescribing Comparators accessed NHSBSA 13.7.22



Tracey Gaston, Head of Medicines Optimisation, Bradford District and Craven

Liz Butterfield, Airedale Digital Care Hub Lead Pharmacist

7. Operational Delivery

The operational and medicines optimisation service requirement in this setting is to ensure that all patients have sufficient medicines during their virtual episode of care which is clinically optimised, and that arrangements are in place for continuation of medicines when they are discharged. There is great emphasis on patients taking responsibility for their own care which can improve participation in shared decision making about their medicines with healthcare professionals.

7.1 Prescribing and supply of medicines

Most patients on virtual wards will be receiving medicines, with changes being made often as a response to an acute illness. This represents a risk to patient safety, and it is vital that patients get the right medicines, at the right time for them to achieve the safest and greatest health benefits. Safe prescribing practices for remote consultations are underpinned by guidance from regulatory bodies.[20] Clinical responsibility for prescribing should sit with those professionals who are in the best position and appropriately skilled to deliver care which meets the needs of the patient. Where available, independent prescribers should be embedded in the service to allow for timely prescribing, medicines optimisation and deprescribing.[21] Healthcare professionals must satisfy themselves that they can make an adequate assessment before prescribing for a patient via telephone, video, online or face to face consultations. Access to patients' shared care records facilitates this. Wherever possible, electronic prescribing should be the delivery of choice.

Case Study: Mobilisation of Virtual Frailty Wards with use of the Electronic Prescription Service

The mobilisation of virtual frailty wards across Mid South Essex (MSE) has supported people being cared for in their home, thus improving independence and reducing the pressure on acute services.

These community wards have access to medical records and the EPS allowing ease of prescribing. This was made possible as the prescribing team's details were shared with relevant Clinical Commissioning Groups (CCGs) and a doctor's index number request was processed with the NHS Business Services Authority. Once approved, each community provider's SystmOne team were able to enable prescribing rights for each medical prescriber granting access to EPS for the virtual frailty wards. With the use of digital technology and EPS the medical prescribers were able to review patients with the support of the MDT remotely and prescribe acute medicines where needed for patients. As prescriptions are sent electronically to community pharmacies, patients have timely access to their medicines. Where prescriptions are sent out of hours then the EPS enables prescribers to select pharmacies that are open as a one-off function, therefore patients do not go without medicines which is required urgently.

> The Virtual Frailty Wards have been designed to allow medical prescribers and independent prescribers to prescribe any acute medicines required. All regular repeatable medicines are supplied through the patients registered GP through the usual ordering processes. With the use of shared access to SystmOne all records are kept up to date thus allowing all healthcare professionals an accurate account of patient reviews and prescribing history.
>
> **Jagdeep Sira, Lead Pharmacist Community Health Services,**
>
> **Provide C.I.C**

The prescribing and medicines ordering processes in virtual wards should be integrated to ensure continuity of supply, avoidance of missed doses, efficiency and avoidance of wastage. Various prescribing and supply routes for medicines have been utilised in different settings depending on the organisation providing the service, such as:

- Prescribing on:
    - Secondary care Electronic Prescribing and Medicines Administration (EPMA) systems
    - Primary care clinical systems e.g. EMIS, SystmOne, etc.
    - FP10 prescriptions

The EPS, where available, aids with obtaining medicines closer to the patients' home through community pharmacy.

- Supply routes:
    - Source of medicines
        - Community pharmacy
        - Acute or community trust
            - Dispense
            - Stock e.g. on local site or grab bags
            - Pre-labelled pre-packs for commonly used medicines
    - Mechanism of supply
        - Collection by patient/representative
        - Delivery to the patient
        - Third party e.g. courier or post

For those medicines not normally sourced from community pharmacy, collaboration with other providers across the system is key to ensure timely access to medicines. Alternatively, agreements can be set up locally with community pharmacies to hold stock of medicines that may not be routinely stocked, however may be required regularly in the specific virtual ward pathway setting. Medicines that must be supplied via the hospital include:

- Medicines classified as "Hospital only".
- Initiation phase of medicines intended for shared care prescribing
- Clinical trial medicines

Case Study: pharmacy intervention in the palliative care interface

The 'right time and frequency' is one of, if not, the most important "rights" when it comes to making a difference in the holistic care of a palliative patient. It becomes the difference between a patient having a comfortable and positive death or an uncomfortable, agitated and possibly painful death.

