Improving lives **together**
Norfolk and Waveney Integrated Care System

Norfolk and Waveney Integrated Care System

Management and the Administration of Continuous Subcutaneous Drug Infusions using a Syringe Pump and associated anticipatory medicines Policy - Adults

Consultation process and consultees

For the purpose of this policy development, stakeholder mapping took place and identified a wide variety of stakeholders and the best way to engage and consult with them. Information gathered during the consultation engagement process provided a rich source of data.

All stakeholders have had the opportunity to take part in the consultation and have their say.

Appropriate targeted engagement and consultation has taken place with relevant health care professionals via a task and finish group which are an engaged workforce who are aware of the need for change and are comfortable with the process taking place to achieve change.

The NHS is committed to ensuring a high quality, equitable service for the people of Norfolk & Waveney.

NHS Norfolk and Waveney ICB are working together with stakeholders to strengthen local good practice for patients who will require end of life care. The review has looked at both the hospital and community services where people receive end of life care. The key partners in this consultation are:

- Norfolk and Norwich University Hospital
- Norfolk Community Health & Care
- East Coast Community Healthcare CIC
- James Paget University Hospital
- Queen Elizabeth Hospital
- St Elizabeth's Hospice
- Norfolk Hospice
- Priscilla Bacon Lodge
- St Nicholas Hospice
- NHS Norfolk and Waveney ICB
- East of England Ambulance Trust
- GP's – Norwich, South, North, West, Great Yarmouth and Waveney
- Norfolk and Waveney Local Medical Committee
- Norfolk LPC
- Suffolk LPC

Document Control:

For use in:	Across all NHS Norfolk and Waveney ICS Providers
By:	All Registered Healthcare professionals and others involved with caring for patients who require a syringe pump
For:	Adult Patients who require symptom control via a syringe pump to deliver medication via the subcutaneous route and / or when required anticipatory medicines (e.g. McKinley T34 Syringe Pump)
Division responsible for document:	NHS Norfolk and Waveney ICB
Key words:	McKinley T 34 Syringe Pump, McKinley BodyGuard Syringe Pump, Pain relief, Medication, Symptom control
Name of document author:	Julie Noble & Françoise Price
Job title of document author:	NNUH Lead Nurse Specialist in Palliative Care Team ECCH Head of Pharmacy and Medicines Optimisation
Assessed and approved by the:	NHS Norfolk and Waveney CCG Clinical Policy Development Group and NHS Norfolk and Waveney CCG Governing Body
Date of approval:	July 2023
Ratified by or reported as approved to	To be completed: Norfolk and Waveney Palliative and End of Life Programme Board
To be reviewed by:	February 2026
Reference and / or ID No:	
Version No:	1.2
Description of changes:	Section 3.10 In use checks for CSCI updated as per Palliative Care Formulary (PCF); now states that checks should be documented within 1 hour of setting up the CSCI. List of monitoring requirements for CSCI expanded to reflect PCF guidance. PCF 2022 added as resource in section 10.1. Drug compatibility checker replaced palliativedrugs.com as a resource for checking compatibility of medicines in a syringe driver. Changes made by NC, Pharmacist, NHS N&W ICB.
Compliance links: *(is there any NICE related to guidance)*	NICE NG 31 Care of dying adults in the last days of life NICE NG 142 End of life care for adults: service delivery NICE NG 96 Care and support of people growing older with learning disabilities

	NICE Guidance on Cancer Services: Improving Supportive and Palliative Care for Adults with Cancer – The Manual
If Yes – does the strategy/policy deviate from the recommendations of NICE? If so, why?	No
Equality and Diversity Impact Assessment	The ICB and the Clinical Policy Development Group (CPDG) are committed to ensuring equality of access and non-discrimination as enshrined in the Health and Social Care act 2012. In carrying out its functions, the CPDG will have due regard to the different needs of protected equality groups, in line with the Equality Act 2010. This document is compliant with the NHS Constitution and the Human Rights Act 1998.
How does this policy reflect the values and principles of the NHS Constitution	The NHS seeks to improve the health and wellbeing of patients and communities and its staff through professionalism, innovation and excellence in care. Through this document, the NHS values have been adopted: working together for patients, patients come first in everything we do, respect and dignity, commitment to quality of care, compassion, improving lives and everyone counts.

Contents

1 Executive Summary

Syringe pumps (continuous sub-cutaneous infusions) enable the continuous delivery of medication to patients for whom administration via the oral route would be problematic.

The principles outlined in this policy apply to the use of all syringe pumps for the administration of subcutaneous infusions for adult patients receiving palliative care. .

The aim of the policy is to ensure safe and efficient practice across Norfolk and Waveney and enhance patient care. It outlines a set of common agreed principles across Norfolk and Waveney.

This is not a standalone policy and should be read in conjunction with associated standard operating procedures, organisational guidance and professional bodies' guidance.

2 Introduction

2.1 Background

Good palliative and end of life care are critical in ensuring good patient outcomes and experience.
Palliative and end of life care is provided by a range of clinicians in a range of settings.

The aim of this policy is to draw on best practice and agree some guiding principles for palliative and end of life care across Norfolk and Waveney Integrated Care System (ICS) to ensure patients consistently have a safe and positive experience.

2.2 Scope

This policy applies in all care settings within the Norfolk and Waveney Integrated Care System (ICS) where syringe pumps (also known as syringe drivers or a continuous subcutaneous infusion (CSCI)) are being used in patient care.

