END OF LIFE MEDICINES INFORMATION PACK

serving the local community

St Nicholas Hospice Care

A Registered Charity No. 287773

Advice on end of life medication is available from the nursing and medical team at St Nicholas Hospice Care - telephone 01284 766133.

Many drugs used in palliative care (especially drug combinations in syringe driver) are used outside of the product licence or datasheet recommendations. However, there is wide experience of their use in palliative care. The responsibility for prescribing is taken by the prescriber (usually a doctor). Practitioners should be aware when using drugs in a manner which falls outside the product licence specification, and should be able to support their practice e.g. with references.

October 2012

ANTICIPATING END OF LIFE

When a patient is

- Deteriorating day by day
- Taking only sips of water
- No longer able to take tablets consistently
- Mostly bedbound
- May be drowsy

Time is getting short

- Prognosis days if deteriorating day by day
- Explain need to focus on comfort measures, ensure analgesia
- Confirm preferred place of care / death

Consider

- Is ongoing care in current location practical? – what else needs to be arranged
- Who else needs to know / who do they want to see / be around
- Explain process of dying to relatives – increasing drowsiness, withdrawal, body not able to utilise food, reduced ability to swallow

END OF LIFE MEDICINES

To ensure common symptoms in the terminal phase eg pain, secretions and agitation are anticipated and can be managed using anticipatory drugs
Consider:

- which medicines can be stopped
- which need to be continued or replaced (established analgesics, anti-emetics, anticonvulsants) for ongoing symptom control possibly by continuous subcutaneous infusion (CSCI) in a syringe driver
- many tablets can be prescribed as oral liquids
- what drugs need to be made available as PRN (as needed) medicines: prescribe and give all injections by subcutaneous route (SC)

5 common medications used in end of life care:

ANALGESIC: provides background and breakthrough (as needed) analgesia

ANTI EMETIC: continue existing anti-emetic if effective

ANTISECRETORY: provide as needed and start CSCI as soon as any rattle starts

RELAXANT / SEDATIVE: for agitation

ANTICONVULSANT: Midazolam 20 - 30mg/24hours by CSCI is usually sufficient to manage seizures which have required anticonvulsants

ANALGESICS

PRN (as needed) doses – equivalent to 1/6 of 24 hour dose given as needed 2 - 4 hourly
The correct dose is that which relieves pain for 4hrs – this may be less or more than 4 hourly equivalent. If pain persists increase by 1/3 to 1/2 or guided by PRN doses used.

The **dose** of opioid in a **CSCI** by syringe driver should be determined by the previous effective dose of medication used by the patient for pain control (regular and breakthrough doses):

Guideline 24 hour doses by CSCI (Syringe Driver)

On **no opioids** (eg Paracetamol only)	use 5mg - 10mg **Morphine** or **Diamorphine**
On **full dose Codeine** (240mg/day)	use 20mg - 30mg **Morphine** or **Diamorphine**
On **Morphine**	use equivalent dose **Morphine** 1/2 oral morphine dose) or **Diamorphine** (1/3 oral Morphine dose)
On **Oxycodone**	use equivalent dose **Oxycodone** or **Diamorphine** (1/2 oral Oxycodone dose) SC Diamorphine and Oxycodone are equivalent mg for mg

PATCHES

If on **Fentanyl patch** leave patch in place, **replace when due**.

If additional pain relief required continue with patch at usual dose and use Diamorphine in syringe driver with dose based either:

a) On patient use of breakthrough medication OR
b) Calculated as equivalent to 1/3 to 1/2 of Fentanyl patch 24 hour equivalent thus increasing total opioid dose by 30-50%

Divide the patch dose by 5 to calculate the 4 hourly SC Diamorphine dose eg 75mcg per hour patch divided by 5 = 15mg SC 4 hourly Diamorphine breakthrough dose. Multiply by 6 for 24 hour dose. See conversion chart.

