

**Eastern Health and Social Services  
Board**

**Palliative Care**

Out of Hours  
Symptom advice leaflets  
Adult Palliative care patients

(Compiled by Macmillan GP Facilitators March 2008)

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# Control of Pain in Patients with Cancer

## **Assessment of Pain**

Pain not purely 'physical' may include:

- 1 psychological
- 2 social
- 3 cultural
- 4 financial
- 5 spiritual aspects

**Assessment, includes:**

### **1. History – from the patient and determine:**

- **Number and site of pain(s)**
- **Intensity / severity of pain(s)**
- **Radiation of pain**
- **Timing of pain**
- **Duration of pain**
- **Quality of pain**
- **Aggravating / relieving factors / sensory disturbances / associated power loss**
- **Type of pain e.g. neuropathic, visceral, somatic or mixed**
- **Analgesic drug history including dose and route of administration**
- **Impact of psychological factors e.g. anxiety or depression**
- **Effect on activities of daily living.**

### **2. Carry out a physical examination**

### **3. Identify the likely cause of pain**

### **4. Arrange for appropriate diagnostic investigations.**

### **5. Arrange for multidisciplinary professional assessment to include physiotherapy and occupational therapy.**

### **6. Review frequently for effectiveness and / or adverse effects of medication**

# Treatment of Pain

## Pharmacological Management – World Health Organisation Analgesic Ladder (1986)

### STEP 3: MODERATE TO SEVERE PAIN

#### OPIOID FOR MODERATE TO SEVERE PAIN + NON-OPIOID ± ADJUVANT

**Drug options**  
**First line**  
 - Morphine p.o.  
 - Diamorphine

**alternative opioids**  
 - Fentanyl  
 - Hydromorphone  
 - Oxycodone

### STEP 2: MILD TO MODERATE PAIN

#### OPIOID FOR MILD TO MODERATE PAIN PLUS A NON-OPIOID ± ADJUVANT

**Drug options**  
 - Codenie 60mg 6hrly  
 - Dihydrocodeine 60mg 6hrly

### STEP 1: MILD PAIN

#### NON-OPIOID ± ADJUVANT

**Drug options**  
 - Paracetamol 1g qid  
 - Non-steroidal anti-inflammatory drugs (NSAIDs)

### Moderate to Severe Pain

The oral route is the recommended route of administration and should be used where possible. Morphine is the oral opioid of choice. If the oral route is not appropriate Diamorphine is the recommended parenteral opioid of choice.

In the absence of optimal pain management or if adverse drug effects occur seek Specialist Palliative Care advice.

A trial of alternative opioids should be considered for moderate to severe pain where dose titration is limited by side effects of morphine / diamorphine.

### Prescribing notes

Ensure antiemetics and laxatives are available for the patient.

### Pain persisting or increasing (Mild to Moderate Pain)

Patients with mild to moderate pain should receive a weak opioid plus a non-opioid. Consider combination preparations e.g. co-codamol 30./500.

If the effect of a weak opioid for mild to moderate pain given regularly at its optimum dose is not providing adequate pain relief move to step three of the analgesic ladder.

Do not prescribe two paracetamol containing products.

### Mild Pain

Patients with mild pain should receive either a NSAID or paracetamol at licensed doses. The choice should be passed on a risk/benefit assessment for each individual patient. Paracetamol is commenced at 1g 6 hourly.

Patients receiving a NSAID who are at risk of gastrointestinal side effects should be prescribed a proton pump inhibitor or misoprostol.

# MORPHINE

## Initiating and Titrating Oral Morphine

- When initiating normal release morphine (ie Sevredol/Oramorph), start with 5-10mg orally at four hourly intervals (six times in 24 hours) with access to prn dosing, (Cautions: Patients with renal impairment or the elderly and frail may require reduced dose or alternative opioid.)
- Each day assess the pain control, severity of side effects and total amount of morphine required, including **breakthrough** doses, in the previous 24 hours.  
**Divide** the total amount required in the previous 24 hours by **six**. Prescribe this dose every four hours and alter the breakthrough analgesia dose accordingly (this is the same as the four hourly dose) i.e. one sixth of the total daily regular morphine dose.
- If a patient is unable or unwilling to use breakthrough doses but is still in pain, the dose of normal release morphine prescribed four hourly should be increased. The increase depends on the individual but is usually in 30-50% increments. If still in pain after 2-3 doses have been taken, increase by one third to one half. Caution: Pain may not be opioid sensitive and adjuvants may need to be considered.
- Once suitable pain control is achieved by the use of normal release morphine, conversion to the same total daily dose of modified release morphine (MST or MXL) should be considered e.g. normal release morphine 5mg 4 hourly = 30mg in 24 hours = MST 15mg bd = MXL 30mg od.
- **If pain control is not achieved in 48 hours or there are excessive side effects, contact your local Specialist Palliative Care Team for advice.**
- **Specialist Palliative Medical advice is recommended when initiating analgesic therapy in patients who have renal impairment, are on dialysis or are stopping dialysis.**
- **OPIOID TOXICITY: Presence of confusion, drowsiness, myoclonic jerks and often pin-point pupils. Can occur when dose has been markedly increased OR when renal failure ensues and active metabolites accumulate.**