This policy applies to all health care professionals who have received training in the use of the syringe pump.

The principles of prescribing and drug use identified in this policy apply to all prescribers within the Norfolk and Waveney ICS.

This policy applies to patients aged 18 years and over (adults).

3 Responsibilities

3.1 Use of McKinley or another Syringe Pump

All registered clinical staff are accountable for ensuring that they use medical devices safely. This policy expects that all staff comply with the following:

- Staff must not use any piece of equipment unless they and their immediate supervisor are confident that they are competent in its use.
- Staff must attend relevant medical device training for those medical devices which have been designated as high risk by their relevant employing organisation.

- Staff must ensure that the syringe pump is fit for use (e.g. in service date; calibrated and clean) prior to setting it up including ensuring battery power is sufficient to run the pump over required time period.
- Staff who have not successfully completed training / been signed off as competent may only use medical devices under supervision.
- Staff must identify medical device training needs with their line manager, and this should formally be reviewed annually as part of the appraisal process.
- Staff must comply with Infection Prevention and Control (IPC) standards when using medical devices.
- When using medical devices staff must only use disposable / accessories that have been recommended by the manufacturer.
- Staff must ensure that all patients are given information about what to do in response to syringe pump alarms, and who to contact if the alarm sounds.

All staff operating the syringe pump MUST have demonstrated competence to do so. That is unless they are under supervision and the supervisor has the demonstratable competence required.

It is the responsibility of the employing organisations and the respective line managers to ensure that user training is received by the appropriate staff and documented in the staff record according to the organisation's policy and procedure.

All registered healthcare professionals are responsible for acting in accordance with their professional codes of conduct.

3.2 Prescribers

Prescribing will be by those legally entitled to do so and within their sphere of competence and in line with national guidance A Competency Framework for all Prescribers
Individual prescribers are responsible for prescribing within their sphere of competence and in line with their professional code of conduct.

Generalist prescribers will seek advice from specialist palliative care prescribers to ensure appropriate prescribing for complex symptom management where organ function is deteriorating; patient not responding to standard treatment and where high doses of opiates or other drugs are required to manage pain and other complex symptoms (seizures).

3.3 Non-medical Prescribers (NMP) e.g., Pharmacists, Nurses, Paramedics

All **non-medical independent prescribers** (NMIP) must only prescribe within their sphere of competence and in line with their professional bodies' guidelines.
They will only prescribe drugs that they can legally prescribe independently and in line with agreed formularies. See British National Formulary (BNF) Non-medical prescribing guidance.

Nurse and pharmacist NMIP able to prescribe, administer, and give directions for the administration of Schedule 2, 3, 4, and 5 Controlled Drugs. This extends to diamorphine hydrochloride, dipipanone, or cocaine for treating organic disease or injury, but not for treating addiction.

Other NMIP may either not be able to prescribe controlled drugs or only limited ones. This may change when regulations are amended.

Non-medical supplementary prescribers will only prescribe in accordance with the agreed clinical management plan for an individual patient and with that patient's agreement.

Prescribing and administration should in general remain separate activities i.e. non-medical prescriber should not prescribe and then administer the drugs.

3.4 Syringe Pumps

The Norfolk and Waveney Palliative and End of Life Programme Board supports the use of the following two syringe pumps, for use in adults across the system: the CME McKinley T34 Pump and the McKinley BodyGuard Pump. This is to reduce variation in practice, reduce training requirements and decrease risk of mistakes. If a provider feels it necessary to explore purchasing an alternative model of pump this should be brought to the attention of the Palliative and End of Life Programme Board for further consideration.

Both pumps are small, portable battery-controlled devices which will administer medications by continuous subcutaneous infusion over a period of time (usually 24 hours).

Each syringe pump has a unique identifier (an individual number) which identifies both the pump and the organisation to which it belongs. Most organisations have a further unique identification process by ensuring the first LCD display screen shown when the pump is switched on details who the pump belongs to.

Every endeavour **must** be made to ensure that each syringe pump is returned to its owner when no longer required. All organisations commit to ensuring syringe pumps are returned and during periods of increased demand will commit to mutually aiding other Trusts by loaning pumps. The organisation wishing to borrow a pump should be responsible for arranging collection and return of the loaned pump.

The Norfolk and Norwich Hospital has 10 pumps which will be available for loan. Any organisation borrowing one of these pumps will sign a disclaimer to say they take full responsibility for the collection, loan, care and return of the pump.

All syringe pumps should be placed in a lockable box when they are in use with a patient. The lockable box should be supplied with the syringe driver.

Care must be taken to ensure the correct battery is used, for both the CME McKinley T34 Pump and McKinley BodyGuard Pump, 9V/+6LR61 Duracell Plus battery is recommended by the manufacturer (2020 notice). For other pumps please follow manufacturers recommendations.

3.5 Maintenance

Each individual organisation will be responsible for ensuring their syringe pumps are maintained in accordance with the manufacturer's instructions (CMC Medical Operation manual for theT34) and are regularly serviced 12 monthly (CME 2019) by either CMC Medical service centre or a qualified biomedical technician trained and certified by the manufacturer (CMC Medical).

3.6 Ordering and returning syringe pumps

Each organisation will have a robust procedure for ordering, returning and what to do if a patient is transferred to another clinical setting with a syringe pump. See relevant organisational Standard Operating Procedure (SOP).

Please refer to each organisation's process for obtaining and returning pumps to the place of origin.