- For **other opioids** use conversion chart or call for advice
- If indication is renal failure consider using **Alfentanil**

ANTIEMETICS

On antiemetic:	Continue current effective antiemetic in similar dose
If patient starting an opioid:	use 2.5mg **Haloperidol** /24 hours unless contraindicated or 5mg - 10mg **Levomepromazine** / 24hrs

Avoid problems:

Consider the potential need to add Hyoscine to syringe driver mix for secretions as Cyclizine and Hyoscine Butylbromide (Buscopan) tend to crystallise thus making the infusion ineffective. If the patient is established on Cyclizine either change to Levomepromazine (5mg-25mg) for nausea or use Glycopyrronium rather than Hyoscine for secretions

ANTISECRETORY – give early PRN as needed and continue by adding in to syringe driver

Starting an antisecretory in the CSCI as soon as secretions start to be audible can prevent them becoming established. In the last days or hours respiratory secretions often build up and may cause distress to the patient and/or relatives. The key to management is not to let them become established as once they have built up they are difficult to clear.

PRN dose:

Hyoscine Butylbromide	20mg subcutaneously 2 - 4 hourly
Glycopyrronium	200mcg - 400mcg 2 - 4 hourly

CSCI:

Use	Hyoscine Butylbromide	60mg - 120mg over 24 hours
Or	Glycopyrronium	120mcg - 2400mcg over 24 hours (1.2mg - 2.4mg over 24 hours)

Hyoscine Hydrobromide can be used but is more likely to cause agitation as more crosses the blood-brain barrier.

RELAXATION / SEDATION

Many patients become agitated in their last hours or days and this is often the reason why out of hours services are called.

Lorazepam 0.5mg - 1mg sublingually, can be given by relatives/carers 2 - 4 hourly PRN as needed.

Midazolam subcutaneously PRN/stat works quickly – in 10 - 15 minutes and lasts about 2 hours. If agitation is likely to recur; consider adding Midazolam to CSCI.

PRN doses:
Midazolam is 2.5mg - 5mg 1 - 2 hourly.
Larger doses e.g. 5mg - 10mg Midazolam may be needed if patient already on more than 20mg/24hours in syringe driver.

CSCI Starting Doses:
Midazolam 10mg - 20mg is usually enough for mild to moderate agitation in a patient not previously on sedatives.

Or Levomepromazine 25mg - 75mg. Severely distressed patients, heavy drinkers or those previously on anti psychotics may require higher doses or both agents together (call for advice).

If patient already on Benzodiazepine - consider using Midazolam in CSCI
If patient already on antipsychotic – consider using Levomepromazine in CSCI

End of Life Medicines in Parkinson's Disease

- Drugs to avoid: Haloperidol, Metaclopramide, Levomepromazine, Prochloperazine, Risperidone and Olanzapine – all reduce dopamine
- Do not stop Levodopa suddenly (neuroleptic malignant symdrome) – consider dispersible medicines via nasogastric tube or conversion to Rotigitine patch (consult medicines information WSH for dose equivalents)

AMPOULES AVAILABLE

	Ampoule sizes:	Usual doses/24 hours:
Cyclizine	50mg in 1ml	150mg
Haloperidol	5mg in 1ml	5mg - 10mg for nausea
Levomepromazine	25mg in 1ml	5mg - 25mg for nausea
Metoclopramide	10mg in 2ml	30mg - 60mg for nausea
Midazolam	10mg in 2ml	10mg - 60mg for agitation
Hyoscine Butylbromide	20mg in 1ml	60mg - 120mg for secretions
Glycopyrronium	200mcg in 1ml or 600mcg in 3ml	1200mcg - 2400mcg for secretions
Diamorphine	5mg, 10mg, 30mg, 60mg, 100mg, 500mg amps	
Morphine sulphate	10mg, 15mg, 20mg and 30mg /ml all in 1 and 2ml amps	
Oxycodone	10mg in 1ml, 20mg in 1ml and 50mg in 1ml amps	

Writing a prescription for End of Life Drugs

Consider **how many days** supply is needed – enough to cover a weekend and the time needed to arrange further supplies - 3 days minimum, 5 days more comfortable

Provide enough for at least **3 - 4 PRN (as needed) doses** per day as well as for **CSCI** (syringe driver)

Prescribe

- on FP10 to obtain medicines and
- on Syringe Driver and PRN (as needed) charts. Provide a range of doses, this will allow dose adjustment as required.
- Complete directions to administer medications for District / Marie Curie / trained nurses and as a guideline for out of hours doctors who may be called.

