

Pain at the End of Life

Unless specifically indicated, morphine is the injectable first-line opioid of choice. Other opioids are indicated in renal failure (e.g. if eGFR<30ml/min) and previous morphine intolerance.

Seek specialist advice if you consider that an alternative may be indicated.

	YES	Is patient already on opioid?	NO	
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For patient on morphine, follow guidance below.
For patients on other opioids, seek advice

Patient on morphine sulphate

- Divide 24 hour total dose of current oral opioid (**regular + prn**) by 2 and prescribe this as morphine (mgs) by syringe driver over 24 hours
- Prescribe 1/6th morphine syringe driver dose for breakthrough/rescue medication to be given s-c up to hourly if needed
- Start syringe driver 4 hrs before next oral opioid dose would have been due (or immediately if a dose has been missed)
- Discontinue oral opioid

Review within 24hrs

If extra medication has been needed for pain:

- Increase syringe driver dose by total amount of rescue morphine given or by 50%, whichever is less
- Adjust rescue/breakthrough dose to 1/6th of syringe driver morphine dose to be given s-c up to hourly if needed

If pain is controlled, make no changes

If pain is uncontrolled, follow principles above

Continue to review regularly

Patient on weak opioid

(Codeine, Tramadol, Dihydrocodeine)

- Stop oral weak opioid
- Start morphine 20mg/24hrs by syringe driver soon after last oral dose
- Prescribe morphine 5mg s-c hourly if needed for rescue/breakthrough pain

Review regularly & adjust as above

Patient with patches for pain relief

(Fentanyl, Buprenorphine)

- See pages 2 & 3 for guidance

Scenario 1: "planning ahead"

Patient not in pain

- Prescribe morphine 2.5 - 5mg s-c hourly if needed
- If patient later develops pain, proceed to next box

Scenario 2: "act now"

Patient in pain

- Give morphine 2.5 - 5mg s-c stat
- If effective prescribe and start morphine 20mg/24h by syringe driver (in frail patients consider starting 10mg/24h)
- Prescribe morphine 2.5 - 5mg s-c for rescue/breakthrough pain to be given up to hourly if needed

Review within 24hrs

If extra medication has been needed for pain:

- Increase syringe driver dose by total amount of rescue medication given or by 50%, whichever is less
- Adjust rescue/breakthrough dose to 1/6th of syringe driver morphine dose to be given s-c up to hourly if needed

If patient requires 3 or more hourly consecutive prn doses, seek medical / specialist palliative care assessment / advice

If pain is controlled, make no changes

If pain is uncontrolled, follow principles in box above

Continue to review regularly

Pain at the End of Life – Supplementary Information

Fentanyl patches for a patient in the last days of life

It is recommended to continue fentanyl patches in these patients. Remember to carry on changing the patch(es) every 72 hours – this is sometimes forgotten.

If pain occurs, give rescue doses of morphine or whichever injectable opioid is recommended by the specialist palliative care team.

Consult the chart on page 3 to calculate the correct rescue dose.

If morphine is not appropriate, seek specialist palliative care advice about an alternative injectable opioid.

Adding a syringe driver to a patch

If 2 or more rescue doses are needed in 24 hours, start a syringe driver with morphine (or other opioid) and continue the patch(es).

The morphine (or other opioid) dose in the syringe driver should equal the total rescue doses given in previous 24 hours up to a maximum of 50% of the existing regular opioid dose.

Continue to apply this rule when reviewing pain control daily.

Remember to use the dose of the patch and the dose in the syringe driver to work out the new rescue dose each time a change is made.

If you are in any doubt about these calculations, seek specialist palliative care advice.

Breakthrough or rescue dose calculation for patients on end of life care pathway requiring subcutaneous medication

Patients on Morphine, Oxycodone or Diamorphine via syringe driver

The breakthrough dose is usually between $1/10^{\text{th}}$ and $1/6^{\text{th}}$ of the total 24 hour dose. A common starting point is to prescribe $1/6^{\text{th}}$ of the total 24 hour dose (using a practical dose, rounding down rather than up) to be given hourly as needed and adjusted according to benefit and tolerability.

Patients with a Fentanyl patch:

Use the opioid dose conversion chart on page 3 to calculate the appropriate hourly breakthrough or rescue dose.

Rescue doses may be given hourly up to the maximum defined by the prescriber.

A defined maximum number of doses will prompt early review if pain is uncontrolled.

When managing a patient with renal failure, please seek specialist palliative care advice.

