

If more information is required please seek help from specialist palliative care

Opioid dose conversion chart, syringe driver doses, rescue/prn doses and opioid patches

Use the conversion chart to work out the equivalent doses of different opioid drugs by different routes.
The formula to work out the dose is under each drug name. Examples are given as a guide

Oral opioid mg /24 hour (Divide 24 hour dose by six for 4 hourly prn oral dose)		Subcutaneous infusion of opioid Syringe driver (SD) dose in mg per 24 hours (or micrograms for alfentanil where stated)				Subcutaneous prn opioid Dose in mg every 4 hours injected as required prn NB Alfentanil in lower doses in micrograms				Opioid by patch Dose microgram/hour	
Morphine 24 hour	Oxycodone 24 hour	Diamorphine sc 24 hour	Morphine sc 24 hour	Oxycodone sc 24 hour	Alfentanil sc 24 hour (500microgram/mL)	Diamorphine 4 hour	Morphine 4 hour	Oxycodone 4 hour	Alfentanil 2 to 4 hour (500microgram/ mL)	Fentanyl normally change every 72 hours	Buprenorphine B=Butrans change 7 days T = Transtec change 96 hrs (4 days)
	Calculated by dividing 24hr oral morphine dose by 2	Calculated by dividing oral morphine dose by 3	Calculated by dividing oral morphine dose by 2	Calculated by dividing oral oxycodone dose by 2	Calculated by dividing 24 hour oral morphine dose by 30	Prn dose is one sixth (1/6 th) of 24 hour subcutaneous (sc) syringe driver dose plus opioid patches if in situ. NB Alfentanil injection is short acting. Maximum 6 prn doses in 24 hours. If require more seek help				Conversions use UK SPC	
20	10	5	10	5	500mcg	1	2	1	100mcg	(6)	B 10
45	20	15	20	10	1500mcg	2	3	2	250mcg	12	B 20
90	45	30	45	20	3mg	5	7	3	500mcg	25	T 35
140	70	45	70	35	4500mcg	8	10	5	750mcg	37	T 52.5
180	90	60	90	45	6mg	10	15	8	1mg	50	T 70
230	115	75	115	60	7500mcg	12	20	10	1.25mg	62	T 70 + 35
270	140	90	140	70	9mg	15	25	10	1.5mg	75	T70 + 52.5
360	180	120	180	90	12mg	20	30	15	2mg	100	T 140
450	225	150	225	110	15mg	25	35	20	2.5mg	125	-
540	270	180	270	135	18mg	30	45	20	3mg	150	-
630	315	210	315	160	21mg	35	50	25	3.5mg	175	-
720	360	240	360	180	24mg	40	60	30	4mg	200	-

Equivalent doses if converting from oral to sc opioid

**Calculation of breakthrough/
rescue / prn doses**

Oral prn doses:

- Morphine or Oxycodone: 1/6th of 24
hour oral dose

Subcutaneous:

- Morphine & Oxycodone: 1/6th of 24
hour sc syringe driver (SD) dose
- Alfentanil: 1/6th of 24 hour sc SD dose
 - Short action of up to 2 hours
 - Seek help If reach Maximum
of 6 prn doses in 24 hours

(For ease of administration, opioid doses
over 10mg, prescribe to nearest 5mg)

Renal failure/impairment GFR<30mL/min:
Morphine/Diamorphine metabolites
accumulate and should be avoided.

- Fentanyl patch** if pain is stable.
- Oxycodone** orally or by infusion if mild
renal impairment
- If patient is dying & on a fentanyl or
buprenorphine patch top up with
appropriate **sc oxycodone** or **alfentanil**
dose & if necessary, add into syringe
driver as per renal guidance
- If GFR<15mL/min and unable to
tolerate oxycodone use alfentanil sc**

**If unsure please seek help from
palliative care**

Fentanyl and buprenorphine patches in the dying/moribund patient
Continue fentanyl and buprenorphine patches in these patients.