The specialist palliative care team working within the hospice brought this issue to the attention of the pharmacy department and then rose to the challenge of ensuring timely provision of syringe driver medicines.

Viable options were mapped out for medicines access during and out of hours involving the hospital on-call pharmacy service, independent prescribers, and using stock from the inpatient setting for initiating the first syringe driver in the patient's home. We retrospectively audited the number of times a supply was made, the out of hours emergency care and how many times the set-up of a syringe driver happened in a 12-month period and used this information to gauge the size of the issue.

Furnishing prescriptions (via a specialist nurse prescriber, sometimes the GP or hospital consultant) was found not to be the rate limiting step. The dispensing of medicines and collection for delivery to the patient were found to be steps in the process most prone to issue. Looking outside of our routine practice, I reached out to other hospices around the country and discovered some (depending on their normal supply route) were using pre-packs of the most common medicines prescribed for administration via syringe driver in the palliative care setting; morphine, midazolam, hyoscine, glycopyrronium and cyclizine.

The use of pre-pack medicines was then implemented for use on home visits. The pre-packs were procured from our hospital manufacturing unit. This meant we could have bespoke medicine directions and control the direct supply chain more easily. Pre-labelled pre-packs mean that nursing staff can complete the patient's details on the label at the point of issue and then leave in the patient's home. This system ensures the patient's family/carers feel supported and that their immediate care needs are met. Further supply can then be sought through usual prescribing and supply routes, but the initial supply takes pressure off both the clinical team and those providing direct care to the patient at the difficult time.

Mary Rehman, Principal Pharmacist for Integrated Care and Community Services,

Ealing Hospital and Meadow House Hospice

The Medicines Supply Tool[22] can be consulted when there are challenges in obtaining medicine supplies. It provides the latest information on medicines shortages, actions to take, alternatives to use and expected resolution dates. Access requires registration with the Specialist Pharmacy Service (SPS) website.

An audit trail must be in place to track the full process from prescribing to receipt of the medicine(s) by the patient. The audit trail must cover the point at which the medicine and/or prescription leaves the pharmacy to the point at which it is received by the patient/patient representative or returned to the pharmacy (in the event of delivery failure). Where medicines are posted or couriered, there will be additional administrative and packaging requirements such as scheduling deliveries and supporting patients to track and trace deliveries.

Items should be stored appropriately at all points in the supply chain. Any items with specific storage requirements should be identified to select the most appropriate delivery method. Providers will need to comply with local policies and recommended standards for posting and transporting medicines and prescriptions.

Medicines requiring cold chain maintenance must be supplied via specialist services that ensure storage conditions to maintain safety, efficacy and quality. There must be adherence to the manufacturers' storage requirements. For medicines stock held for virtual wards within a healthcare setting environment, for example for 'stat' doses, the Professional guidance on the safe and secure handling of medicines[23] should be followed. The patient with the support of family and/or carers should be responsible for the storage of medicines in their home supported with directions on optimal storage conditions provided by healthcare professionals.

All prescription only medicines (POM) including controlled drugs in the patient's possession that have been prescribed, should be labelled with personalised directions.[15] Where possible, medicines can be supplied and administered under a Patient Group Direction (PGD) to pre-defined groups of patients, without a prescription. The health care professional working under the PGD is responsible for assessing that the patient fits the criteria set out in the PGD. Before a service is designed or commissioned using PGDs and before a PGD is developed, it must be ensured that PGDs are appropriate, legal, and that relevant governance arrangements are in place. Refer to NICE[24] and SPS[25] for further guidance on PGDs.

7.2 Medicines administration

Virtual wards promote independence and dignity. Many people want to actively participate in their own care, therefore, they should be encouraged to self-administer their medicines where possible, with the support of family and/or carers where needed. Patients self-administering medicines should understand when and how to take their medicines. This can include training for more complex regimens, e.g. to self-administer injectable medicines such as insulin or long-term intravenous antibiotics. The OPAT service at Homerton University Hospital[26] demonstrates an example of how a patient has been trained to self-administer intravenous antibiotics at home. To support the administration of intravenous medicines in the patient's home, risk assessments should be undertaken for the specific intravenous medicine to be used. This should involve considerations of whether monitoring requirements stipulated in the Medusa[16] guide can be conducted in this setting, whether there are trained staff available to administer the medicine and where supply of the intravenous medicine can be accessed.