Opioid Dose Conversion Chart to be used at the End of Life

<u>Route</u>	<u>Oral opioid</u>		<u>Subcutaneous opioid infusion</u>			<u>PRN dose of subcutaneous opioids</u>		<u>Opioid by transdermal patch</u>	
	Dose in mg per 24 hours		Morphine is first line injectable opioid of choice Doses are for medication in syringe driver in mg given over 24hrs			Doses are in mg, and can be given up to hourly		Dose in micrograms per hr	
Opioid	Morphine	Oxycodone	Morphine	Diamorphine	Oxycodone	Morphine	Oxycodone	Fentanyl (72hrly)	Buprenorphine
Conversion calculation rule			Divide oral morphine dose by 2	Divide oral morphine dose by 3	Divide oral oxycodone dose by 2	Divide 24hr sc morphine infusion dose by 6	Divide 24hr sc oxycodone infusion dose by 6		
	20	~15	10		7.5	2.5	2.5	N/A	10 (7 day)
	30	20	15		10	2.5	2.5	12	15 (7 day)
	60	40	30		20	5	2.5	25	35 (4 day)
	120	80	60		40	10	5	50	70 (4 day)
	180	120	90		60	15	10	75	105 (4 day)
	240	160	120		80	20	10	100	140 (4 day)
	300	200	150		100	25	15	125	
	360	240	180		120	30	20	150	
	480	320	240		160	40	25	200	
	600	400	300		200	50	30	250	
	720	480	360		240	60	40	300	
	840	560	Use diamorphine	280	280	Use diamorphine	40	350	

Conversion ratios stated between opioids are for guidance only and further dose adjustment, up or down, may be needed.

*** If symptoms continue after administration of 3 consecutive hourly doses, seek Specialist Palliative Care advice.**

Nausea and/or Vomiting at the End of Life

Patients already taking an oral anti-emetic who reach the last days of life should have the anti-emetic continued by the sub-cutaneous route to ensure on-going symptom control.

This will require a drug change (Domperidone to Metoclopramide; Prochlorperazine to Cyclizine). New onset nausea/vomiting in the last days of life is difficult to investigate and may be multifactorial.

Evidence suggests cyclizine and/or haloperidol is the most effective treatment.

To avoid using two drugs, some specialists recommend levomepromazine because of its broad spectrum of action and because its anxiolytic properties may be useful in end stage care.

IN RENAL FAILURE: AVOID CYCLIZINE. USE HALOPERIDOL or LEVOMEPRIMAZINE.

New nausea/vomiting in a patient not currently treated with an anti-emetic

ASK: Is a chemical cause likely?

If YES, prescribe Haloperidol 1.5-3mg daily by s-c injection (syringe driver if preferred)

Also prescribe Cyclizine 50mg prn s-c, maximum 150mg/24hrs

If NO, prescribe Cyclizine 150mg/24hrs via syringe driver

Also prescribe Haloperidol 1.5mg s-c prn, maximum 3 doses in 24hrs

If anxiolytic/sedative effects likely to be helpful, consider levomepromazine as first line anti-emetic prescribed as below.

REVIEW AFTER 24hrs:

If symptoms are controlled, continue as before.

If either nausea or vomiting persists, follow guidelines in box **below**.

Uncontrolled nausea/vomiting in a patient already treated with an anti-emetic

Review the possible causes but do not delay changing the anti-emetic regime or arrange burdensome investigations in an end of life care situation.

If a combination of cyclizine and haloperidol fails to control nausea/vomiting, consider replacing them with levomepromazine 12.5mg stat s-c or over 24hrs via syringe driver.

Prescribe levomepromazine 6.25mg s-c prn up to 4 doses/24hrs **and seek specialist palliative care advice**.

Nausea/vomiting already controlled

Continue existing anti-emetic but switch to the subcutaneous route

(this will require a change of agent if prochlorperazine or domperidone is in use)

Consider prescribing levomepromazine 6.25mg s-c prn up to 4 doses/24hrs

REVIEW THE SYMPTOM CONTROL ACHIEVED ON A REGULAR BASIS

Notes on Levomepromazine

The effects of this drug may last up to 24hours. Once daily s-c dosing is an alternative to s-c infusion.

The maximum anti-emetic effect may be achieved at doses of 25-50mg/24hrs.

Doses above 25mg/24h (or lower in patients who are sensitive) have a sedative effect.

The sedative effect may be clinically useful - this drug is also used in the management of terminal agitation and restlessness (see page 5).

