

Carer training handbook:

Information to support carers in giving subcutaneous injections of medicines for breakthrough symptoms

April 2020

Version 1

Introduction

This leaflet provides information and guidance for carers and relatives who are being trained to give subcutaneous medications for symptom control. It should be used alongside the one to one training given to you by a nurse.

At any time, if you are unsure or don't feel comfortable in giving medication, please let somebody know. Community Nurses can take over.

The doses of medication that you will give are very low and won't cause the death of your loved one, but sometimes the injections may be given very close to the end of their life.

After you have given an injection, contact the advice line, they will advise if a review of the patient is needed.

If you have any questions or worries please contact the advice line:

St Margaret's Advice Line:

Taunton 01823 333822

Yeovil 01935 709480

Definitions:

Symptoms:

A symptom is a sensation experienced by a person as a result of a disease or illness. Symptoms can be unpleasant or distressing.

Breakthrough symptoms:

Breakthrough symptoms are symptoms that arise unexpectedly even if someone is taking regular medication to control those symptoms. This can be distressing, and often an extra dose of medicine is sometimes needed to ensure the person's comfort.

Subcutaneous medications:

Subcutaneous medications are medicines given by an injection underneath the skin into the fatty tissue.

There are two ways in which to give these medications:

- With a needle
- Without a needle

Both of these will be covered in this guide.

Using this guide:

The nurse training you will give you this handbook to guide the one on one training session. It will also be a useful guide and reminder once you have completed the one to one training.

You will be trained how to:

- Recognise the 5 common breakthrough symptoms
- Rate the severity of the breakthrough symptoms
- Select which subcutaneous medication to give
- Calculate the right amount of medication to give
- Open an ampoule of medication safely and draw up the medicine
- How to give an injection using either needle or needless technique
- Record what has been given in the Palliative Care Drug chart and stock card
- Check the medication stock and order more
- Store and dispose of medications and sharps
- Seek advice if any concerns

Useful tip

Keep this handbook in the Green Folder along with the Palliative Care Drug Chart, Treatment Escalation plan, and Stock Card.

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When to give medicines as an injection?

- When people become more poorly, they may lose the ability to swallow medications or liquids. This means we need to use other ways of giving medications for pain relief and control of other symptoms.
- A good and safe way of doing this is to give medicines as an injection underneath the skin. There may be other times when injections are prescribed e.g severe nausea/ vomiting or if people can't tolerate oral medications.
- Carers are often used to giving extra oral medications (medicines taken by mouth) for example for pain control. Giving these injections is a very similar process with main difference being the way the medicine is given.
- Having carers that are able to give subcutaneous medications can help to ensure a person is able to stay at home at the end of their life, if that is their wish. Carers often find comfort knowing that they were able to support that.
- Having said that you shouldn't feel any pressure to give these injections, and if you feel unable to at any point please let someone know.
- The Palliative Care Specialist Nurses, Doctors, and District Nurses will support you and teach you how to give these injections safely.

Recognising breakthrough symptoms

Common breakthrough symptoms:

In the last few weeks of life, some people may experience **breakthrough symptoms** requiring extra doses of medication to feel comfortable.

The **five** most common breakthrough symptoms are:

- Pain
- Breathlessness
- Respiratory secretions
- Nausea and/or vomiting
- Restlessness or agitation

How to recognise breakthrough symptoms:

The best way to tell if someone is experiencing a breakthrough symptom is to ask them. If the person is not able to tell you how they feel, you will need to rely on some other signs which are described below.

It is possible for a person to experience more than one symptom at the same time.

The person you are caring for may experience other symptoms as well as the common five listed above.

-If you have any queries please contact the advice line or the District Nurses

Don't worry!

You are likely to know the person you are caring for better than other health professionals, and it may not be as difficult to recognise these symptoms as you may think.

Trust your own judgement, and if you are unsure, please ask for help.