The use of multi-compartment compliance aids (MCAs) is one adherence intervention. Although MCAs may be of value to help some patients with problems managing their medicines and maintaining independent healthy living, they are often not an appropriate intervention for all patients and many alternative interventions are available. In addition, there are many challenges when patients are acutely unwell, including a requirement for some medicines to be withheld. In such situations the ongoing need for a MCA should be reviewed as the use of original packs of medicines with appropriate support may be the preferred supply option in the absence of a specific need for a MCA as an adherence intervention. Refer to

Improving patient outcomes, The better use of multi-compartment compliance aids for further information.[27]

Patients should be responsible for the administration of their own medicines in the virtual ward unless a risk assessment indicates otherwise. Refer to Managing medicines for adults receiving social care in the community[28] for guidance on how patients can be supported to manage their medicines at home. Where medicines administration is being supported by a healthcare professional, there should be clear communication between the multi-agency providers and patient/carer regarding who is responsible for medicines administration. This includes ensuring that records are accurate and up to date to avoid duplication or omission of medicines administered. Before any medicines support is provided by a social care provider, commissioning and contractual arrangements need to be discussed, agreed and recorded as part of the local care planning process. This is to ensure that it is clear who is responsible and accountable for the decisions being made, and which providers will deliver each aspect of medicines support.[28]

A direction to administer[29] framework can be utilised to support the administration process. It is a written instruction from a prescriber that indicates the intent for a medicine to be given to an individual patient by a suitably trained and competent person.

8. Transfer of care

When patients are being discharged from virtual wards, changes to medicines should be documented on a discharge letter and shared with the patient, as well as all involved in their care, such as GP, specialist clinicians, community nurses, including new, stopped and changed medicines, along with associated monitoring requirements. Any dose or frequency changes should be documented and reasons for changes provided. A referral to the Discharge Medicines Service (DMS)[30] should be made. This is an essential service offered by community pharmacies at the point of discharge. The purpose of the service is to ensure better communication of changes to patient's medicines when they leave an acute care setting and to reduce avoidable harm caused by medicines incidents. Referral to DMS can be made by any hospital that has NHS patients including community trusts, mental health and specialist trusts. DMS offers an opportunity to improve safety and ensures better care by allowing discharged patients to be reviewed, their medicines reconciled and any medicines-related problems to be identified promptly.

Community pharmacy leaders should be invited to co-design the referral pathway into NHS DMS from virtual wards. Community pharmacy should also be offered support on actions and when to refer back to secondary care.

Patients on virtual wards represent a potential priority patient group for pharmacy teams working in primary care networks and general practice when considering structured medication reviews.

9. Further information

Resources on virtual wards can be found using the following link:

- UK Hospital at Home Society[31]
- Virtual wards, NHS England[32]

10. Glossary

Discharge Medicines Service (DMS)

The NHS Discharge Medicines Service (DMS) is an essential service provided by community pharmacy contractors. The service has been established to ensure better communication of changes to a patient's medicine when they leave hospital and to reduce incidences of avoidable harm caused by medicines. Any hospital that has NHS inpatients can refer into NHS DMS, including community trusts, mental health and specialist trusts.

Electronic Prescription Service (EPS)

The Electronic Prescription Service (EPS) sends electronic prescriptions from prescribers, currently in primary care, to community pharmacies.

FP10

A green NHS prescription form.

Hospital at Home:

Virtual ward hybrid service model that blends digital monitoring and **face-to-face care** to support patients with acute needs.

Interoperability:
The ability of two or more systems or components to exchange information and to use the information that has been exchanged.

Medicines support:

Any support that enables a person to manage their medicines. This varies for different people depending on their specific needs.

NHS @home:

NHS @home provides an important opportunity to enhance NHS services, utilising the best technologies available to enable personalised clinical support to be delivered virtually to people in the setting of their own home including care homes.

Patient Group Direction:

A Patient Group Direction (PGD) is a written instruction for the sale, supply and/or administration of medicines to groups of patients who may not be individually identified before presentation for treatment.

Virtual ward:

A virtual ward is a safe and efficient alternative to **NHS bedded care** that is enabled by technology. Virtual wards support patients who would **otherwise be in hospital** to receive the acute care, monitoring and treatment they need in their own home. This includes either **preventing avoidable** admissions into hospital or **supporting early discharge** out of hospital.