Restlessness and/or Agitation at the End of Life

Consider and treat common causes of restlessness - urinary retention, faecal impaction and pain. Also consider whether sedation is acceptable to patient. Patients on regular or long term benzodiazepines who enter the last days of life should continue to receive a benzodiazepine. Give midazolam by s-c infusion to prevent rebound agitation/withdrawal. **In complex situations, seek specialist palliative care advice. The doses below are a guide.**

If sedation is clinically indicated, choose MIDAZOLAM
Where there is delirium or to avoid excess sedation, choose HALOPERIDOL
LEVOMEPRMAZINE may be preferable where there is paranoia/psychosis
IN RENAL FAILURE: MIDAZOLAM IS PREFERRED FIRST LINE OPTION

PATIENT RESTLESS/AGITATED

PATIENT NOT RESTLESS/AGITATED

Immediate management
(use lower dose range if frail/elderly)
Give medication s-c stat:
Midazolam 2.5mg - 5mg
OR
Haloperidol 1.5mg – 2.5mg
Start syringe driver:
Midazolam 10-20mg/24h
OR
Haloperidol 2.5 - 5mg/24h
Prescribe rescue doses s-c up to hourly:
Midazolam 2.5mg - 5mg
OR
Haloperidol 1.5mg – 2.5mg

Plan ahead
Prescribe s-c up to hourly as needed
Either Midazolam 2.5 mg - 5mg
Or Haloperidol 1.5mg – 2.5mg

Review within 24 hrs
If 2 or more doses needed **and are effective**, start syringe driver of same drug (see left).

If 2 or more doses of Midazolam 5mg or Haloperidol 2.5mg are given **but are not effective**, switch to the other drug or consider levomepromazine (see below).

Review within 24 hrs
Midazolam:
Increase syringe driver dose by the equivalent of the extra doses given. Seek specialist advice if dose increases over 50% appear to be needed.
Also continue rescue doses of 5mg s-c prn.
If midazolam driver dose > 30mg/24hrs, consider **addition** of levomepromazine or haloperidol.
Common dose range midazolam 30 – 60mg/24hrs

Persistent symptoms
Levomepromazine is an effective sedative. It may be added to midazolam (if midazolam partially effective) or used to replace haloperidol or midazolam.

Start syringe driver at 25mg/24h
Use rescue dose 12.5mg s-c hourly as needed
Seek advice if symptoms are not controlled
Sometimes very high doses are needed

Haloperidol:
If extra doses are given and effective, increase driver dose by the same amount.
Consider addition of midazolam if doses need to be increased above 10mg/24hrs or there is limited effect.

Although hourly doses are advised, repeated doses without effect should prompt specialist palliative care advice whatever time of day or night.

Respiratory Tract Secretions at the End of Life

Secretions ('death rattle') are easier to control early than late. Treat promptly.

Considerations when choosing drug treatment:

Hyoscine salts are commonly prescribed to try to control secretions in the last days of life.

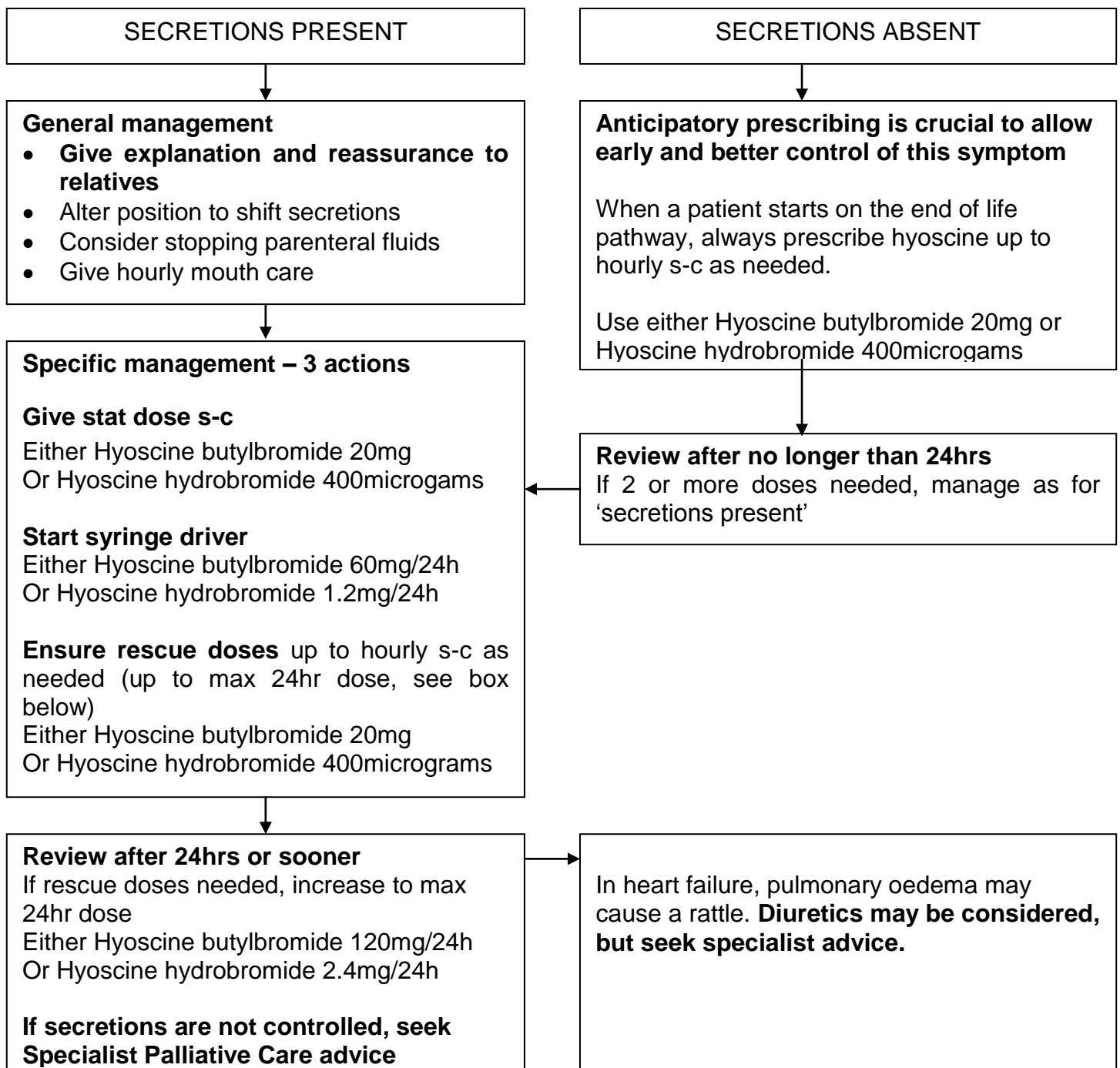
Hyoscine **butylbromide is non-sedating** and should therefore be considered in a conscious patient.