Five most common breakthrough symptoms and signs

<u>Symptom</u>	<u>Signs you may see</u>
Pain	<ul style="list-style-type: none"> -Grimacing, groaning or frowning -Resisting or groaning when you try to move them -Moving around as if trying to find a comfortable position
Breathlessness	<ul style="list-style-type: none"> -Fast or shallow breaths -Difficulty in speaking or finishing sentences -Exaggerated movements of chest neck or shoulders with each breath -Bluish tinge around lips or finger tips -Agitated behaviour or signs of anxiety
Respiratory Secretions	<p>Saliva and mucous produced by the airways can collect because the muscles that control swallowing become weaker as someone approaches the end of their life.</p> <p>This can cause some sounds that you may notice:</p> <ul style="list-style-type: none"> - Noisy breathing - A “rattling” or “wet” sound with each breath <p>The person being cared for is unlikely to be aware of or distressed by this noise, but it can be distressing to hear for those caring for them.</p>
Nausea and/or vomiting	<p>The person may be:</p> <ul style="list-style-type: none"> -clammy - sweaty - retching - above signs may be worse on movement <p>NB Nausea and vomiting can occur with or without each other</p>
Restlessness or agitation	<p>You may notice changes in behaviour including:</p> <ul style="list-style-type: none"> -An inability to settle, frequently wanting to get up and move -A furrowed brow/ frown -Fidgety movements -Calling out <p>This symptom occurs more frequently in the last days of life, and can sometimes be more distressing at night.</p>

Selecting the right medication to give

- Medications for subcutaneous injections will be supplied in the “**Just in Case box**”.
- Which medicine to use depends on which symptom you have identified.
- Below is a table of the five breakthrough symptoms and the most commonly used medicines for each one.
- The medications will be prescribed on the **Palliative Care Drug Chart**, and the symptom they cover will be written on the prescription.

NB

This is a list of the **most commonly used** medications in “Just in Case” boxes in Somerset.

Sometimes the prescribing doctor may choose **different** medications or doses to suit the person you’re caring for.

[If so, the nurse doing the one to one training will go through these differences with you.]

Symptom	Medication	Common doses (variations may occur)	Minimum time between doses
Pain	Morphine sulphate	2.5 to 5mg	2 to 4 hours
Breathlessness	Morphine sulphate	2.5 to 5mg	2 to 4 hours
Respiratory secretions	Hyoscine Butylbromide	20mg	2 to 4 hours
Nausea / Vomiting	Levomepromazine	6.25mg to 12.5mg	4 hours
Restlessness	Midazolam	2.5 to 5mg	2 to 4 hours

The Palliative Care Drug Chart

Palliative Care Drug Chart

Only for authorisation of injectable (PRN) and syringe pump medication and record of administration for adult patients. The chart can be used by organisations outside Somerset Partnership at their discretion.

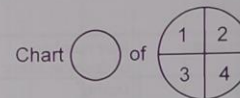


Somerset
Partnership

Any other medication to be administered by Trust staff must be prescribed on the MAR chart / electronic prescribing system

For specialist advice, contact:

- o St. Margaret's Hospice 0845 0708 910
- o Weston Hospice 01934 423912
- o Dorothy House Hospice 0345 0130 555



PATIENT DETAILS:

First Name: <i>JOE BLOGGS</i> Last Name: DOB: <i>01/02/30</i> NHS No: <i>123456789</i> GP Practice:	Allergies/Sensitivities: <input checked="" type="checkbox"/> No known allergies
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Just in case (JiC) medication: supply at least 5 doses when authorising PRN drugs only. More doses will be needed if complex symptoms, frequent PRNs or if authorising syringe pump: e.g. at least 3 day's supply.