3.7 Discharging a patient with a syringe pump

Each individual organisation's procedure for supplying and returning pumps when a patient is transferred to another organisation must be followed. All patients being discharged into the community MUST have their syringe driver locked into a lockable box. All district nurses have keys to the boxes.

The transferring organisation should have its own information leaflet for patients and carers/family, and this should be given to the patient on transfer.

It is essential that community provider organisations are notified that the patient is being discharged and requires support to manage and care for their syringe pump in the community. All patients being discharged into the community must have their syringe pump and when required (prn) medication for break through doses prescribed onto a community chart. The patient must be discharged with a supply of medicines, diluent (at least 4 days) and the community drug chart. Failure to do so may cause delay in treatment and distress to patient, family, and carers.

It is the responsibility of the discharging medical team to ensure the patient is discharged with a community drug chart completed with an up-to-date syringe pump prescription and dose specific anticipatory medications. The community drug chart may be completed by a prescriber qualified to do e.g., nurse/pharmacist NMP. All community drug charts leaving an acute Trust or community hospital should be checked and authorised by a pharmacist/or equivalent prior to the patient's discharge.

Consideration should be given to referring the patient to the community pharmacy discharge medicine service. See appendices (10.8).

3.8 Care Homes

When a patient is being transferred into a care home with a syringe pump it is essential the care home receives a telephone call from the transferring clinical team to ensure they have the equipment to care for the patient and they know how to return the syringe pump as soon as possible. Not all care homes have keys to lockable boxes.

3.9 Routine care of syringe pumps

Individual clinicians using syringe pumps are responsible to ensure that the devices are fit for purpose before commencing the syringe pump and during its use with the patient.
Key things re: syringe pumps

- Do not immerse in any solution (including cleaning solutions)
- The patient must be advised not to bathe or shower.
- The pump must not be exposed to excessive heat, moisture, humidity
- The pump must not be operated near high-energy radio-frequency emitting equipment such as electro-surgical cauterising equipment.
- Pumps delivering medication should not be exposed to sunlight

Clean in line with manufacturer instructions. For CME McKinley T34 wipe the external pump surface by using disposable wipes impregnated with isopropyl alcohol (IPA) 70%, to minimize pump exposure to excessive quantities of liquids (urgent field safety notice from

the manufacturer – mms-19-1564 2019). The wipes will leave no residue therefore the surface will dry quicker.

All pumps and lockable boxes must be cleaned prior to use and prior to returning to avoid any cross contamination

Always follow manufacturer's cleaning recommendations

CME Ltd[1]. Recommends using alcohol sprays and wipes to decontaminate the lockbox.

3.10 Monitoring of the infusion whilst in progress

All patients receiving medication subcutaneously via a syringe pump should be monitored regularly and a record kept of this monitoring. This includes checking the CSCI and keeping records of these checks. The Palliative Care Formulary (PCF) states that checks of the CSCI should be documented **within 1 hour** of setting up the CSCI. The Royal Marsden Manual for Clinical Nursing Procedures (2021) recommends 4 hourly recorded monitoring for inpatients. This should include:

- General condition of the pump and if applicable the lockable box
- General appearance of the solution in the tubing and syringe
- Is the device still working?
- The date, time, rate, volume of infusion remaining.
- Is the correct rate still infusing? Is the infusion running to time?
- Battery level
- Pump lock
- Flashing light to ensure its working
- The syringe, line and skin site
- Effectiveness of infusion by monitoring the symptoms experienced by the patient – including pain, nausea and vomiting, breathlessness, secretions, agitation/distress

In the community the above should be monitored at each visit.

3.11 Medicines Reconciliation

Medicines reconciliation is the process of identifying an accurate list of a person's current medicines and comparing them with the current list in use, recognising any discrepancies, and documenting any changes, thereby resulting in a complete list of medicines, accurately communicated. The term 'medicines' also includes over-the-counter or complementary medicines, and any discrepancies should be resolved. The medicines reconciliation process will vary depending on the care setting that the person has just moved into – for example, from primary care into hospital, or from hospital to a care home. (NICE NG 5 Medicines Optimisation).

Medicines reconciliation must take place whenever the patient transfers between care settings or organisations and prior to any transcribing taking place.

Medicines reconciliation is not a medication review.

[1] https://www.bd.com > guides > infusion > CME

Organisations should ensure that medicines reconciliation is carried out by a trained and competent healthcare professional ideally, a pharmacist, pharmacy technician, nurse or doctor with the necessary knowledge, skills and expertise.

3.12 Monitoring and Review of this policy

Individual organisations will be responsible for ensuring the appropriate monitoring and auditing of the use of syringe pumps in accordance with their local requirements. Monitoring should include:

- Any incidents reported regarding the syringe pump
- Compliance with this policy
- Compliance with relevant SOPs
- Prescribing and administration
- Documentation

This policy will be reviewed annually or sooner if there are any changes to national guidance or following the outcome of an investigation into any clinical incidents.

4 Indications

The main indication for initiating a syringe pump is that the patient is unable to take medications orally or symptoms are not controlled with orally or topically administered medication.