(N.B. *Hyoscine butylbromide is incompatible with cyclizine in a syringe driver*).

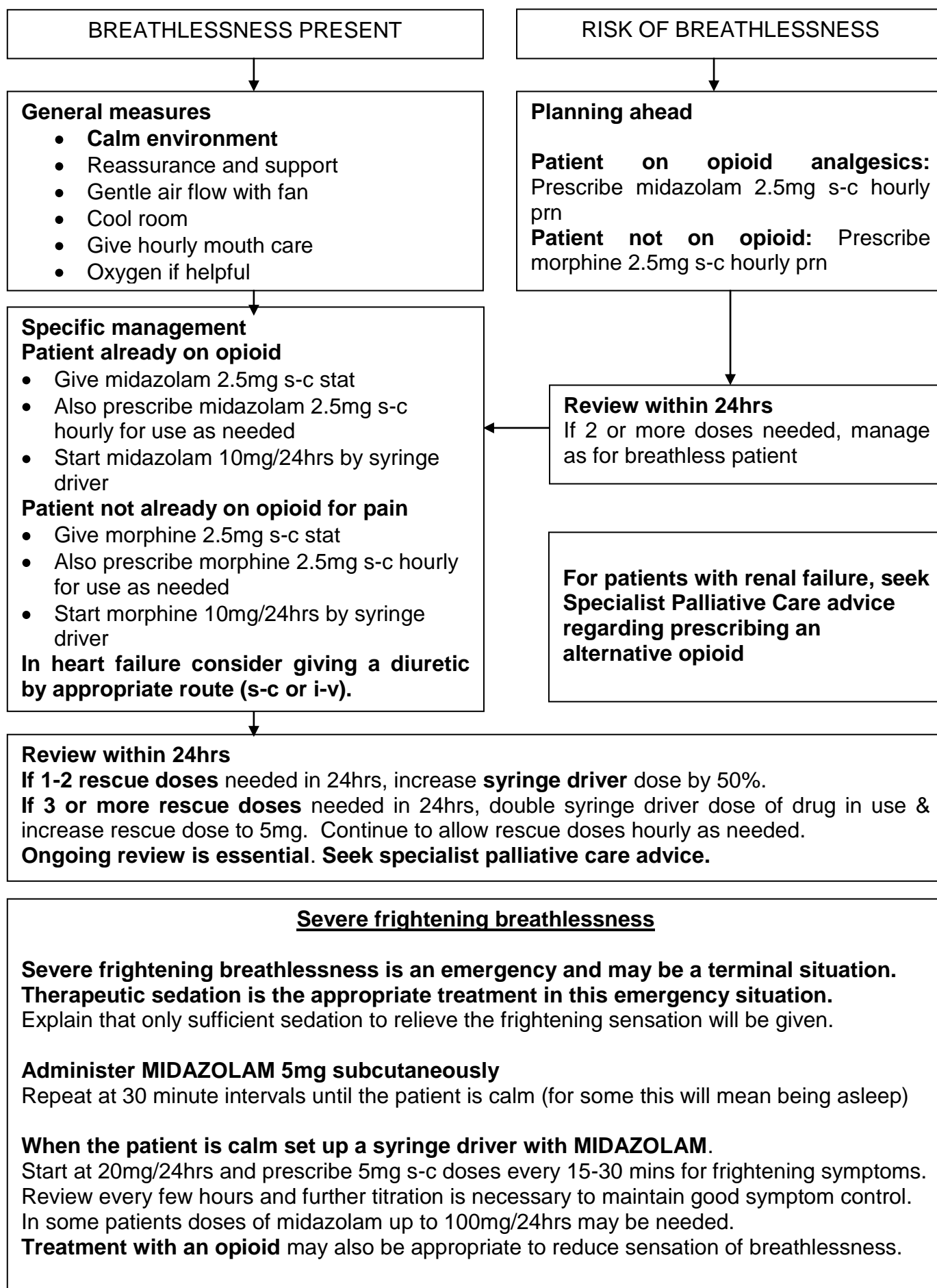
Hyoscine **hydrobromide has sedative effects** which *may* be useful, but occasionally causes agitation.