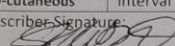
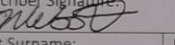

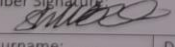
Drug:	Subcutaneous (SC) as required (PRN) dose:	Ampoule Strengths:	Starting dose range over 24 hours via subcutaneous syringe pump:	Usual total maximum dose/24 hours: (Max dose may be increased with clinical discretion)
SYMPTOM 1: PAIN / DYSPNOEA				
Morphine 1st Line Unless already on an alternate opioid	2.5 - 5mg Dosing interval 2-4 hourly Usual max: 6 doses in 24 hours	10, 15, 20 or 30mg/ml in 1ml amps	10-15mg/24hr (If opioid naive)	No upper limit but prescriber may indicate a max dose if patient is already on an opioid
Diamorphine	2.5 - 5mg Dosing interval 2-4 hourly Usual max: 6 doses in 24 hours	10 or 30mg amps	5-10mg/24hr (If opioid naive)	see back page for conversion table If eGFR <30 seek guidance
Please prescribe an adequate volume of Water for injection for reconstituting diamorphine and for syringe driver				
SYMPTOM 2: NAUSEA AND VOMITING				
Levomepromazine	6.25mg Dosing interval 4 hourly Usual max: 4 doses in 24 hours	25mg/ml	6.25mg / 24hr	25mg
SYMPTOM 3: AGITATION IN LAST DAYS OF LIFE				
Midazolam	2.5-5mg Dosing interval 2-4 hourly Usual max: 6 doses in 24 hours	10mg/2ml	10-20mg/24hr (5-15mg if lower dose indicated)	30mg
SYMPTOM 4: RESPIRATORY TRACT SECRETIONS IN LAST DAYS OF LIFE				
Hyoscine Butylbromide	20mg Dosing interval 2-4 hourly Usual max: 6 doses in 24 hours	20mg/ml	60mg/24hr	120mg
Can also be used at the same doses for colic or to reduce secretions in inoperable bowel obstruction				

The Palliative Care Drug Chart

AS REQUIRED INJECTABLE DRUGS (in addition to syringe pump dosing)
 If four or more PRN doses are required in 24hrs you must seek clinical reassessment.
 For opioids the PRN dose is usually 1/6th of the total 24hr dose

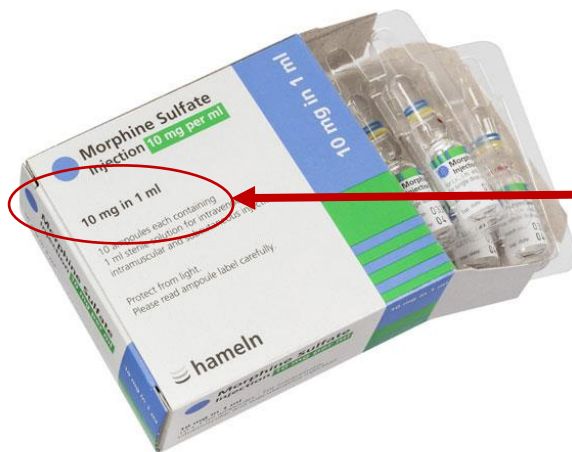
Patient Name: JOE ROGGS
 NHS No: 123456789

For dosing guidance see front page

Drug: <u>MORPHINE SULFATE</u>	Date:	
Indication: <u>Pain/Shortness of breath</u>	Time:	
Dose range: <u>2.5-5mg</u>	Max number of doses in 24hrs: <u>6</u>	Dose:
Route: <u>Sub-cutaneous</u>	Dosing interval: <u>2-4^o</u>	Route:
Prescriber Signature: 	Initials:	
Print Surname: <u>WEBSTER</u>	Date: <u>9/4/20</u>	
Drug: <u>MIDAZOLAM INJECTION</u>	Date:	
Indication: <u>Agitation</u>	Time:	
Dose range: <u>2.5-5mg</u>	Max number of doses in 24hrs: <u>6</u>	Dose:
Route: <u>Sub-cutaneous</u>	Dosing interval: <u>2-4^o</u>	Route:
Prescriber Signature: 	Initials:	
Print Surname: <u>WEBSTER</u>	Date: <u>9/4/20</u>	
Drug: <u>HYOSCYNE BUTYLBROMIDE</u>	Date:	
Indication: <u>Respiratory secretions</u>	Time:	
Dose range: <u>20mg</u>	Max number of doses in 24hrs: <u>6</u>	Dose:
Route: <u>Sub-cutaneous</u>	Dosing interval: <u>2-4^o</u>	Route:
Prescriber Signature: 	Initials:	
Print Surname: <u>WEBSTER</u>	Date: <u>9/4/20</u>	
Drug: <u>LEVOMEPROMAZINE</u>	Date:	
Indication: <u>Nausea/vomiting</u>	Time:	
Dose range: <u>6.25-12.5mg</u>	Max number of doses in 24hrs: <u>4</u>	Dose:
Route: <u>Sub-cutaneous</u>	Dosing interval: <u>4^o</u>	Route:
Prescriber Signature: 	Initials:	
Print Surname: <u>WEBSTER</u>	Date: <u>9/4/20</u>	
Drug:	Date:	
Indication:	Time:	
Dose range:	Max number of doses in 24hrs:	Dose:
Route: <u>Sub-cutaneous</u>	Dosing interval:	Route:
Prescriber Signature:	Initials:	
Print Surname:	Date:	