For example, a CSCI containing:

Diamorphine 20mg - 30mg
Haloperidol 2.5mg
Water for injection
Remember to prescribe anticipatory medications for example:
Midazolam 10mg - 30mg
Hyoscine Butylbromide 60mg - 120mg
Remember appropriate PRN (as needed) doses

Prescribe on FP10

1. Diamorphine 10mg (ten) ampoules times 15 (fifteen)
   To be given as 20mg (twenty)/24 hours by CSCI

2. Diamorphine 5mg ampoules (Five mg) times 15 (Fifteen)
   To be given 2.5mg - 5mg sc 2 - 4 hourly for pain

3. Haloperidol 5mg amp times 5
   To be given as 2.5mg/24 hours by CSCI

4. *Midazolam amp 10mg/2ml (ten in two) times 20 (twenty) * NB now a CD
   To be given by CSCI at 10mg - 30mg per 24 hours
   To be given as 2.5mg - 5mg sc 2 - 4 hourly as needed for agitation

5. Hyoscine Butylbromide 20mg/1ml amp times 20
   To be given as 60mg - 120mg/24hours by CSCI
   And 20mg sc 2 - 4 hourly as needed for secretions

6. Water for injection 10ml amps x 15

Or

7. 0.9% saline 10ml amps x15

8. Ensure supply of syringes, needles and sharps box

Also complete directions to administer.

Starting / Setting Up a Syringe Driver (McKinley T34)

- If symptomatic give stat dose as syringe driver takes 2 - 4 hours from setting up to achieve effect.
- The McKinley T34 is calibrated in ml/hour
- A 30ml Luer lock syringe is recommended
- The maximum volume of fluid in a 30ml syringe is 22ml
- If a 20ml Luer lock system is used, the maximum volume of fluid in a 20ml syringe is 17ml
- Lock on volume to be infused over 24 hours
- To stop syringe driver – unlock cassing (key in syringe driver medication box), press Stop key

Diluent
0.9% saline (not with Cyclizine) or water for injections (WFI)
Site reactions are often less with saline, especially with Levomepromazine

If site reactions are a problem – separate the drugs into two syringe drivers, or dilute even further, or add 1 mg of Dexamethasone. Consider using a plastic rather than metal cannula.

Mixtures to avoid:
Cyclizine and saline – it will crystallise and stop the infusion
Cyclizine and Metoclopramide (antagonistic and incompatible)
Cyclizine and Hyoscine (crystallises - often in the night)
Metoclopramide and Hyoscine (antagonistic and incompatible)
Avoid more than 1mg Dexamethasone combined with other medicines.

Compatible mixtures:
Morphine/Diamorphine/Oxycodone are compatible with
Haloperidol/Levomepromazine/Midazolam/Hyoscine/Glycopyrronium

Dexamethasone doses greater than 1mg should be given alone.

For more complex combinations consult database or call for advice.

Advice on end of life medication is available from the nursing and medical team at St Nicholas Hospice Care - telephone 01284 766133.

For further information contact:

WSH Pharmacy 01284 713109

www.stnicholashospice.org.uk

Palliative Adult Network Guidelines – www.book.pallcare.info

SYRINGE DRIVER DOSE GUIDANCE FOR OPIOID NAIVE PATIENT

For use in community and care homes

Please allow dose adjustment to maximise symptom control

One, or all of these may be needed and should be available for optimum End of Life care.