- Persistent nausea and vomiting.
- Dysphagia: intermittent or continuous.
- Severe weakness and difficulty swallowing.
- Patient request – large number of oral medications.
- Intestinal obstruction.
- Diarrhoea.
- Severe uncontrolled pain.
- Diminishing level of consciousness.
- Malabsorption or suspected malabsorption of oral medication.
- Severe stomatitis.
- Head and neck surgery / disease. (Dickman et al 2016)

Advantages	**Disadvantages**
Good symptom control due to constant therapeutic drug levels over 24 hours	Potential source of infection
Sub cutaneous route more comfortable than intramuscular route, especially for cachectic patients and less invasive than intravenous route	Skin site reactions
Does not restrict mobility and independence - acceptability	Skin sites can be problematic for emaciated patients or those having long term therapy or irritant drugs

Reduced need for injections as control of multiple symptoms is often possible with a combination of drugs that can be mixed in one syringe	May imply imminent end of life for some patients and carers, especially if adequate explanation not given
Usually only requires refilling once a day unless prescription changes	May need regular review and change if symptoms not controlled

Syringe pumps will only be initiated where there is a clear clinical indication, and this is recorded in the patient's clinical record.

Anticipatory "when required" drugs **must be prescribed alongside** syringe pump drugs. These drugs may be administered via any appropriate route most commonly orally or by sub-cutaneous injection.

Before initiating a syringe pump all possible reversible causes for symptoms must be excluded.

If a drug is being tolerated and absorbed by the oral route, but is not controlling the patient's symptoms, then the use of equivalent drugs via a syringe pump will make no difference, and the same side-effects will be experienced.

Please review the dose and type of medication.

Note: there is no requirement for a minimum number of "when required" doses to be administered prior to considering a syringe pump. The decision to start a pump is based on clinical indication and symptom management.

4.1 Considerations

A syringe pump must not be seen as the solution to all problems. The patient and symptoms must still be regularly assessed and both drug and doses adjusted accordingly.

All patients with a syringe pump should be reviewed every 24 hours and the patient's prescription must be adjusted in line with the control of symptoms and/or when required (prn) medications required in the previous 24 hours.

Need to anticipate the patient's requirements over 24 hours noting that exacerbation of symptoms may necessitate more injections so these must be prescribed as a "PRN" when required. PRN medications should be titrated in accordance to need and doses of medications within the syringe pump (e.g., if morphine 60mg is in the SD 2.5 mg will be a too small a dose (as it is usual practice to give one-sixth of the total 24-hour subcutaneous infusion dose as breakthrough) it will need increasing to 10mg)

Time needs to be given to explaining the use (i.e., understanding why) of a syringe pump to the patient, family and carers to avoid fear and anxiety surrounding pump use as it may be

believed to be seen as a tool of last resort or imminent death. Consent will be required to commence treatment with a syringe pump.

1. Prescribing for Syringe Pumps and Anticipatory Drugs

Prescribing of drugs will be tailored to meet the individual needs of the patient.

Prescribing should follow a systematic approach e.g. EEMMA

Evaluate impact of symptoms on patient and family/carer

Explain before starting treatment what is going on to patient and family/carer

Manage the correctable including using nondrug options

Monitor impact of treatment frequently and adjust accordingly

Attention to detail do not make assumptions and actively listen to patient (or non- verbal cues) and family/carer

Caution must be exercised when prescribing where there is organ failure (e.g. liver or kidneys) and in the frail and elderly as the pharmacokinetics of the drug will be altered.

All patients discharged out of an inpatient area must have a community drug chart fully completed with their syringe driver and anticipatory medications. This can be written by any prescriber qualified to do so but must be checked and authorised by a pharmacist before discharge

A holistic approach, including non-drug measures to control pain and other symptoms, must be taken.

Further guidance can be found in the appendices.

Note: In the event of a syringe pump not being available the patient should be initially managed with "prn" medicines or alternative routes considered. See individual organisations' policies.

See appendices (10.7)

5 General Principles

Opioids administered via a syringe pump will not give better analgesia than those administered orally, unless there is a problem with enteral absorption.

Quantities prescribed will be sufficient to meet the needs of the patient balanced with the imperative to reduce waste. Ensure **at least 4 days' supply** is prescribed on maximum specified dose. Note that prescribers must be mindful of where access to supply may be limited due to either for example time of day or national bank holidays. This may mean that more than 4 days' worth is prescribed.

Start with the lowest effective dose and titrate as clinically indicated.

Dose increments should typically not be more than 30-50% of total daily dose.

Care must be taken when converting oral doses of opiates to sub-cutaneous doses.

Continue existing transdermal patch if it is proving effective.

For opioids the breakthrough dose is usually equivalent to 1/6 of the total 24-hour dose though a smaller dose may be used if it found to be effective.

The prescriber must discontinue previous oral medication that will now be administered via a syringe pump to prevent drug errors, unless there is a clear rationale for using oral breakthrough medication.

⚠ It is good practice to review and discontinue any medication no longer necessary in light of the patient's prognosis e.g., statins if the patient is within days of dying

Ensure appropriate starting dose is prescribed in accordance with patient's current medication and when required (PRN) doses. Starting doses must not be written as 0mg. Ensure that doses for controlled drugs are written clearly. All prescriptions must have the name and signature of prescriber. The total quantity to be supplied on a prescription must legally be written in words and figures.

For PRN drugs it is a requirement to ensure the appropriate maximum dose in 24 hours is stated. Note this dose excludes the contents, if applicable, of the syringe pump.

Ensure the diluent and volume is specified. Check compatibility of mixing and the most appropriate diluent prior to prescribing using:

- Palliative Care Adult Network guidelines Plus
- Drug Compatibility Checker which is accessed through a MedicinesComplete account.
- For unusual drug combinations please contact East of England Medicines Information Service (East Anglia 01473704431).