Calculating how much medicine to give

- The medicines for the breakthrough symptoms will be prescribed in the Palliative care drug chart.
- The prescription shows the dose of medications that you can give.
- The ampoules of medications that have been supplied in the 'Just in Case Box' will have a **total dose** in the ampoule and **total volume** of the ampoule written on the side.



Example:

Morphine comes in 10mg/1ml ampoules

The **Total dose** is 10mg

The **Total volume** is 1ml

- The **total dose** in the ampoule will often be **more** than the dose on the prescription, so you will need to work out **how much of that ampoule to give**.

Don't Worry!

Your Nurse will go through this with you in the one to one training session.

If you aren't sure of how much medicine to give, don't give the injection.

Stop, and call the Advice Line or the District Nurses.

Calculating how much medicine to give

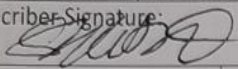
- Here is the calculation to work out how much of the ampoule you should draw up.
- This will be referred to as the **volume to be given**.
- You will need a calculator, the prescription on the palliative care drug chart, and the ampoule of medication.

Volume to be given =

(Dose prescribed ÷ total dose in ampoule) x total volume in ampoule

This will give you a number which is the number of millilitres (ml) you need to draw up.

Example:

Drug: MORPHINE SULPHATE		Date:
Indication: Pain/Shortness of breath		Time:
Dose range: 2.5-5mg	Max number of doses in 24hrs: 6	Dose:
Route: Sub-cutaneous	Dosing interval 2-4 ⁰	Route:
Prescriber Signature: 		Initials:
Print Surname: WEBSTER	Date: 9/4/20	

Here is a prescription for morphine:

Dose prescribed is 5mg

Morphine comes in 10mg/1ml
ampoules:

Total dose in ampoule = 10mg

Total volume in ampoule = 1ml

Volume to be given = $(5 \div 10) \times 1$

Volume to be given = $0.5 \times 1 = 0.5\text{ml}$

You should therefore draw up 0.5ml

Common examples:




Here are the common “Just in case medicines” and strengths of the ampoules they come in.







<u>Medication</u>	<u>Example dose</u>	<u>Strength of ampoule</u>	<u>Volume to be given</u>
Morphine sulphate	2.5 to 5mg	10mg/1ml	0.25 to 0.5ml
Levomepromazine	6.25mg to 12.5mg	25mg/1ml	0.25 to 0.5ml
Midazolam	2.5mg to 5mg	10mg/2ml	0.5 to 1ml
Hyoscine Butylbromide	20mg	20mg/1ml	1ml

Use the examples in the table to practice the calculation

Step by Step Guides:




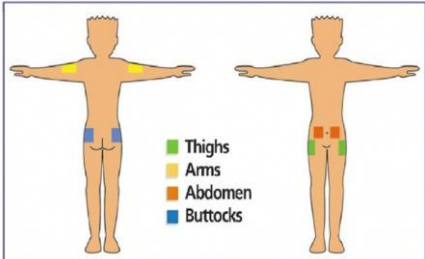
1. How to open an ampoule and draw up the medicine