Some palliative care services use **Glycopyrrolate** as the preferred anti-secretory agent to avoid sedation.

IN RENAL FAILURE: AVOID HYOSCINE HYDROBROMIDE



Breathlessness at the End of Life



Guidelines for the Management of the person with TYPE 1 DIABETES towards the end of life

Is the Patient



Eating a reduced amount:

- If blood sugar < 10 mmol/l reduce insulin dose by 50%.
- Consider reducing the frequency of the blood sugar monitoring, eg once or twice daily.
- Give explanation to patient / carer.
- Reassess every 24 hours.

Patient continues to eat less:

- If blood sugar remains below 10 mmol, reduce the insulin to 25% of normal dose.
- Continue reviewing patient and blood glucose daily.

NB

- If blood glucose > 15 mmol/l and patient has symptoms give 10-20% of the original dose as quick acting insulin (Novorapid / Humalog / Actrapid).

Patient is not eating:

- If blood sugar < 10 mmol reduce the insulin by 50%.
- Consider reducing the frequency of blood sugar monitoring to daily.
- Reassess every 24 hours.

Patients condition deteriorates and not eating or drinking:

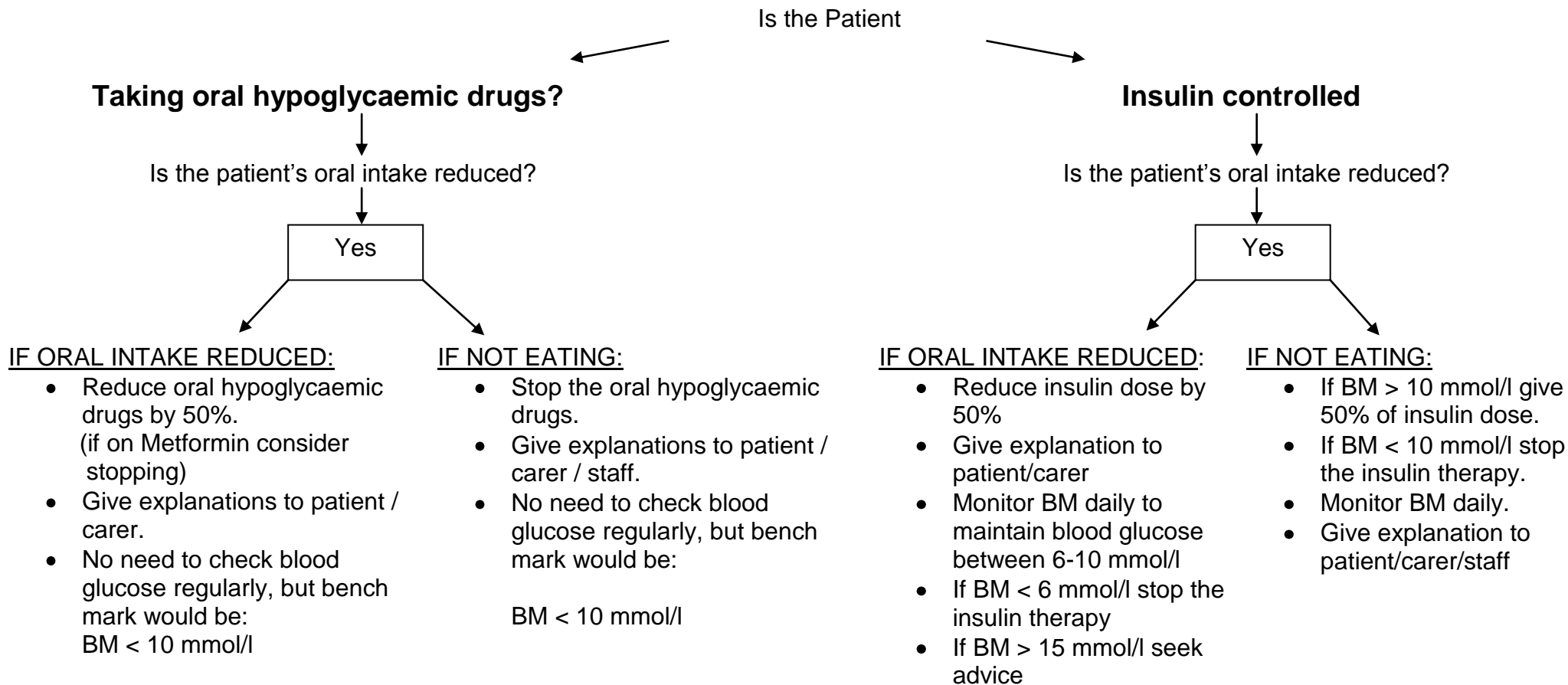
- If patient is not eating or drinking, and there is no improvement expected, stop the insulin and monitoring.
- Give explanations to carer.