Appendix 1: Acknowledgements

Task and Finish Group members	
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We would like to thank the regional virtual wards and pharmacy teams for their contributions. In addition, a special thank you to the contributors that have shared case studies. We encourage others to continue to share good practice to add to the growing evidence base.

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Appendix 2: Quick reference guidance for developing and delivering pharmacy services for virtual wards

Theme	Good practice recommendation
Governance: Medicines Use and Safety	- Design, plan and implement virtual wards incorporating pharmacy services. - Carry out a formal structured risk assessment of the planned care pathway and continuously maintain. - Collate, review and respond to patient safety event reports from across all the partner organisations in the system. - Use prescribing mechanisms to support seamless transfer of care across the ICS, allowing for safe and effective prescribing decisions to be made. - Have standard operating procedures in place to outline medicines related processes. - Capture medicines prescribing and supply data in relation to virtual wards.
Workforce	- Assign a senior pharmacy lead to the virtual wards service to coordinate all the pharmacy service providers involved. The pharmacy lead role should ensure senior clinical input and provide overall accountability for the pharmacy service. - Contribution from hospital, primary care and community pharmacy teams should be included in the development of the service to support safe and effective care. - Develop virtual wards to build on existing services and collaborate within the pharmacy teams across the different sectors. - Have business continuity plans for virtual wards.
Clinical delivery	- Optimise the capabilities of the pharmacy professionals to ensure an appropriate skill-mix of generalist and specialist pharmacists including independent prescribers and pharmacy technicians. - Ensure timely access to clinical resources for staff working remotely.
Operational delivery	- Have access to shared records to support healthcare professionals to make an adequate assessment before medicines are prescribed. - Have access to an Electronic Prescription Service enabled system, where available. - Map out the processes involved in medicines prescribing, supply and administration in an integrated manner. - Have commissioning and contractual arrangements agreed and recorded as part of the local care planning process when medicines support is provided by a social care provider.
Transfers of care and medicines related information	- Communicate medication changes clearly between all care providers involved and with the patient/carer. - A referral to the Discharge Medicines Service should be made when the patient is discharged from the virtual ward.

Appendix 3: Case studies

Case study: Using elastomeric devices in Outpatient Parenteral Antimicrobial Therapy services

During 2021 the University Hospitals Birmingham Outpatient Parenteral Antimicrobial Therapy (OPAT) team administered over 1,000 antibiotic treatments using elastomeric devices to service users. Certain antimicrobials which are given three times a day whilst in hospital are administered via a continuous infusion device changed once daily in the OPAT setting. Use of continuous infusions in the OPAT service improves efficiency by reducing the number of daily contacts needed, therefore increasing the number of patients the team can manage. A key role of the OPAT pharmacist involves identification of suitable patients and optimisation of elastomeric infusers.

The OPAT pharmacist plays a pivotal role in coordination between the off-site supplier, trust procurement, the OPAT team and the patient in order to achieve the discharge plan. Communication is needed between all parties to facilitate multiple discharges or admission avoidance, and specialist knowledge is required to optimise stock use to minimise wastage.

Monitoring patients during therapy is paramount as well as liaising with community teams to ensure optimal infuser device use and to troubleshoot infuser or line related problems and to prompt oral switches when appropriate. Complexities such as dose adjustment based on renal function, therapy switch due to adverse effects or microbiology results are often encountered.

Virtual ward rounds allow dedicated time for multidisciplinary specialist teams to review patients together. Community teams, the OPAT consultant, pharmacist and nurses are all available at one time to discuss the progress of individual patients.

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Case Study: Vulnerable patients and access to medicines

The Care Quality Commission's (CQC) Medicines Optimisation Team engaged with chief pharmacists to understand how trusts were assuring themselves of safe medicines practice during the pandemic. Chief pharmacists told them they developed various solutions to ensure that patients continued to have safe access to medicines prescribed in outpatient clinics when they needed it, particularly for patients who were more vulnerable, such as those who were shielding. Examples included:

- Home delivery
- "Drive thru" set-ups (for both supplying medicines and monitoring them, such as blood tests)
- Using volunteers or re-deployed staff
- Sending prescriptions directly to patients for dispensing in community pharmacies
- Trialling the EPS from secondary care.

Many trusts had received positive feedback about changes to outpatient services and were looking to maintain them as business as usual.

Care Quality Commission, COVID-19 Insight Issue 9 March 2021.

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