## DIAMORPHINE – PARENTERAL ADMINISTRATION

- Patients requiring parenteral opioids (i.e. a patient who is vomiting or unable to swallow) should receive the appropriate dose of diamorphine via the subcutaneous route.
- To calculate the 24 hour dose of subcutaneous diamorphine, **divide** the total 24 hour oral dose of morphine by **three** (see chart page 12).
- Administer this dose of diamorphine subcutaneously in syringe driver over 24 hours.
- Patient should also be prescribed appropriate breakthrough dose of subcutaneous Diamorphine (i.e. 1/6 of 24 hour diamorphine dose)

### **Breakthrough analgesia (prn dosing)**

- Every patient on an opioid should have access to breakthrough analgesia (i.e. 1/6 of total daily opioid dose)
- Following the delivery of oral breakthrough analgesia, wait 30 minutes to assess the response.
- If pain persists, repeat analgesia and reassess in a further 30 minutes. If pain still persists, full reassessment of the patient is required.

# ALTERNATIVE OPIOIDS

## OXYCODONE

90% metabolised by the Liver and 10% metabolised by the kidneys.  
Accumulates less than morphine in patients with renal failure.

### **Immediate release oral preparation:**

- *OxyNorm* capsules and liquid
- titrated every 4-6 hours

### **Modified release oral preparation:**

- *OxyContin* tablet
- titrated every 12 hours

### **Parenteral oxycodone preparations:**

- *OxyNorm* injection

### **Conversion ratios:**

- Oral Morphine to Oral Oxycodone is approximately 2:1.

If a patient is already on morphine then the total 24-hour morphine dose should be divided by two for the equivalent 24-hour Oxycodone dose

e.g. 80mg morphine / 24 hours = 40 mg Oxycontin /24 hours

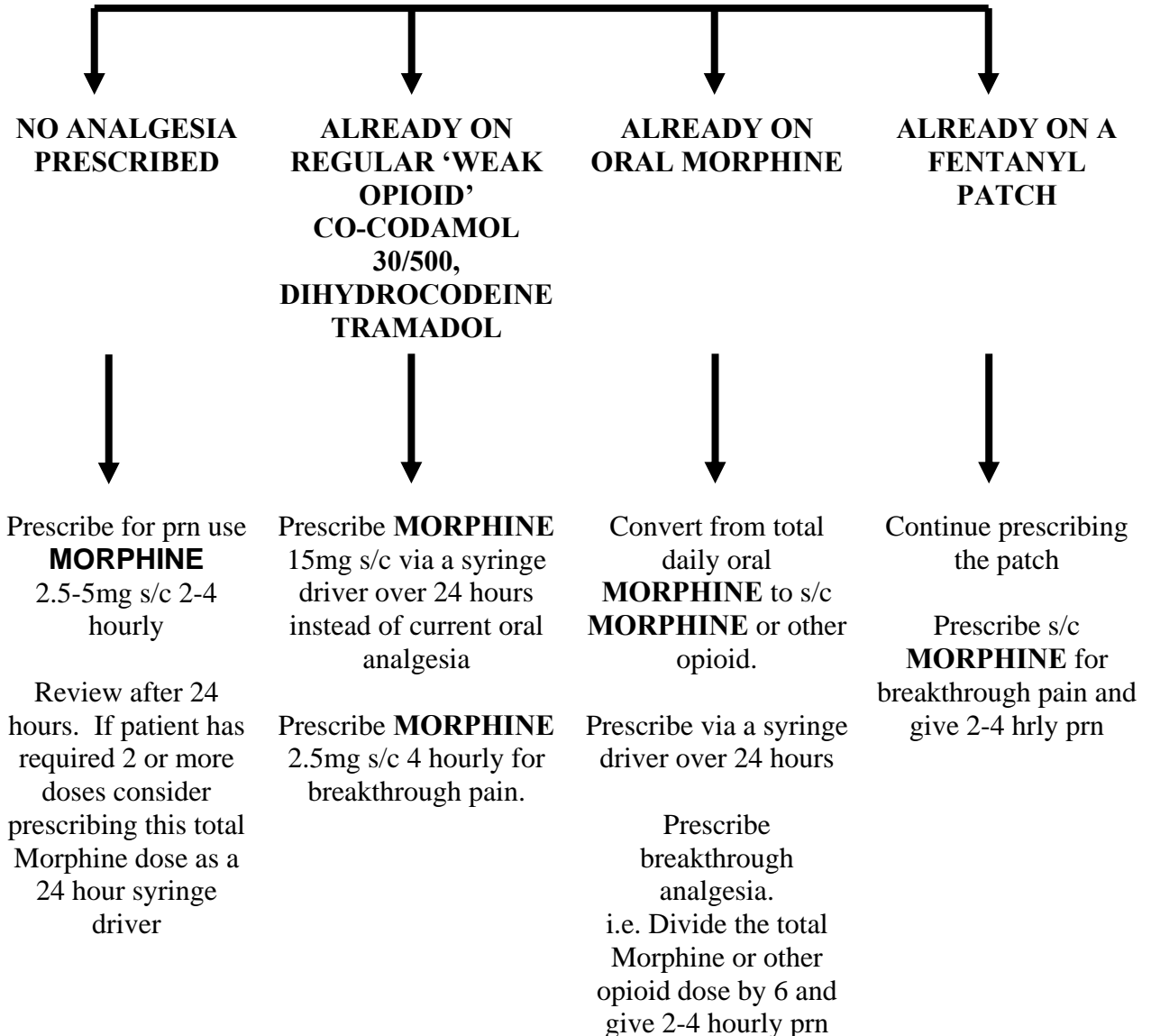
- Oral Oxycodone to SC Oxycodone                      Divide by 2 or 1.5