All prescriptions should be clinically screened by a pharmacist wherever possible e.g., this will happen at point of dispensing in community pharmacy or by screening prescription charts in in-patient units.

Prescriptions for schedule 2 and 3 controlled drugs are valid for 28 days from the date they are signed.

⚠ Note syringe pump charts in the community do not need to be re-written every 28 days as they are NOT a legal prescription but an administration record. However, if a patient has not needed any of the prescribed drugs for a period of time, then the patient must have a clinical assessment to ensure clinical appropriateness of the prescribed drugs. Any medication prescribed for a patient must be reviewed by a prescriber monthly as a minimum to ensure that it is still clinically appropriate. This must be documented on a patient's electronic record and where possible on the syringe driver chart, (name of prescriber, time and date.) This review could be completed by any prescriber involved in the patient's care. This is particularly important for anticipatory medicines which have not been used previously.

In the community NHS FP10s are the legal prescription and the document against which supply is obtained.

In-patient units currently use paper/card syringe pump charts as both prescription and record of administration.

In the community the syringe pump chart serves as a medicine's administration record.

5.1 Syringe pump chart

All handwritten syringe pump prescription charts must be clearly legible. Any errors must be clearly crossed through, signed and dated by the prescriber. Dose changes and amendments must be made on a new line/ section.

Ensure that all drugs to be combined in the same syringe pump are written in the same section of the chart, not as separate signed entries. The chart allows for up to five drugs to be prescribed and administered in one syringe pump. This is to allow for dexamethasone to be prescribed to minimise site reaction.

If medicines are given over TWO or more syringe pumps, the second pump must be prescribed on a separate page of the chart and the chart is annotated on top of the individual pages as **syringe pump 1 of 2 and 2 of 2.**

If more than one chart is in use the charts are annotated on top of page 1 as chart 1 of 2 and 2 of 2 to avoid confusion.

The indication for each drug should be specified in the 'indication' column.

No verbal amendments to controlled drug prescriptions are acceptable. The prescriber must re-write and sign the chart, if prescribing remotely, this must be sent electronically, and local policy followed.

Anticipatory, breakthrough and when required medications must clearly state dose; indication; route, dose interval and maximum dose in 24 hours. When a drug is written up to be given either orally or by subcutaneous injection it must be made clear that the subcutaneous injection should only be used ONLY when the oral route is not available and that the maximum dose in 24 hours is the combined total administered by whichever route.

5.2 Drugs for the syringe pump

The drugs used in the syringe pump will be tailored to the individual patient.

First line choices of drugs for syringe pumps are:

- Pain: Morphine
- Agitation and terminal restlessness: Midazolam – or Levomepromazine when Midazolam is ineffective.
- Nausea and vomiting: Levomepromazine
- Nausea and vomiting and/or hallucinations: Haloperidol
- Respiratory tract secretions: Hyoscine butyl bromide (Glycopyrronium bromide is an alternative)
- Breathlessness: Morphine; Midazolam

5.3 Anticipatory drugs

Drugs should be available on a when required basis for symptom control.

Patients in the community who are approaching end of life (i.e., GSF Amber and Red) must have a supply of anticipatory medicine.

The initial dose when prescribing Anticipatory Medicines must be clear.

First line choices are the same as for syringe pump (above).

⚠Symptom control and use of anticipatory drugs in the previous 24 hours, should be reassessed at least daily to inform titration of medicine in syringe pump.

In Norfolk and Waveney, the lay/ family carer administration of sub-cutaneous "when required medication" for patients at the end of life is supported to enable patients to have access to timely medication to manage their symptoms. Please refer to separate policy on lay carer administration.

If usual drugs/ routes/ syringe drivers become unavailable due to extreme circumstances e.g., Covid-19 pandemic alternative drugs / routes will need to be used in accordance with local/national guidance.

5.4 Specialist Drugs

There are several drugs that are used by specialist palliative care clinicians.

Ketamine, methadone and alfentanil are specialist use drugs. The specialist palliative care teams must be involved if considering using any of these. They should only be prescribed by specialists or by generalist where there is a clear mutual agreement (wider definition of shared care) in place between the specialist and the generalist.

⚠Clear guidance on dose conversions, dosing and special considerations should be given to the generalist by the specialist prior to any prescribing.

5.5 Dose conversion

There will be variation in response to different opioids between individual patients so all dose equivalences are only approximations and may not be right for every patient. Best practice guidelines recommend converting all doses to morphine equivalent as a first step. Patients must be monitored after any change in opioid and doses titrated accordingly.

⚠Incomplete cross tolerance (tolerance of currently administered opioid that does not extend completely to other opioids) means that a dose reduction of 25-50% of the new opioid may be required.

Dose conversion charts are available (see appendices 10.4) however these dose conversions are approximations and thus the dose needs to be chosen cautiously and individualised to the patient and their organ function (liver and kidney).

Where a patient is on high doses of oral or transdermal opiates advice should be sought from the specialist palliative care team regarding any dose conversion for syringe pump administration. **Note that standard practice is to continue the transdermal opiate patch**

at the current dose and add further opioid to the syringe pump according to PRN doses administered.

5.6 Mixing Drugs

Mixing of drugs is defined as “the combination of two or more medicinal products together for the purposes of administering them to meet the needs of a particular patient”.

Mixing will only be undertaken in a near-patient situation for immediate use i.e. setting up the syringe pump. The prescriber must clearly identify which drugs and diluents should be mixed and in which doses.