<p>1.a Arrange the following items:</p> <ul style="list-style-type: none"> - Glass ampoule of medicine or plastic ampoule of water for injection -Sharps bin -Pink blunt filter needle to draw up medicine -Cap to screw onto syringe OR orange needle for injection -2ml syringe -Clean container to put the equipment in 	
<p>2.a Wash your hands thoroughly with soap and water, and dry them well</p>	
<p>3.a Attach the blunt drawing up needle to the syringe:</p> <ul style="list-style-type: none"> - Remove the syringe and the pink blunt needle from the packaging. - Avoid touching the open end of the syringe. - Twist the needle (with protective cover) onto the syringe. 	
<p>4.a Open the glass ampoule:</p> <ul style="list-style-type: none"> - Hold the ampoule upright and check there is no medicine in the top. - If there is, gently flick the top of the ampoule with your finger, to move the medicine to the bottom. - Ensure the black dot at the neck of the ampoule is facing away from you. - Place your thumb and index finger above the neck of the ampoule. - Pushing your thumb away from you, snap the top off the ampoule and discard the top in the sharps bin <p>*Some services use ampoule openers- if so your nurse will show you how to use one.</p> <p>*If an ampoule shatters, discard it into the sharps box, and start again</p>	
<p>5.a</p>	

<p><u>4.b) Open the plastic ampoule:</u> -Twist the top of the ampoule until it is removed.</p>	
<p><u>h5. Draw the medicine into the syringe:</u> -Place the ampoule in a position that is comfortable for you, such as on a table, or turn the ampoule upside down. -Remove the protective cover from the blunt drawing up needle. -Insert the needle into the ampoule, slowly pull back the plunger to draw the liquid into the syringe. -Once empty, discard the used ampoule into the sharps box.</p>	
<p><u>6. Remove air bubbles from the syringe:</u> - Point the syringe upwards -Gently flick syringe with your finger to move air bubbles to the top of the syringe.</p>	
<p><u>7. Remove excess medicine from syringe:</u> - Keep the syringe pointing upwards - Gently push the plunger upwards until air bubbles are removed, and you have the correct volume of medicine left in the syringe. -If you are drawing up water for a flush, you want to have 0.5ml left in the syringe. (It is ok if you see droplets of medicine coming out of the syringe)</p>	
<p><u>8. Twist the blunt drawing up needle off the syringe, and discard the needle in the sharps box</u></p>	
<p><u>9. Twist the cap or the orange needle onto the end of the filled syringe, and place in the clean container.</u> -Prepare to give the injection</p>	

2. How to give a subcutaneous injection:




The needle technique

<p>1. <u>Wash your hands with soap and water and dry them thoroughly.</u></p>	
<p>2. <u>Prepare your equipment:</u></p> <ul style="list-style-type: none"> -Follow the instructions in Step by Step guide 1. "How to open an ampoule and draw up the medicine". You should have: <ul style="list-style-type: none"> -a clean container, -syringe containing the medicine attached to orange needle. -Alcohol wipe and sterile gauze if available -Sharps box 	
<p>3. <u>Prepare the patient for the injection:</u></p> <ul style="list-style-type: none"> -Ensure they are comfortable, and help them to relax, ensuring privacy and dignity. -Position them to make the injection site visible -Explain the reason for the injection and what you are going to do. 	
<p>4. <u>Prepare the injection site:</u></p> <ul style="list-style-type: none"> - You can inject into the buttock, abdomen, upper arm or thigh. - Look for an area of fatty tissue. - If available, clean the site with an alcohol wipe or soap and water. 	<p>Injection sites</p> 

<p><u>5. Remove the needle sheath:</u></p> <ul style="list-style-type: none"> - Push back the safety cover, so that the needle sheath is exposed. - Remove needle sheath and place in sharps container. 	
<p><u>6. Insert the needle into the skin:</u></p> <ul style="list-style-type: none"> -Gently pinch the skin into a fold -Hold the syringe between the thumb and forefinger of your dominant hand. -Insert the needle into the skin at a 45 degree angle, and release the grasped skin. -Inject the drug slowly over 10-30seconds 	
<p><u>7. Dispose of the needle:</u></p> <ul style="list-style-type: none"> -Withdraw the needle and push over the safety cap. -Dispose of the syringe and needle together in the Sharps box. - Apply gentle pressure to the injection site with sterile gauze if available. 	