(See conversion chart page 12)

# MANAGEMENT OF PAIN

## PATIENT UNABLE TO TAKE ORAL ANALGESIA

### NO PAIN AT PRESENT/PAIN CURRENTLY CONTROLLED

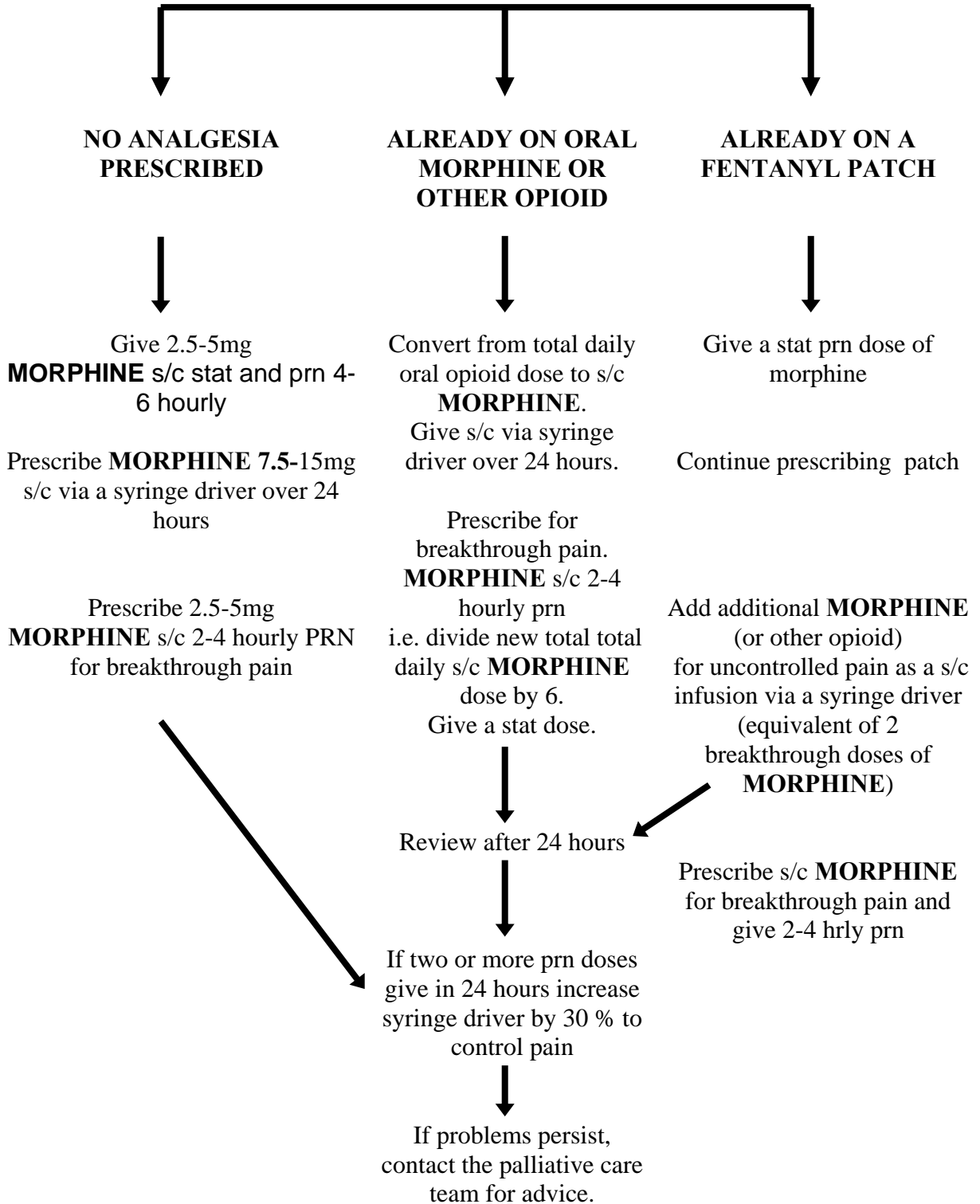


(See conversion chart page 12)