To seek further advice, please contact:

- For patient's living in Newcastle contact Diabetes Centre 9.00 am – 4.45 pm Mon to Fri (0191) 256 3003
- For patients living outside Newcastle, contact your local Diabetes Centre

For Specialist Palliative Care advice refer to '24 Hour Advice for Health Care Professionals' yellow guidance sheet.

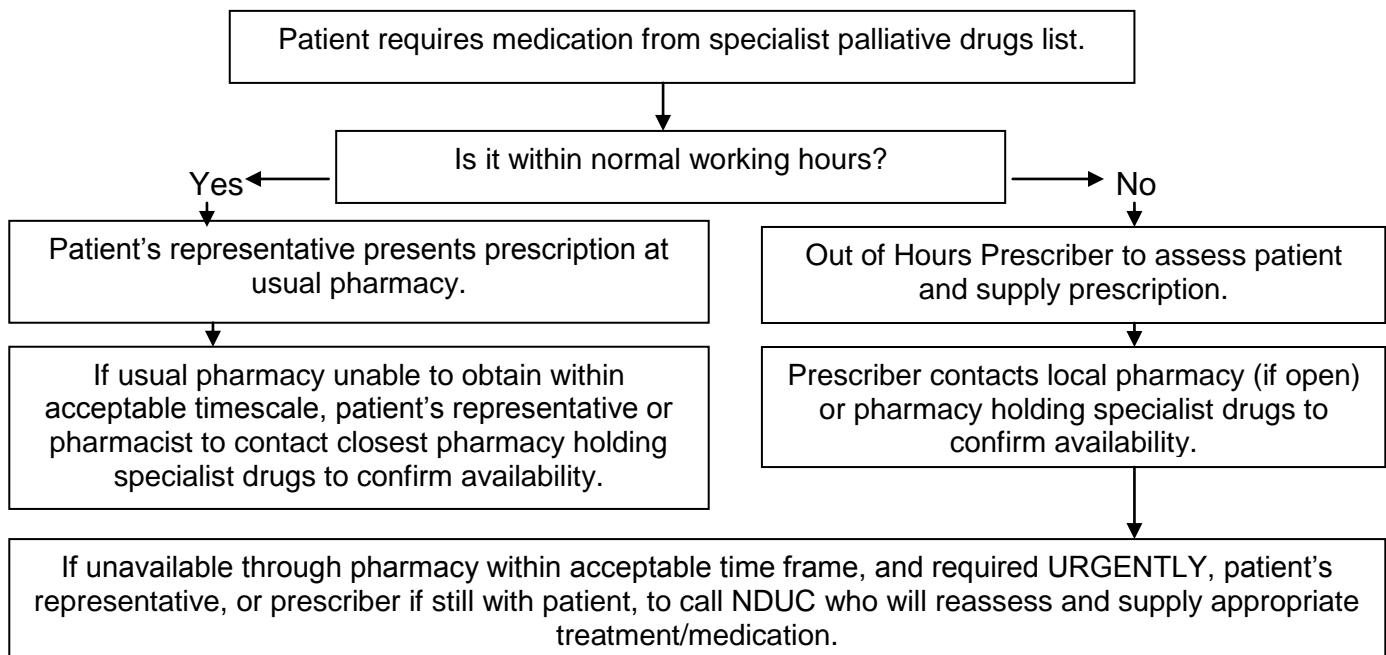
Guidelines for the Management of the person with TYPE 2 DIABETES towards the End of Life



To seek further advice, please contact:

- For patient's living in Newcastle contact Diabetes Centre 9.00 am – 4.45 pm Mon to Fri (0191) 256 3003
- For patients living outside Newcastle, contact your local Diabetes Centre

Supply of Specialist Drugs in the North of Tyne Area



NB: NDUC cannot dispense prescriptions generated by another professional and will therefore reassess patient and supply medication if assessed as appropriate.