Drugs that are to be mixed in a syringe pump must be compatible with each other.

Compatibility must be checked prior to prescribing and resultant mixture at the point of administration must be checked for particulate matter arising from for example precipitation of solutes. Palliative Care Adult Network Guidelines Syringe Driver drug compatibility data (click to access)

The syringe in which the drugs are mixed must be clearly labelled with the date and time of preparation and contents (drug; dose; diluent). Care must be taken to ensure the label does not interfere with the mechanism of the pump.

Mixing of drugs where one is not a vehicle for the administration of the other de facto creates an “unlicensed” medicine. The MHRA has issued guidance for healthcare professionals prescribing, preparing and administering mixes. See Medical and non-medical prescribing: mixing medicines in clinical practice

5.7 Unlicensed and off-license use of drugs

Prescribers must be satisfied that there is a sufficient evidence base and/or experience of using the unlicensed medicine or off label use of the medicine and that no suitable licenced alternative would meet the patient’s needs.

Non-medical prescribers should be mindful of any limitations to their legal ability to prescribe unlicensed or off-label medicines.

Unlicensed medicinal products: products that have not received a Marketing Authorisation in the UK. These may be imported, or alternatively produced as “Specials” in the U.K. by large reputable companies, small independent companies or within hospital pharmacies.

Off-licence Prescribing: Licensed products being used outside of the terms of the Marketing Authorisation. This includes prescribing for unlicensed indications, at higher than licensed doses, by routes and to age groups not included in the licence, etc. Also included are those situations where the form of a preparation is changed before administration (e.g., tablets need to be crushed, capsules opened, etc.).

There are clinical situations when the use of unlicensed medicines or use of medicines outside the terms of the licence (i.e., ‘off-licence’) may be judged by the prescriber to be in the best interest of the patient based on available evidence.

However, all healthcare professionals who can prescribe off-licence or unlicensed medicines must do so within:

- their individual clinical competence

- the professional codes and ethics of their statutory bodies

The responsibility that falls on healthcare professionals when prescribing an unlicensed medicine or a medicine off-licence may be greater than when prescribing a licensed medicine within the terms of its licence. Prescribers are professionally accountable for their judgement and are accountable and personally responsible for any adverse consequence arising from the use of unlicensed or off-label use of medicines.

Prescribers should pay particular attention to the risks associated with using unlicensed medicines or using a licensed medicine off-licence. These risks may include adverse reactions; product quality; or discrepant product information or labelling (e.g. absence of information for some unlicensed medicines, information in a foreign language for unlicensed imports, and potential confusion for patients or carers when the patient information leaflet is inconsistent with a medicine's off-licence use).

Informed consent must be obtained and documented wherever possible. If a patient is unable to consent to a necessary treatment, document that it has not been possible to obtain consent. In such cases a clear rationale must always be documented. The patient (or relative) must be given sufficient information about the drug and the nature of the treatment to make sure they are well placed to make an informed decision.

6 Communication

6.1 Patient and Family

Commencing medication via a syringe pump (continuous subcutaneous infusion) is routine for many clinicians however it can be a new and concerning experience for the patient and their family. Any healthcare professional prescribing a syringe pump should ensure they have an open, honest, and sensitive discussion with the patient and/or those important to them regarding the implications of commencing a syringe pump particularly if it pertains to approaching end of life. This includes a discussion regarding the side effects of using the medications to be administered.

Each organisation is responsible for providing appropriate and informative written information to give to patients and their families/carer.

The following information should be given to patients and their families prior to commencing a syringe pump or when discharged with a syringe pump:

- What a syringe pump is and why it is being used
- Information about the medications to be used
- Risks and benefits
- The patient and/or family; they should be given time to express any concerns including any past experiences with syringe pumps
- Once informed consent (GMC 2020, NMC 2015) has been obtained the syringe pump may be commenced. If the patient is too unwell to make their own decisions the healthcare team can make a decision in the patient's best interests (Mental Capacity Act 2005, section 4). All organisations will have a consent policy which can be referred to. It is advisable to discuss and document this decision with the family/carer

- If a patient is at home or being discharged home further information in a written format leaflet needs to be included:
    - How to check the syringe pump is working correctly and what to do if there are any concerns including if the pump should alarm
    - Ensuring the pump is not exposed to water during bathing/showering.
    - Ensuring the pump is not exposed to sunlight or excessive heat which can affect the medication being delivered
    - Who to contact for support and advice for all times of the day, including telephone numbers to call – district nurse, carer's helpline
    - What will happen when the syringe pump needs replenishing and who will be attending to do this
    - Any information given should contain telephone numbers in case of need.

6.2 Healthcare Professionals

Written and verbal communication is paramount within teams and between different health care settings.

Documentation is the principal clinical information source to meet legal and professional requirements and a clear and contemporaneous record regarding the syringe pump must be maintained. This can be written or electronic. The importance of maintaining a document record of care cannot be underestimated including.

- Signing of the prescription chart
- A record of checks of the CSCI which should be documented **within 1 hour** of setting up the CSCI. In addition to a record to show that checking of the infusion occurs 4 hourly in inpatient settings and daily in patient's own home has occurred.
- If the patient is at end of life and the Individual Plan of Care has been commenced completion within the relevant section of the care plan
- Within the patient held records
- The patient nursing/medical notes (electronic or paper as applicable)

Information should be shared verbally and written when a patient moves from one care setting to another, and arrangements should be followed to promptly (within 24 hours) return the syringe pump the patient has been given in the first care setting to its owning Trust. This is of paramount importance to ensure the flow of equipment in all Trusts and is the responsibility of the first person attending the patient and their syringe pump in the new care setting.