# MANAGEMENT OF PAIN

## PATIENT UNABLE TO TAKE ORAL ANALGESIA

### PATIENT CURRENTLY EXPERIENCING PAIN



(See conversion chart page 12)

## TRANSDERMAL FENTANYL ANALGESIA eg Durogesic DTrans

- Best used for **Stable Pain**
- A steady state of a FENTANYL patch is only achieved after 15-18hrs (short acting opiates will be required until pain is controlled)
- After removing a patch, there is a delay of many hours before circulating levels of drug drop to sub-therapeutic level
- Each patch lasts 72 hours, and should be replaced after this time i.e. every 3 days.
- It is not possible to ensure the interchangeability of different makes of Fentanyl transdermal patches in individual patients. **Prescribe by brand name to minimise the risk of medication error due to inadvertent switching.**

### How to convert to Fentanyl Patch

- There is no direct conversion between Fentanyl dose and Morphine dose, therefore *always* consult tables (and use clinical judgement). (See conversion chart page 12)
- After application of patch, therapeutic levels are achieved slowly, breakthrough (prn) doses will be required during this time.
- Therapeutic levels are reached and continue between 24 and 72 hours. Therefore after application assess efficacy of patch after 48-72 hours, if breakthrough doses are required regularly, it may be an indication to either increase the strength of the Fentanyl patch or convert to other opioid formulation.
- **From short acting (4 hourly) oral Morphine:** apply patch - monitor patient 4 hourly for analgesic requirement - expect to continue 4 hourly doses for first 12 to 16 hours.
- **From 12 hourly oral Morphine:** apply the first patch at the same time as taking the final 12 hourly tablet.
- **From 24 hourly Morphine:** apply the first patch 12 hours after taking the final tablet.

### Pain not controlled on a Fentanyl patch

If patient has increasing pain or is moribund:

- **Do not** remove patch.
- Add additional opioid for uncontrolled pain as a subcutaneous infusion using syringe driver.
- Calculate the required dose based on equivalent breakthrough dose.

If patient has increasing pain and pain is opioid sensitive use short acting opioid and then consider increasing the patch strength.

Take extra care when removing patch and introducing alternative opioids e.g. consider using prn oral or subcutaneous dosing for the first 12-16 hours and then retitrate as previously outlined.

**Caution:** If converting from fentanyl patch to syringe driver or oral medication *seek advice* regarding breakthrough and maintenance doses if unsure regarding the conversion.

If pain difficult to control or patient is vomiting, contact Specialist Palliative Care Team for advice.

## DUROGESIC DTRANS CONVERSION GUIDE

24 hourly Oral Morphine Dose (mg)	Fentanyl Patch Strength (mcg/hr)	4 Hourly Oral Morphine (mg) (also breakthrough medication dose)
<90	25	<15
90-134	37	15-20
135-189	50	25-30
190-224	62	35
225-314	75	40-50
315-404	100	55-65
405-494	125	70-80
495-584	150	85-95
585-674	175	100-110
675-764	200	115-125
765-854	225	130-140
855-944	250	145-155
945-1034	275	160-170
1035-1124	300	175-185

**From syringe driver:** apply patch - monitor patient at least 4 hourly for signs of toxicity, then remove syringe driver once patch in place for 12 hours.

**ALWAYS** prescribe “breakthrough” doses of either oral Morphine or subcutaneous Diamorphine for all patients on Fentanyl, to meet any change in analgesic requirement.

### Transtec Patch<sup>®</sup> (Buprenorphine) Conversion Guide

Buprenorphine Matrix Patch/Patches micrograms/hr	24 hr Oral Morphine Dose (mg)
35	30-60
52.5	60-90
70	90-120
87.5	120-150
105	150-180

Transtec Patch is replaced twice weekly, every 3 or 4 days e.g. every Monday and Thursday.

### BuTrans Patch<sup>®</sup> (Buprenorphine) Conversion Guide

	5 micrograms/hr	10 micrograms/hr	20 micrograms/hr
Oral Tramadol	≤ 50mg/day	50-100mg/day	100-150mg/day
Oral Codeine	~30-60mg/day	~60-120mg/day	~120-180mg/day
Oral Dihydrocodeine	~60mg/day	~60-120mg/day	~120-180mg/day

Butrans Patch is replaced every 7 days

**OPIOID DOSE CONVERSION GUIDE**  
(APPROXIMATE EQUIVALENT DOSES)

Oral Weak Opioid 24 hours		Oral Morphine dose 24 hours
Co-Codamol 30 / 500	2 tabs qds = 240mg codeine	30mg
Dihydrocodeine 30mg	2 tabs qds = 240mg codeine	30mg
Co-Dydramol 10/500	2 tabs qds = 80mg codeine	10mg
Tramadol 100mg	1 tab qds = 400mg tramadol	40 – 60mg