- Remember to change the patch(es) as occasionally this is forgotten!
 - Fentanyl patches are more potent than you may think
- If pain occurs whilst patch in situ
- Prescribe 4 hourly prn doses of subcutaneous(sc) morphine unless contraindicated.
 - Use an alternative sc opioid e.g. **alfentanil** or **oxycodone** in patients with
 - poor renal function,**
 - morphine intolerance
 - where morphine is contraindicated
 - Consult pink table when prescribing 4 hourly prn subcutaneous opioids**
- Adding a syringe driver (SD) to a fentanyl or buprenorphine patch**
- If 2 or more rescue/ prn doses are needed in 24 hours, start a syringe driver with appropriate opioid and continue patch(es). The opioid dose in the SD should equal the total prn doses given in the previous 24 hours up to a maximum of 50% of the existing regular opioid dose. Providing the pain is opioid sensitive continue to give prn sc opioid dose & review SD dose daily.
- E.g. Patient on 50 micrograms/hour fentanyl patch, unable to take prn oral opioid and in last days of life. Keep patch on. Use appropriate opioid for situation or care setting. If 2 extra doses of 15 mg sc morphine are required over the previous 24 hours, the initial syringe driver prescription will be morphine 30mg/24 hour. Remember to look at the dose of the patch and the dose in the syringe driver to work out the new opioid breakthrough dose each time a change is made.*
- Always use the chart above to help calculate the correct doses.

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Anticipatory Drugs and Syringe Driver Chart

This chart is intended for use in all care settings

Cut Out

If a patient transfers to a **care home** the original chart should remain in the hospital notes and a **new chart written** to go with the patient. **All other transfers, to patient's own home, community hospital, community unit or hospice the original chart should go with the patient.**

Information for prescribers

Prescribe approved name of drug entered in **CAPITALS**

Cancel Drugs

- Discontinue prescriptions by clearly crossing through the whole prescription, with the date discontinued & signature.
- Do not alter an existing prescription always rewrite a new syringe driver prescription in a new box
- There is space for 4 syringe driver prescriptions
- Always check for allergies.

Dilutents

Generally use water for injection.

- Never use 0.9% sodium chloride with cyclizine as it will crystallise

Use 0.9% sodium chloride for

- Levomopromazine by itself
- Syringe driver combinations containing octeotide, methadone, ketorolac, ketamine or furosemide

Syringes

- Use 20mL syringes or 30mL if larger volume required.

Opioids

- Prescriptions for opioids & CDs must be prescribed in words and figures. CDs now include midazolam & phenobarbitone
- Write in whole numbers and where possible avoid decimals.
- Document dose calculations in the medical notes.
- The prn dose ranges should reflect the total amount of regular opioid the patient is receiving from all routes (ie syringe driver and fentanyl) or buprenorphine patch if in situ). The prn dose is one sixth of the 24 hour dose of regular opioids if patient can tolerate this.
- Calculate the increased opioid dose requirements for the next syringe driver based on the number of additional prn doses over the previous 24 hours (ensuring the pain is opioid sensitive)
- Remember to prescribe regular medications (including opioid patches) and prn medications (when required) on the chart.

Information for nurses

- Use clear adhesive dressing over the infusion site
- Patients with syringe drivers should be checked every 4 hours in institutions and as a minimum every 24 hours in a patient's home.
- If the patient requires additional medication (analgesic/ sedative/antiemetic etc) give a subcutaneous dose of the appropriate drug, as prescribed on the prn section of the drug chart. If ineffective seek medical advice.
- NB each non-opioid drug has a 24 hour maximum.
- If you are giving opioids (e.g. morphine, oxycodone, alfentanil) to a patient who has not had one before (opioid naive), or to a patient who has had a dose increase observe for signs of:
 - Drowsiness
 - Confusion/hallucinations
 - Nausea / vomiting
 - Reduced respiratory rate
 - Twitching
- Observe patients closely and report any symptoms you are concerned about to the doctor. The opioid may need to be discontinued, reduced or changed to a different opioid.
- In exceptional cases naloxone may be required to reverse opioid side effects. Refer to naloxone infusion guidelines.