Sample prescription

How to write a prescription for controlled drugs (BNF 68; September 2014, Page 8/9)

Prescriptions for Controlled Drugs that are subject to prescription requirements must be indelible, and must be *signed* by the prescriber, *be dated*, and specify the prescriber's *address*. The prescription must always state:

- The name & address of patient;
- In the case of a preparation, the form & where appropriate the strength of the preparation;
- For liquids, the total volume in millilitres (in both words & figures) of the preparation to be supplied; for dosage units, the number (in both words & figures) of dosage units to be supplied; in any other case, the total quantity (in both words & figures) of Controlled Drug to be supplied;
- The dose

Sample Prescription

12/3/45		MR JOHN BROWN 22 TOWER STREET	
Please don't stamp over age box Number of days' treatment		ANY PLACE ABS 6 EF	
N.B. Ensure dose is stated			
Endorsements			
EXAMPLE PRESCRIPTION	MORPHINE SULPHATE 10 mg/ml INJECTION		EXAMPLE PRESCRIPTION
	Supply 10 (TEN) x 1 ml vials		
20 mg subcutaneously via syringe driver over 24 hours			
Signature of Prescriber		Date	
[Signature]		25/3/2015	

This is an example only. Please use your own clinical judgement regarding strengths / titration.

List of drug preparations

Indication	Drug	Dose
Pain	Morphine injection	10 mg/ml 30 mg/ml 60 mg/2ml
Pain	Oxycodone injection	10 mg/ml 50 mg/ml
Pain	Diamorphine injection (powder for reconstitution)	10 mg amp 30 mg amp 100 mg amp
Pain	Alfentanil injection (only prescribe under specialist guidance)	1mg (1000 microg) / 2ml 5mg (5000 microg) /10ml 5mg (5000 microg) / ml
Nausea & Vomiting	Cyclizine injection	50 mg/ml
Nausea & Vomiting	Haloperidol injection	5 mg/ml
Nausea & Vomiting	Metoclopramide injection	10 mg/2 ml
Nausea & Vomiting / and / or Agitation	Levomepromazine injection	25 mg/ml
Agitation	Midazolam injection	10 mg/2 ml
Respiratory Tract Secretions (and abdominal colic)	Hyoscine Butylbromide injection	20 mg/ml
Respiratory Tract Secretions	Hyoscine Hydrobromide injection	400 microg/ml
Respiratory Tract Secretions	Glycopyrronium Bromide injection	200 microg/ml

Specialist drugs

Minimum quantity of drugs held by these extended hours pharmacies.

Alfentanil 500micrograms/ml, 10 x 2ml ampoules

Ciprofloxacin suspension 250mg/5ml, 1 x 100ml

Ciprofloxacin tablets 250mg, 1 x 10

Cyclizine injection 50mg/ml x 10

Dexamethasone injection 6.6mg/2ml x 5

Dexamethasone tablets 2mg x 50

Diamorphine injections 10mg x 5, 30mg x 10

Diclofenac 100mg suppositories x 10

Fentanyl matrix 25 patch x 5

Glycopyrronium bromide injection 200mcg/ml 1ml x 10

Haloperidol injection 5mg/ml x 5

Haloperidol tablets 1.5mg x 28

Hyoscine butylbromide injection 20mg/ml x 20

Hyoscine hydrobromide injection 400mcg/ml x 20

Levomepromazine injection 25mg/ml x 10

Levomepromazine tablets 25mg x 84

Lorazepam 1mg tablets x 28

Metoclopramide injection 10mg/2ml x 10

Metoclopramide tablets 10mg x 28

Midazolam injection 10mg/2ml x 20

Morphine sulphate injection 10mg/1ml x 20

Morphine sulphate injection 30mg/1ml x 10

Morphine sulphate injection 60mg/2ml x5`

Morphine sulphate oral solution 10mg/5ml, 3 x 120ml

Morphine sulphate conc solution 100mg/5ml, 1 x 100ml

MST tablets 10mg, 30mg, 60mg x 60

Oxycodone injection 10mg/ml 1ml x 10

Oxycodone injection 50mg/ml 1ml x 10

Oxycodone oral solution 5mg/5ml x 250ml

Oxycontin tablets 10mg, 20mg x 56

Rifampicin syrup 100mg/5ml, 1 x 100ml

Rifampicin 150mg capsules x 100

*Rivaroxaban15mg tablets x 28 (Kingston Park Boots & Northumberland pharmacies)

Sodium chloride 0.9% 10ml ampoules x 10

Water for injection 10ml ampoules x 10

Zomorph M/R Capsules 10mg, 30mg and 60mg x 60

Specialist advice on palliative care prescribing can be obtained from:

North Tyneside Team - 0191 220 5905

North Northumberland - 01665 626713

South East and Central Northumberland - 01670 857635

West Northumberland - 01434 612932

Out of Hours - all advice is provided by - 0191 273 3435

Pharmacies which stock specialist drugs

Area	Pharmacy	Address	Telephone	Opening hours
Alnwick	Boots the Chemist	50-52 Bondgate Within	01665 602143	Mon – Sat 9.00 – 17.30, Sun 11.00 – 16.00
Ashington	Central Pharmacy	Lintonville Terrace	01670 856633	Mon – Sat 7.00 – 22.30, Sun 10.00 – 17.00
Ashington	Asda Pharmacy	Lintonville Terrace	01670 528610	Mon 8.00 – 23.00, Tues – Fri 7.00 – 23.00 Sat 7.00 – 22.00, Sun 10.00 – 16.00
Benton	Asda Pharmacy	Whitley Road	0191 2705710	Mon – Fri 8.00 – 22.00, Sat 8.00 – 20.00, Sun 10.00 – 16.00
Berwick	Tesco Pharmacy	Tweedside Trading Est	01289 762847	Mon 8.00 – 22.30, Tues – Fri 06.30 – 22.30 Sat 6.30 – 22.00, Sun 10.00 – 16.00
Blyth	Boots the Chemist	60-62 Maddison Street	01670 546092	Mon – Sat 7.30 – 23.00, Sun 9.30 – 20.00
Byker	Asda Pharmacy	Newcastle Shopping Pk	0191 2106990	Mon – Sat 9.00 – 21.00, Sun 10.00 – 16.00
Cramlington	Sainsbury Pharmacy	Manor Walks	01670 738542	Mon – Sat 7.00 – 23.00, Sun 10.00 – 16.00
Eldon Sq	Boots the Chemist	Hotspur Way	0191 2329844	Mon – Fri 8.00 – 20.00, Sat 08.00 – 19.00, Sun 11.00 – 17.00
Fenham	Lloyds Pharmacy	168 West Road	0191 2735589	Mon – Fri 8.30 – 18.00, Sat 9.00 – 13.00
Gosforth	Asda Pharmacy	Hollywood Avenue	0191 2130933	Mon – Fri 8.00 – 22.00, Sat 8.00 – 20.00, Sun 10.00 – 16.00
Gosforth **	J&J Whittakers	32 Wansbeck Rd South	0191 2855576	Mon, Tue, Thur, Fri 9.00 – 17.30, Wed 9.00 – 17.00, Sat 9.00 – 13.00
Heaton	Boots the Chemist	293-295 Chillingham Rd	0191 2650553	Mon – Sat 8.45 – 18.30, Sun 10.00 – 15.00
Hexham	Lloyds Pharmacy	Hexham Primary Care	01434 603596	Mon – Fri 8.00 – 19.00, Sat 9.00 – 12.00
Hexham	Tesco Pharmacy	Tynedale Retail Park	01434 719847	Mon 8.00 – 22.30, Tue – Fri 6.30 – 22.30, Sat 6.30 – 22.00, Sun 10.00 – 16.00
Jesmond **	Boots the Chemist	53 St Georges Terrace	0191 2813579	Mon – Fri 8.45 – 17.45, Sat 9.00 – 17.30
Killingworth	Alliance Pharmacy	Morrison Centre	0191 2683114	Mon – Fri 9.00 – 18.00 Sat 9.00 – 17.30, Sun 10.00 – 16.00
Kingston Pk	Boots the Chemist	Kingston Park Retail Pk	0191 2715073	Mon – Fri 8.00 – 24.00 Sat 8.00 – 22.00, Sun 11.00 – 17.00
Lynemouth	Lynemouth Pharmacy	5 West Market Street	01670 860355	Mon – Fri 9.00 – 18.00, Sat 9.00 – 17.00
Morpeth	Wellway Pharmacy	The Surgery	01670 510005	Mon – Fri 8.00 – 20.00, Sat 9.00 – 15.00
North Shields	Tesco Pharmacy	Norham Road	0345 6779513	Mon 8.00 – 22.30, Tues – Fri 6.30 – 22.30 Sat 6.30 – 22.00, Sun 10.00 – 16.00
Wallsend	Fairmans	22-24 High Street West	0191 2623522	Mon – Fri 9.00 – 18.00, Sat 9.00 – 16.00
Whitley Bay	Morrison Pharmacy	Hillheads Road	0191 2521647	Mon – Fri 8.30 – 20.00, Sat 8.00 – 20.00, Sun 10.00 – 16.00

** These pharmacies have a contract to supply medication to the hospices and therefore may have immediate stock availability of additional medication if the patient's usual pharmacy is encountering difficulties with supply.

Community 24 Hour Advice for Health Care Professionals