Any health care professional (HCP) attending a patient for the first time with a syringe pump from another care setting should be prepared with their own providers equipment so the pump can be swapped. All syringe pumps should be returned to their owning organisation carefully packaged in Jiffy bags via the internal post (available at GP surgeries and/or Care Homes and in all inpatient settings).

When a patient leaves hospital with a syringe pump the following information should be shared with the receiving team including:

- That the patient has a CSCI via a syringe pump
- Why the syringe pump was commenced, and any concerns raised by the patient and family.
- The patient has an up-to-date prescription
- The medication has been sent with the patient

- What time the syringe pump needs replenishing – where possible the syringe pump should be replenished as close to discharge as possible.

7 Education

Registered healthcare professionals and nursing support workers must be appropriately prepared and work within their scope of practice for the people who use services, their families and the population they are working with**.** **Standard 10 the RCN Nursing Workforce Standards. Supporting a safe and effective workforce (May 2021)**

7.1 Responsibilities

Employers are responsible for ensuring that all staff using medical devices are appropriately trained.

All health care professionals and support workers have a personal responsibility and accountability to ensure they receive training in the safe use/observation of any medical devices they need to use.

All registered health professionals (Registered Nurses, Doctors, Paramedics, Pharmacists) undertaking the setting up and replenishing of syringe pumps, or providing care to patients with syringe pumps, must ensure that they are competent and confident and have the required level of knowledge and skills. (NMC 2015, HCPC, 2018, GMC 2013, RCN 2021)

All registered healthcare professionals are accountable for their practice and should never carry out any practice they are not competent to do. They must ensure their practise is safe and evidence based.

All healthcare professionals (this includes all registered staff, Assistant Practitioners, and student nurses) who undertake monitoring of syringe pumps must receive training and be assessed by a registered nurse to be competent to accurately observe and record their observations.

All staff involved with using syringe pumps should ensure their competence by reviewing them every TWO years. Competence should also be reviewed if staff have had a break in practice or use of more than 6 months.

The employing Trust should ensure they maintain a record of staff who are competent to use and care for a syringe pump and the relevant equipment. Staff should highlight in their PDP any training requirements that are unmet.

Any staff who do not regularly use a syringe pump (have not used one in over 6 months) should seek support from a colleague to undertake the care and use of one and revisit their competencies.

7.2 Training

There are various methods of training available to all healthcare professionals and each Trust/organisation is responsible to provide this education and have a set programme. This is to ensure a competent workforce for the delivery of care associated with syringe pumps and continuous subcutaneous infusions for patients who are palliative or at end of their life.

Organisations need to be mindful of the training needs of those clinicians new to prescribing and using syringe pumps or those who do not routinely use these skills.

Organisations will ensure that all clinicians involved in palliative and end of life care will meet the minimum knowledge and baseline competencies.

As a minimum training needs to include, and practitioners need to demonstrate competence in:

- Understanding the principles of palliative care
- Identifying end of life
- Infection Control & Prevention including how to clean a syringe pump after use
- Medications used in for CSCI and syringe pumps and reasons why
- Knowledge of first line drugs and appropriate doses
- Competence in dose conversion – bring everything back to morphine first
- The correct equipment to use, including the correct battery
- The actual process of using the equipment including setting up and caring for the CSCI and syringe pump
- How and why we monitor the CSCI and syringe pump
- What to do if there are no syringe pump pumps available for use
- The process of collection and return of the syringe pump and what to do when a patient is transferred from or to a different clinical setting
- Risk assessment
- Incident reporting
- Awareness of policies around syringe pump use/care
- Responsibilities as a practitioner
- Where to seek advice and support

7.3 Methods of training

There are many methods that each Trust can deploy to train staff. Training should be blended and not rely on one source to ensure all education needs are met including:

- Formal teaching sessions in house or by an invited representative from the manufacturer or another organisation
- Informal face to face training/update
- Private study
- Online modules
- ELCA - https://portal.e-lfh.org.uk/. module 04-27 Using Syringe Pumps via Click onto end of life, then symptom management to access
- McKinley BD online training https://www.bd.com/en-uk/about-bd/video-gallery?video=6112919692001

All Registered healthcare professionals who have completed their training should ensure that their organisation is aware that the individual is competent to use the equipment and deliver the care

8 Syringe Pumps

This policy is not a standalone document and should be used in conjunction with the SOP which demonstrates the process for setting up and practically using the syringe pump e.g., T34 McKinley Syringe Pump SOP.

Only pumps calibrated in millilitres (mL) per hour should be used. The standard delivery period for a CSCI in palliative care is 24 hours. The pump will automatically calculate the flow rate.

The pump is battery operated (See 3.4). Battery length may vary between manufacturers. Shorter batteries may lose connection and thus risk pump failure. Never force a battery into the battery compartment.

The T34 pump is calibrated to operate with the most used luer lock syringe brands: BD Plastipak and B Braun Omnifix. The syringe MUST have a luer lock facility to avoid leakage or accidental disconnection. The correct brand and size to be used MUST be selected during set up. A 20mL or 30mL syringe is used to allow a greater dilution of medication to reduce the risk of adverse site reaction. The fill volume of a 20 mL syringe is approximately 17mLs; the fill volume of a 30mL syringe is approximately 22mLs.