Resources for information

For dying patients refer to

- care plan for last days of life documentation

For all other information consult

- website for algorithms and conversion charts
- [www.york.nhs.uk/Our-Services/GP hub or www.york.nhs.uk/Our-Services/palliative care](http://www.york.nhs.uk/Our-Services/GP-hub-or-www.york.nhs.uk/Our-Services/palliative-care)

Please **seek advice** if uncertain about drug compatibilities

- Specialist palliative care/ hospice
- Medicines information
- The Syringe Driver: Continuous subcutaneous infusions in palliative care 3rd edition Andrew Dickman, Jenny Schneider

For patients with renal failure

Look at information in red on:

- Anticipatory drugs section
- use oxycodone or alfentanil as sc opioid of choice

If GFR<15mL/min and unable to tolerate oxycodone use alfentanil (500microgram/mL)

Contact for further help & advice

York Specialist Palliative Care Team (SPCT)

In hours	- Community SPCT 01904 724476 - Hospital SPCT 01904 725835 - St Leonards Hospice 01904 708553
Out of hours	- GP OOH 0845 056 8060 - St Leonards Hospice 01904 708553

Scarborough Specialist Palliative Care Team (SPCT)

In hours	- Community (macmillans) 01723 356043 - Hospital SPCT 01723 342446 - St Catherine's Hospice 01723 351421
Out of hours	Palcall 01723 354506

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Saint Catherine's Hospice

St Leonard's Hospice

York Teaching Hospital NHS Foundation Trust

Prn Chart for Anticipatory Drugs If patient on opioid patch and syringe driver the prn opioid dose should reflect this
Frequency of some medications may be altered at discretion of prescriber. Remember to write opioid dose in words and figures

Antiemetics

- **Haloperidol** (5mg/mL) **prescribed** as an **anticipatory**
Indications: Opioid or chemically induced nausea
- **Levomepromazine** (25mg/mL) **prescribed** as **anticipatory**
Indications: Broad spectrum antiemetic (also anti-agitation medication)
- **Metoclopramide** (10mg/mL) **not prescribed routinely** unless clinically indicated
Indications: Prokinetic, pushes gut contents forward
Dose:10mg tds /**prn** Syringe driver SD 30 to 60mg /24 hours
- **Cyclizine** (50mg/mL) **not prescribed routinely** unless clinically indicated
Indications: Raised intracranial pressure and bowel obstruction
Dose: **25** to 50mg tds **prn** Syringe driver SD **75** to 150mg /24 hours
Start low (dose in red) or avoid in renal /heart/ liver failure

Antiemetics used together

- Haloperidol + Cyclizine
NB use Levomepromazine if above ineffective
- Metoclopramide + Levomepromazine

Antiemetics not used together

- Metoclopramide + cyclizine: opposing effect
- Haloperidol + levomepromazine: dopaminergic
- Haloperidol + metoclopramide: dopaminergic

Prescribing Anticipatory drugs - up to five depending on antiemetic combination

Opioid

- Is patient renally compromised? If so avoid morphine and use oxycodone or alfentanil
- Dose depends on whether patient opioid naïve or has been on regular opioids

Anti agitation

- Midazolam start low

Respiratory secretions

- Hyoscine Butylbromide (Buscopan) 20mg

Antiemetic

- Was drug effective orally? If so continue with same drug sc
- If patient requires two drugs to control nausea prescribe both
- For compatibility consult antiemetic table (to the left)