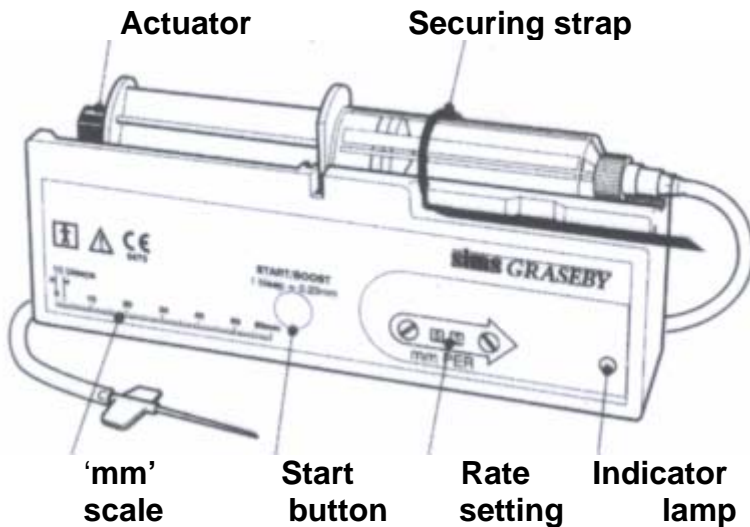
Approximate Equivalent Opioid Doses								
oral Morphine		SC Morphine	SC Diamorphine		oral Oxycodone		SC Oxycodone	
24 h total dose (mg)	4 h dose (mg)	24 h total dose (mg)	24 h total dose (mg)	4 h dose (mg)	24 h total dose (mg)	4 h dose (mg)	24 h total dose (mg)	4 h dose (mg)
30	5	15	10	2.5	15	2.5	7.5-10	1.25-2.5
60	10	30	20	2.5-5	30	5	15-20	2.5-5
120	20	60	40	5-7.5	60	10	30-40	5-7.5
180	30	90	60	10	90	15	45-60	7.5-10

**Conversion factors:**

- Oral Codeine to Oral Morphine Divide by 10
- Oral Morphine to SC Diamorphine Divide by 3
- Oral Morphine to Oral Oxycodone Divide by 2
- Oral Morphine to Oral Hydromorphone Divide by 7.5
- Oral Morphine to SC Morphine Divide by 2
- Oral Oxycodone to SC Oxycodone Divide by 2
- DOH recommends SC Diamorphine: SC Oxycodone as 1:1
- Oral Tramadol to oral Morphine Divide by 5
- Oral Hydromorphone to SC Hydromorphone Divide by 2
- SC Diamorphine to SC Oxycodone –  
  - Treat as equivalent up to doses of 60mg/24hrs.
  - Caution should be used when converting higher doses
- SC Diamorphine to SC Alfentanil Divide by 10
- SC Diamorphine to SC Morphine –  
  - Ratio is between 1:1.5 and 1:2, Multiply by 1.5

**ALWAYS REVIEW PATIENT REGULARLY AFTER OPIOID SWITCH AS  
CONVERSION RATIOS ARE APPROXIMATE  
IF UNSURE OF THE CONVERSION ALWAYS SEEK SPECIALIST ADVICE**

## SYRINGE DRIVER GUIDELINES



**NOTE** - There are 2 different types of Graseby Syringe Driver commonly used in the community -

**The MS 26 – GREEN**

MS26 = is set in millimetres of length per 24hrs (1 day)

Example  $\frac{48\text{mm}}{1 \text{ day (24hrs)}}$  = Set dial at 48

**The MS16a – BLUE**

MS16A = is set in millimetres of length per hour

Example  $\frac{48\text{mm}}{24\text{hrs}}$  = Set dial at 02

Always use a Luer Lock, 20 or 30mls syringe

### POINTS TO REMEMBER

- Always use a Luer lock, 20 or 30 ml syringe
- Infusion sites – Anterior aspect upper arm and thigh, anterior chest and abdominal wall, scapula region.
- Use water for injection to dilute drugs unless otherwise stated.
- Prime giving set, MEASURE the fluid length in the syringe barrel, SET the rate (some Trusts recommend SET, measure the fluid length, then prime – check local guidelines).
- Subcutaneous Butterfly inserted with needle at 45°.
- Soft-Set inserted at 90° and remove inner needle.
- Ensure syringe finger grip is correctly placed in groove seen on front side of driver.
- Indicator light flashes every 25 seconds.
- Boost/Start button only to be used when starting infusion – NOT for extra pain relief.