All syringe pumps should as far as possible be locked in a lockable box. Care is needed with these boxes as they can easily break if dropped. They should be cleaned according to manufacturer's instructions.

Before use it is the responsibility of the person commencing the CSCI to ensure the syringe pump and lockable box are fit for purpose. That they are clean, and the service date is apparent. If at any time during use there is any concern regarding the delivery of the infusion, the pump should be stopped, and it should be exchanged for another syringe pump and returned to the servicing department with information as to the issue attached on a relevant form for the organisation.

Following use and after removal from the patient all syringe pumps and lockable boxes should be cleaned as per the organisations policy.

If there is no syringe pump available immediately to commence an infusion the practitioner should consider inserting a catheter such as Saf-T-Intima and administering prn medication/s (plus a flush of 0.3 mLs of normal saline for injection prior and following administration of medication) to ensure patient comfort and symptom control until a syringe pump becomes available. This process will need prescribing support either a PGD or a medical/non-medical prescriber generated prescription.

Each organisation must have an easily accessible SOP in place.

When using a syringe pump the following information must be recorded:

- Date commenced and by whom
- Syringe Driver number

Pump checks will be conducted at intervals agreed by individual organisations e.g., every four hours in in-patient settings and at each visit for community patients.

Health care professional will “score” site and patient symptoms/observations to support clinical decision making e.g., re-siting infusion, titrating dose of medication.

9 Incidents

Any incident must be dealt with immediately to ensure patient safety.
All incidents must be reported following the individual organisations' incident reporting procedures.

All incidents involving controlled drugs must be reported to the organisations' Controlled Drugs Accountable Officer.

Incidents and lessons learnt should also be shared with the Norfolk and Waveney ICB Medicines Optimisation Team via nwicb.medsqueries@nhs.net and the Palliative and End of Life Care Programme Board. This policy will be reviewed in light of any pertinent lessons learnt.

10 Appendices

10.1 Resources

There is a wide range of End of Life and Palliative Care resources available on Knowledge Anglia.
The Palliative Care Formulary (2022) is available as a book, it is also available to subscribers online via MedicinesComplete. The PCF provides guidance on medicines use in adult palliative care. Subscription to the PCF online also provides access to the Drug Compatibility Checker to check compatibility of medicines in a syringe driver.

Guidance documents for a patient who is imminently dying within hours or days & prescribing if symptoms are present in end-of-life care:

- Syringe Pump Prescription Guidance – finalised version to be attached once ratified
- Palliative Care Pain & Symptom Control Guidelines for Adults for staff providing generalist palliative care [Greater Manchester Health and Social Care Partnership]
- Anticipatory prescribing for end-of-life care [BMA 2020]
- Care of dying adults in the last days of life [NICE NG31]
- Palliative Care Adult Network Guidelines PLUS

10.2 Resources for family/ carers

- End-of-life Care Toolkits for Carers at Home – Helix Centre

10.3 How to order or return a syringe pump

Please refer to your organisation's procedure.

10.4 Opioid dose conversion resources

All dose conversions are approximations. Best practice is to bring **all opioid** doses back to morphine equivalent prior to converting to desired drug.

Finalised version of opioid conversion chart to be attached once ratified.

Refer to Palliative Care Adult Network Guidelines Plus opioid dose converter

10.5 List of drugs held in commissioned community pharmacies

Pharmacy list - EssentialMedsServicePharmacyList_PPMO_Palliative_01122025.pdf (nwknowledgenow.nhs.uk)

Drug list - EssentialMedsServiceDrugList_PPMO_Palliative_01102025.pdf (nwknowledgenow.nhs.uk)

10.6 Community Pharmacies Commissioned to hold agreed Palliative Care Drugs

Please note that the usual route of supply is via the patient's usual pharmacy.
It is good practice to confirm with the pharmacy that they have stock of the drug if the drug to be prescribed is not a "common" drug used in palliative care or likely to be held by pharmacy.

There are a number of community pharmacies across Norfolk and Waveney that have been commissioned to hold an agreed selection of palliative care drugs. This is not an exhaustive selection of drugs. The drugs that are held will enable clinicians to manage presenting symptoms.

Please follow link to Palliative Care Medicines: East of England hosted by PrescQIPP where there is an interactive map to search for pharmacies nearest to any postcode.

10.7 Alternative symptom control drugs

Finalised version to be attached once ratified.

10.8 Community Pharmacy Discharge Medicines Service (DMS)

The process is usually managed via the Trust's Pharmacy department. Please speak to your local team.

General overview:

NHS Trusts will identify patients who will benefit from the DMS and, subject to the patient consenting to a referral, they will send a referral to the pharmacy via a secure electronic system, e.g., Refer to Pharmacy, PharmOutcomes or NHSmail.

The following information should be included, as a minimum, in the referral:

- The demographic and contact details of the person and their registered general practice (including their NHS number and their hospital Medical Record Number);
- The medicines being used by the patient at discharge (including prescribed, over-the-counter and specialist medicines, as there may be medicines interactions), including the name, strength, form, dose, timing, frequency, and planned duration of treatment for all and the reason for prescribing;

- How the medicines are taken and what they are being taken for;
- Changes to medicines, including medicines started or stopped, or dosage changes, and reason for the change; and
- Contact details for the referring clinician or hospital department, to use where the pharmacy has a query.

11 EQUALITY AND DIVERSITY IMPACT ASSESSMENT

To be completed when consultation finished