NOTE ON RECORDING: Enter actual dose given in DOSE column	Date	Time	Route	Dose	Sig	Date	Time	Route	Dose	Sig	NOTE ON RECORDING: Enter actual dose given in DOSE column	Date	Time	Route	Dose	Sig	Date	Time	Route	Dose	Sig
① Drug Appropriate opioid											④ Drug MIDAZOLAM (10mg/2mL)										
Date						Date					Date						Date				
Dose						Dose					Dose 2 to 5mg Start low in renal patients						Dose				
SC						SC					SC						SC				
Instructions 2 to 4 hourly prn Prescriber may alter frequency if indicated.						2 - 4 hourly prn. May need 10mg for bleeds Max 60mg in 24 hours (prn +S/driver) Max usually 30mg in 24 hours in renal failure (prn +S/driver)															
Full Signature & bleep						Full Signature & bleep					Full Signature & bleep						Full Signature & bleep				
Pharm						Pharm					Pharm						Pharm				
Supply						Supply					Supply						Supply				

② Drug HALOPERIDOL (5mg/mL) (nausea)						⑤ Drug LEVOMEPRMAZINE (25mg/mL)															
Date						Date					Date						Date				
Dose 500 micrograms to 1mg Start low in renal patients						Dose 5 to 6.25mg Start low in renal patients					Dose						Dose				
SC						SC					SC						SC				
Instructions 8 hourly prn Max: 5mg in 24 hours (prn + S/driver) Lower max in renal failure						8 hourly prn Nausea Max: 25mg in 24 hours Agitation consult Palliative Care Team															
Full Signature & bleep						Full Signature & bleep					Full Signature & bleep						Full Signature & bleep				
Pharm						Pharm					Pharm						Pharm				
Supply						Supply					Supply						Supply				

③ Drug HYOSCINE BUTYLBROMIDE (20mg/mL) BUSCOPAN for colic & resp secretions						⑥ Drug															
Date						Date					Date						Date				
Dose 20mg						Dose					Dose						Dose				
SC						SC					SC						SC				
Instructions 4 hourly prn Max 240mg in 24 hours (prn +S/driver)						Instructions					Instructions						Instructions				
Full Signature & bleep						Full Signature & bleep					Full Signature & bleep						Full Signature & bleep				
Pharm						Pharm					Pharm						Pharm				
Supply						Supply					Supply						Supply				

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T34 set up - Complete both shaded and white area checklist

T34 Monitoring - Complete white area checklist

4 hourly checks in Hospital/ Community Hospital/ Care Home/ Hospice. Minimum daily check in Community.

Time	0200	0600	1000	1400	1800	2200	0200	0600	1000	1400	1800	2200
Date & time of S/D set up / check												
Asset No												
Prescription used e.g. No. 1 to 4												
Site changed Yes or No												
Location of site used												
Line changed Yes or No												
Battery % * at set up												
Rate in mL												
Volume to be infused (VTBI) mL												
Volume infused in mL												
Site Ok Yes or No												
Syringe and line clear Yes or No												
Battery % *												
Key pad lock on												
Signature / Initials												

4 hourly checks in Hospital/ Community Hospital/ Care Home/ Hospice. Minimum daily check in Community.

Time	0200	0600	1000	1400	1800	2200	0200	0600	1000	1400	1800	2200
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Volume infused in mL												
Site Ok Yes or No												
Syringe and line clear Yes or No												
Battery % *												
Key pad lock on												
Signature / Initials												

Battery

- Check battery *
- Change if 40% in patients home
- Change 15% in hospital/hospice

Syringe contents

- Check drugs in syringe or line are clear with no crystallisation

Is the syringe driver working ?

- Check set up
- Check battery

First name:

DOB:

NHS No:

Surname:

Hosp No:

GP/Cons:

Enter details of known allergies/sensitivities and reaction or write 'nil known'

Prescriber's signature

This section MUST be completed before medicines are given

bleep:

Ward

Main chart

Supplementary chart

First name:

DOB:

NHS No:

Surname:

Hosp No:

GP/Cons:

T34 set up - Complete both shaded and white area checklist **T34 Monitoring** - Complete white area checklist

4 hourly checks in Hospital/ Community Hospital/ Care Home/ Hospice. Minimum daily check in Community.												
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Key pad lock on												
Signature / Initials												

Battery	• Check battery *	Syringe contents	• Check drugs in syringe or line are clear with no crystallisation	Is the syringe driver working ?	• Check set up
	• Change if 40% in patients home				• Check battery
	• Change 15% in hospital/hospice				