### Common Drug Combinations

Key									
✓	Compatible	DIAMORPHINE	HALOPERIDOL/SERENACE	HYOSCINE/SCOPOLAMINE	LEVOMEPRAZINE/NOZINAN	CYCLIZINE/VALOID	METOCLOPRAMIDE/MAXOLON	MIDAZOLAM/HYPNOVEL	DEXAMETHASONE
✗	Not compatible								
!	Possibly incompatible								
1.	Cyclizine can crystallize at higher doses – always use water for injection and maximum dilution.								
2.	Do not combine Metoclopramide (Prokinetic) with Cyclizine (Antimuscarinic)								
		DIAMORPHINE	✓	✓	✓	✓	✓	✓	✓
		HALOPERIDOL(SERENACE)	✓	✓	!	✓	!	✓	!
		HYOSCINE(SCOPOLAMINE)	✓	✓	!	✓	✓	✓	!
		LEVOMEPRAZINE(NOZINAN)	✓	!	!	!	!	!	!
		CYCLIZINE(VALOID)	✓	✓	!	✓	!	✓	!
		METOCLOPRAMIDE(MAXOLON)	✓	!	!	!	✓	✓	!
		MIDAZOLAM(HYPNOVEL)	✓	✓	!	✓	✓	✓	!
		DEXAMETHASONE(DECADRON)	✓	!	!	!	!	!	✓
		OXYNORM INJECTION	✗	✓	✓	✗	✓	✓	!

**NB Good practice suggests a maximum of 3 drug combinations.  
If 4 drugs are required seek further guidance.**

## Drugs for Subcutaneous Administration in Palliative Care setting

Drug	Indications for Use	PRN/ Stat dose	24 hour dose	Side Effects
METOCLOPRAMIDE	<i>Prokinetic anti-emetic</i> <i>Nausea and vomiting due to delay in gastric emptying/irritation</i>	10mg	30–90mg	<b>Abdominal cramping</b> Diarrhoea Dystonia
CYCLIZINE	<i>Anti-emetic for:</i> <i>Motion sickness</i> <i>Bowel obstruction</i> <i>Raised intracranial pressure</i>	50mg	100–150mg	Sedation Confusion Dry mouth
HALOPERIDOL	<i>Anti-emetic</i> <i>Anti-psychotic</i>	1.5mg 2.5mg	3.0mg 2.5-10mg	Dystonia Sedation
LEVOMEPRAZINE	<i>2<sup>nd</sup> line anti-emetic</i> <i>Anti-psychotic</i> <i>Terminal agitation</i>	6.25mg 5mg	6.25-25mg 25-100mg	Postural hypotension Sedation
HYOSCINE BUTYLBROMIDE	<i>Anti-spasmodic (GI)</i> <i>Anti-secretory (GI and Upper resp. tract)</i>	20mg	60–120mg	Dry mouth
HYOSCINE HYDROBROMIDE	<i>Anti-secretory</i>	400mcg	1.2 – 2.4mg (1200 – 400mcg)	Dry mouth Agitation Sedation
MIDAZOLAM	<i>Anxiolytic/Sedation</i> <i>Anti-convulsant</i> <i>Terminal agitation</i>	2.5-5mg 10mg 2.5-5mg	5-10mg 20-60mg 10-80mg	Drowsiness
DEXAMETHASONE	<i>Intractable nausea and vomiting</i> <i>Raised intracranial pressure</i>	-	2- 8mg  Up to 16mgs	Insomnia <i>Consider giving as a once daily subcutaneous bolus as it can precipitate with other drugs if not enough diluent is added.</i>
DIAMORPHINE	Dose of Diamorphine in syringe driver given subcutaneously over 24 hours equals the daily oral dose of Morphine divided by 3. eg If on MST 30mg BD, 24 hour dose of Morphine = 60mg. Therefore the 24 dose of Diamorphine = 60 divided by 3 = 20mg <b>When switching opioids it must be emphasized dose ratios are a guide to the equivalent dose. Inter patient variability requires that each patient is carefully titrated to the appropriate dose.</b>			Constipation <i>Nausea and vomiting</i> Drowsiness <i>Consider Morphine toxicity in a restless patient</i>
OXYNORM INJECTION 10mg in 1 ml	Dose of parenteral Oxycodone in syringe driver given subcutaneously over 24 hours equals the daily oral dose of Oxycodone divided by 2 e.g. If on Oxycontin 30mgs BD, 24 hour dose of oral Oxycontin = 60mgs. Therefore the 24 hour dose of parenteral Oxycodone (Oxynorm parenteral) = 60 divided by 2 = 30mgs <u>Opioid Switch:</u> Oral Morphine to oral Oxycodone ratio is 2:1 e.g. MST 60mgs BD = Oxycontin 30mgs BD			<b>Constipation</b> Nausea and vomiting Drowsiness, <b>Opioid toxicity</b>