3. How to give a subcutaneous injection:

The needleless technique

<p>1. <u>Check the subcutaneous cannula site for:</u></p> <ul style="list-style-type: none"> - Swelling, tenderness - Redness or leakage - Changes in the cannula position <p>If any of these are present, contact your nurse for advice before continuing</p>	
<p>2. <u>Wash your hands with soap and water and dry them well</u></p>	
<p>3. <u>Prepare your equipment:</u></p> <p>Follow Step by Step Guide 1. to draw up the medicine and water for injection for flushing the cannula (in two separate syringes).</p> <p>You should have:</p> <ul style="list-style-type: none"> - Clean container - Syringe filled with medicine with cap on the end - Syringe filled with 0.5ml water for flush, with cap on the end. 	

4. Attach the syringe to the cannula

- Pick up the syringe containing the medicine and remove the red cap. Place red cap in sharps box.

- Pick up the cannula and remove the cap, placing the cap in the clean container.

- Twist the syringe onto the blue end of the cannula. Ensure the syringe is securely attached to the cannula.



5. Give the injection:

- Slowly push the plunger until the syringe is empty.
- Remove the syringe from the cannula using a twisting motion.
- Place syringe in the sharps box.
- Replace the cap on the cannula and ensure secured.



6. Flush the cannula

- Pick up the syringe containing the water for flush.
- Repeat actions 4 and 5
- Place the cap back onto the cannula



6. Check the injection site for:

- Redness, welling, tenderness, leakage.

If any of these are present, contact your nurse or the advice line.

Recording in the Drug Chart and Stock Card

You will need to document that you have given the injection in two places

1. The Palliative Care Drug Chart
2. The Stock Card

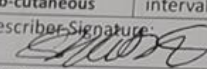
After you have given an injection of any kind, contact the Advice Line so that we can arrange a review of the patient if needed.

1. Palliative Care Drug Chart:

- To the right of the prescription are spaces to record that you have given a dose of the medication
- You will need to document the:

- **Date**
- **Time**
- **Dose**
- **Route**
- **Your initials**

For dosing guidance see front page

Drug: MORPHINE SULFATE	Date:	14/4		
Indication: Pain/shortness of breath	Time:	9.30		
Dose range: 2.5-5mg	Max number of doses in 24hrs: 6	Dose:	5mg	
Route: Sub-cutaneous	Dosing interval: 2-4 ⁰	Route:	S/C	
Prescriber Signature: 	Initials:	AB		
Print Surname: WEBSTER	Date:	9/4/20		

Checking medication stock:

- Prescriptions are needed for all subcutaneous medicines.
- It is recommended that enough medicine for at least three days is always available at home.
- In the one to one training session, your nurse will explain the best way to make sure you always have enough medicine in the hose.
- Check the amount of medicine each day and let your GP/ District Nurse or Palliative Care Specialist Nurse know if stocks are running low.
- If getting to the Pharmacy is difficult, ask your pharmacist if medicines can be home-delivered.

How to Safely store and dispose of subcutaneous medicines:

Medicines need to be stored safely and disposed of safely.

- Your nurse will advise you on safely storing and disposing of subcutaneous medicines

Storage:

- Keep all medicines in a cool, dry place, out of view and reach of children
- Store all medicine ampoules in a secure container (i.e the 'Just in Case Box'
- Store the sharps container out of reach of children

Disposal:

- Dispose of all opened ampoules in the Sharps Box
- Return all unused medicines to your local Pharmacy as soon as possible

Asking for Help or Advice:

If you have any questions or worries please contact the district nurses, or the advice line on numbers shown below.

St Margaret's Advice Line:

Taunton 01823 333822

Yeovil 01935 709480

District Nurse Telephone Numbers:

Please add appropriate number below:

District Nurses.....