SYRINGE DRIVER : For administration by continuous subcutaneous infusion

Drug	Dose	Duration	Diluent
DIAMORPHINE	**5mg - 10mg**	**24 hours**	**Water for injection**
If required for relief of pain / dyspnoea			
HALOPERIDOL	**2.5mg - 5mg**	**24 hours**	**Water for injection**
If required for relief of nausea/vomiting			
BUSCOPAN	**60mg - 120mg**	**24 hours**	**Water for injection**
If required for relief of respiratory tract secretions, or as an anti-spasmodic			
MIDAZOLAM	**10mg - 20mg**	**24 hours**	**Water for injection**
If required for relief of agitation / terminal restlessness			

PRN (AS NEEDED) DOSE medication by subcutaneous injection

Drug	Dose	Frequency	Max dose/24h
DIAMORPHINE	**2.5mg - 5mg**	**2 - 4hourly PRN**	
If required for relief of pain / dyspnoea			
HALOPERIDOL	**1mg - 2mg**	**2 - 4hourly PRN**	
If required for relief of nausea/vomiting			
BUSCOPAN	**20mg**	**2 - 4hourly PRN**	
If required for relief of respiratory tract secretions, or as an anti-spasmodic			
MIDAZOLAM	**2.5mg - 5mg**	**2 hourly PRN**	
If required for relief of agitation / terminal restlessness			

LORAZEPAM 1mg tablet	**0.5mg - 1mg** **Sublingual / oral**	**2 - 4 hourly PRN**	**2mg - 3 mg max/24hours**
for breathlessness or anxiety/agitation whilst waiting for professional support			

SYRINGE DRIVER DOSE GUIDANCE FOR PATIENT ALREADY ON OPIOID

For use in community and care homes

Please allow dose adjustment to maximise symptom control

One, or all of these may be needed and should be available for optimum End of Life care.

SYRINGE DRIVER: For administration by continuous subcutaneous infusion

Drug	Dose Range	Duration	Diluent NaCl / Water
		24 hours	
If required for relief of pain / dyspnoea			
		24 hours	
If required for relief of nausea/vomiting			
		24 hours	
If required for relief of respiratory tract secretions, or as an anti-spasmodic			
		24 hours	
If required for relief of agitation / terminal restlessness			

PRN (AS NEEDED) dose medication by subcutaneous injection

Drug	Dose	Frequency	Max dose/24h
If required for relief of pain / dyspnoea			
If required for relief of nausea/vomiting			
If required for relief of respiratory tract secretions, or as an anti-spasmodic			
If required for relief of agitation / terminal restlessness			

LORAZEPAM 1mg tablet	**0.5mg - 1mg Sublingual / oral**	**2 - 4 hourly PRN**	**2mg - 3 mg max/24hours**
for breathlessness or anxiety/agitation whilst waiting for professional support			

A Guide to Equivalent Doses for Opioid Drugs

N.B - this is to be used as a guide rather than a set of definitive equivalences. Most data on doses is based on single dose studies so is not necessarily applicable in chronic use, also individual patients may metabolise different drugs at varying rates. The advice is always to calculate doses using Morphine as standard and to adjust then to suit the patient and the situation. Some of these doses have by necessity been rounded up or down to fit in with the preparations available.