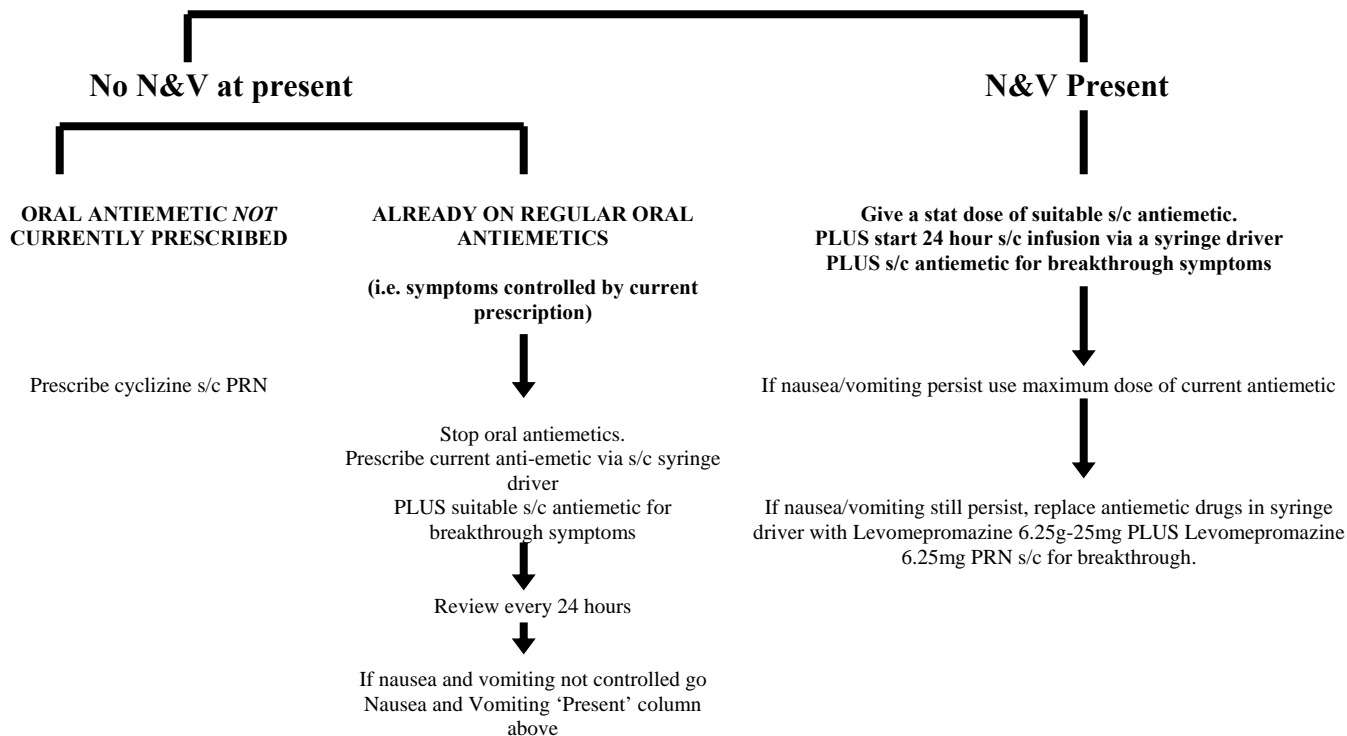
**Remember to consider opiate toxicity in restless patient**

**Signs of opiate toxicity: Myoclonic jerks, agitated delirium. Hallucinations; multifocal twitching and jerking of limbs, persistent drowsiness**

## NAUSEA AND VOMITING

- Where possible **assess and identify underlying cause** of nausea and vomiting.
- If a trial of oral medication is not appropriate or control of symptoms have been difficult to achieve consider using a syringe driver to administer parenteral anti-emetics until adequate symptom control has been achieved.

### **PATIENT UNABLE TO TAKE ORAL ANTIEMETIC**



### **IDENTIFIABLE CAUSES**

Cause	Symptoms	Recommendation
<b>Chemo/radiotherapy</b>	Determine from history	Ondansetron or other 5-HT3 antagonist
<b>Intestinal Obstruction</b>	Constipation, abdominal distension, colicky abdominal pain	Cyclizine – if surgical intervention inappropriate
<b>Hypercalcaemia</b>	Agitation, confusion, dehydration, drowsiness	Consider admission Haloperidol – if active treatment of hypercalcaemia inappropriate
<b>Gastric Stasis</b>	Intermittent large volume vomits - Exclude bowel obstruction	Metoclopramide
<b>Medication</b>	New drug, increased opioid dose, NSAID	Consider stopping causative drug. Haloperidol or cyclizine
<b>Raised ICP</b>	Headache, lateralizing signs, h/o brain mets	Cyclizine and commence or increase dexamethasone

### **NO OBVIOUS UNDERLYING CAUSE - EMPIRICAL REGIME**

Drug	Stat Dose	Maintenance	Indications
<b>1<sup>st</sup> Line</b> Cyclizine	25-50mg	100-150mg	Raised ICP, intestinal obstruction, movement related nausea
<b>2<sup>nd</sup> Line add</b> Haloperidol	1.5mg	1.5- 5mg	Chemical related nausea. Eg.: Hypercalcaemia and renal failure. Higher doses may cause sedation and extra-pyramidal side-effects
<b>3<sup>rd</sup> Line switch to</b> Levomepromazine	6.25-25mg	6.25-25mg	Sedation and hypotension at higher doses.