Prn Chart for Anticipatory Drugs

If patient on opioid patch and syringe driver the prn opioid dose must take account of this

Frequency of some medications may be altered at discretion of prescriber. Remember to write opioid dose in words and figures

NOTE ON RECORDING: Enter actual dose given in DOSE column			Date	Time	Route	Dose	Sig	Date	Time	Route	Dose	Sig			
⑦ Drug															
Date	Dose	SC O													
Instructions															
Full Signature & bleep	Pharm	Supply													
⑧ Drug															
Date	Dose	SC O													
Instructions															
Full Signature & bleep	Pharm	Supply													
⑨ Drug															
Date	Dose	SC O													
Instructions															
Full Signature & bleep	Pharm	Supply													
⑩ Drug															
Date	Dose	SC O													
Instructions															
Full Signature & bleep	Pharm	Supply													
NOTE ON RECORDING: Enter actual dose given in DOSE column			Date	Time	Route	Dose <th>Sig</th> <td colspan="3">NOTE ON RECORDING: Enter actual dose given in DOSE column</td> <td>Date</td> <td>Time</td> <td>Route</td> <td>Dose<th>Sig</th></td>	Sig	NOTE ON RECORDING: Enter actual dose given in DOSE column			Date	Time	Route	Dose <th>Sig</th>	Sig
⑪ Drug								⑪ Drug							
Date	Dose	SC O						Date			Dose	SC O			
Instructions								Instructions							
Full Signature & bleep	Pharm	Supply						Full Signature & bleep			Pharm	Supply			
⑫ Drug								⑫ Drug							
Date	Dose	SC O						Date			Dose	SC O			
Instructions								Instructions							
Full Signature & bleep	Pharm	Supply						Full Signature & bleep			Pharm	Supply			
⑬ Drug								⑬ Drug							
Date	Dose	SC O						Date			Dose	SC O			
Instructions								Instructions							
Full Signature & bleep	Pharm	Supply						Full Signature & bleep			Pharm	Supply			
⑭ Drug								⑭ Drug							
Date	Dose	SC O						Date			Dose	SC O			
Instructions								Instructions							
Full Signature & bleep	Pharm	Supply						Full Signature & bleep			Pharm	Supply			

Antimicrobials should have an indication and course length or review date recorded on the chart	
Non-administration codes	
1 Medication not required	6 Nil by mouth
2 Refused	7 Prescription not clear
3 Absent from ward	8 Unable to administer
4 Medication not available	9 Self medication
5 Unable to take	10 Self medication at home

Essential Regular Medication					
Supernorphine or hyoscyne patches, antitumgals, any topical or PR medications					

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Battery • Check battery * • Change if 40% in patients home • Change 15% in hospital/hospice Syringe contents • Check drugs in syringe or line are clear with no crystallisation Is the syringe driver working ? • Check set up • Check battery													

1 Syringe driver drug(s)

Dose
(CDs to be prescribed in words and figures)

1.

2.

3.

4. If advised by specialist palliative care team

Diluent (For advice read front sheet)

Route
SC

Duration
24 hours

Date

Prescriber Signature

2 Syringe driver drug(s)

Dose
(CDs to be prescribed in words and figures)

1.

2.

3.

4. If advised by specialist palliative care team

Diluent (For advice read front sheet)

Route
SC

Duration
24 hours

Date

Prescriber Signature

3 Syringe driver drug(s)

Dose
(CDs to be prescribed in words and figures)

1.

2.

3.

4. If advised by specialist palliative care team

Diluent (For advice read front sheet)

Route
SC

Duration
24 hours

Date

Prescriber Signature

4 Syringe driver drug(s)

Dose
(CDs to be prescribed in words and figures)

1.

2.

3.

4. If advised by specialist palliative care team

Diluent (For advice read front sheet)

Route
SC

Duration
24 hours

Date

Prescriber Signature

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T34 Monitoring - Complete white area checklist

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