Oral Morphine			**Subcutaneous Morphine**		**Subcutaneous Diamorphine (oral morphine/3)**		**Oral Oxycodone**			**Subcutaneous Oxycodone (½ - ⅔ oral dose)**		**Fentanyl Transdermal**	**Transtec**
4-hr dose (mg)	12-hr SR dose (mg)	24-hr total dose (mg)	4-hr dose (mg)	24-hr total dose (mg)	4-hr dose (mg)	24-hr total dose (mg)	4-hr dose (mg)	12-hr SR dose (mg)	24-hr total dose (mg)	4-hr dose (mg)	24-hr total dose (mg)	Patch Strength (mcg)	Patch Strength (mcg/hr)
5	15	30	2.5	15	1.5	10	2.5	5 or 10	15	1.0-2.0	7.5	12	35
10	30	60	5	30	3	20	5	15	30	2.5-3.5	15	12	35
15	45	90	7.5	45	5	30	7.5	25	50	3.75-5.0	25	25	52.5
20	60	120	10	60	7.5	40	10	30	60	5.0-7.0	30	37	70
30	90	180	15	90	10	60	15	45	90	7.5-10	45	50	105
40	120	240	20	120	12.5	80	20	60	120	10-12.5	60	62	140
50	150	300	25	150	15	100	25	75	150	12.5-15	75	75	-
60	180	360	30	180	20	120	30	90	180	15-20	90	100	-
70	210	420	35	210	25	140	35	105	210	17.5-20	100	112	-
80	240	480	40	240	27.5	160	40	120	240	20-30	120	125	-
90	270	540	45	270	30	180	45	135	270	Max Dose	135	150	-
100	300	600	50	300	35	200	50	150	300	Sub Cut	150	150	-

END OF LIFE DRUGS – as agreed by Suffolk PCT

INJECTIONS	Purpose	Dose range for bolus subcutaneous injection	Maximum dose in 24 hours	Syringe driver s/c 24 hours CSCI	Comments
Cyclizine	Antiemetic	**50mg every 6-8 hrs**	**150mg**	**100 or 150mg**	**Use water for injection**
Diamorphine (Schedule 2 CD)	Analgesic	Starting dose 2.5mg to 5mg every 2 hours See fact sheets or BNF for conversion from other opioid analgesics	No maximum	Initially 10mg up to 30mg but varies depending on conversions from oral medications and opiate tolerance	In patients needing rapid escalation of doses or doses above 200mg consult a specialist. A diluent **(water for injection or sodium chloride 0.9% injection)** must be prescribed for diamorphine
Glycopyrronium	Anti-secretory agent	200micrograms to 400micrograms every 6 hours	2400mcg	1200 up to 2400 micrograms	Up to 2.4mg can be given by continuous subcutaneous infusion
Haloperidol	Antiemetic	0.5mg up to 2.5 once or twice a day	10mg	2.5 up to 5mg	
	Anxiety/agitation	1mg up to 5mg repeat every 30 minutes if required	20mg	2.5 up to 10mg	
Hyoscine Butylbromide	Anti-spasmodic / intestinal colic	20mg every 4 hours	120mg	60 up to 120mg	Higher with specialist advice
	Bronchial secretions	20mg every 4 hours	120mg	60 up to 120mg	

PTO

Levomepromazine	Antiemetic	5mg or 6.25mg once or twice a day	12.5mg 37.5 max for anti-emesis	12.5mg	Long half life, can be given as a single dose at night if sedation a problem
	Terminal agitation	25mg every 4 hours Start with 12.5mg in elderly patients	150mg	25 up to 75mg	Higher with specialist advice
Midazolam (Schedule 3 CD Jan 08)	Anxiety	2.5mg to 5mg every 2 hours	60mg	10 up to 20mg	Over 40mg get specialist advice
	Terminal agitation/ confusion	2.5mg to 5mg every 2 hours Some need higher doses - get specialist advice	60mg	10mg gradually titrating up	Bolus dose short acting – consider infusion by SD Over 40mg /24h get specialist advice
	Anticonvulsant	5mg repeated if required	60mg	20 or 30mg	The buccal route may be used for patients who are fitting – ampoule contents can be used NB Lorazepam if patient not palliative
Lorazepam	Breathlessness or anxiety/agitation	0.5mg to 1mg sublingually	2-3mg	ORAL/SUBLINGUAL	for the patient to take whilst waiting for professional support

serving the local community

St Nicholas Hospice Care

A Registered Charity No. 287773

St Nicholas Hospice Care

Hardwick Lane, Bury St Edmunds, Suffolk IP33 2QY

Tel: Switchboard 01284 766133 Community Team 01284 702525

Fax: Referrals Office 01284 732000 Community Team 01284 715590

www.stnicholashospice.org.uk