**Note: Metoclopramide and Cyclizine should not be given together.**

# AGITATION AND RESTLESSNESS IN THE END STAGES OF LIFE

## NONE AT PRESENT

Prescribe **MIDAZOLAM**  
2.5-5mg s/c 4 hourly prn

If 2 or more doses required prn



## PRESENT

Prescribe stat **MIDAZOLAM** 2.5mg-5mg s/c and assess response after 30 minutes

If *effective*

Prescribe 10mg via a syringe driver over 24 hours  
And continue to give prn doses as required

**and**

Re-assess regularly. If symptoms persist, add total s/c prn dose over 24 hours to current syringe driver dose (increase breakthrough dose accordingly)

If poor response to increasing dose of **MIDAZOLAM**

- reassess cause of agitation
- consider prescribing starting dose of **LEVOMEPRMAZINE** 6.25-12.5mg s/c

Assess response and if effective **add** **LEVOMEPRMAZINE** 12.5-25mg via syringe driver over 24 hours

### Consider possible treatable causes:

Opioid Toxicity	Faecal impaction	Fear
Urinary infection	Hypercalcaemia	Infection
Increased pain	Uraemia	Urinary retention

## OPIOID TOXICITY

Presence of confusion, drowsiness, myoclonic jerks and often pin-point pupils.

Can occur when dose has been markedly increased *OR* when renal failure ensues and active metabolites accumulate.

### RECOMMENDED MANAGEMENT:

- Decrease opioids dose by 30 – 50%
- Hydration
- Use midazolam if sedation required
- Use haloperidol for the treatment of visual hallucinations if present and troublesome

### MIDAZOLAM (for agitation)

Stat dose	=	2.5mg –5mg s/c
Maintenance dose	=	10mg-60mg per 24hrs via s/c infusion

## MANAGEMENT OF NOISY SECRETIONS

### NONE AT PRESENT

Prescribe **HYOSCINE  
HYDROBROMIDE 0.4mg s/c  
4-6hourly prn.**

**If two or more doses of prn  
HYOSCINE  
HYDROBROMIDE required  
in 24 hours...**



### PRESENT

Give stat doses **HYOSCINE  
HYDROBROMIDE 0.4mg s/c**

and

prescribe **HYOSCINE  
HYDROBROMIDE 1.2mg s/c**  
over 24 hours via syringe driver

and

prescribe **0.4mg HYOSCINE  
HYDROBROMIDE s/c 4-6  
hourly prn** for breakthrough  
symptoms

-if symptoms persist, increase  
total 24 hour dose to 2.4mg

-If 2.4mg in 24 hours not effective  
consider changing to  
**GLYCOPRRONIUM 0.6mg-  
1.2mg s/c** over 24 hours via  
syringe driver.

**Note REPOSITIONING MAY HELP DISLODGE CHEST SECRETIONS**

### **Naloxone for reversal of opioid induced respiratory depression (based on the recommendations of the American Pain Society)**

If respiratory rate  $\geq 8$ /min and the patient is easily rousable and not cyanosed, adopt a policy of 'wait and see'; consider reducing or omitting the next regular dose of Morphine and reassess pain.

If respiratory rate  $< 8$ /min, the patient is barely rousable/unconscious and/or cyanosed:

- Dilute a standard ampoule containing Naloxone 400ug to 10ml with saline for injection.
- Administer 0.5ml (20ug) IV every 2 min until the patient's respiratory status is satisfactory.
- Further boluses may be necessary because Naloxone is shorter-acting than Morphine (and other opioids).

**GUIDANCE FOR THE MANAGEMENT OF PATIENTS WHO BECOME ILL WITHIN 6 WEEKS OF  
CHEMOTHERAPY**

The patient has often been informed regarding necessary actions. Please ask if they have been given advice and act accordingly.

PRESENTING PROBLEM	SIGNS & SYMPTOMS	REQUIRED ACTION
<b>Critically Ill Patients</b> (Unresponsive/Hypotensive)	Multi-organ failure. Acute bleeding (DIC)	Admit to nearest A&E
<b>Evidence of infection</b> Pyrexia or hypothermia within 6 weeks post chemotherapy	Potentially life threatening Neutropenic Sepsis	Contact treatment unit to arrange emergency admission via 999 ambulance
<b>Typhlitis</b> – a rare complication due to neutropenic caecitis/colitis	Potentially life threatening. May mimic acute abdomen/appendicitis	Contact treating unit to discuss emergency admission via 999 ambulance
<b>Delayed emesis</b> (Occurring 24 hours after chemotherapy)	Up to 5 episodes of vomiting in 24 hours	If this has occurred immediately on stopping 5HT3 antagonists, then these can be continued for a further 2-3 days If occurs later than this, give Metoclopramide 10mgs tds If further problems, discuss with treating unit
	> 5 episodes of vomiting in 24 hrs and/or requires IV fluids	Admit to treating unit
	Increase of 4-6 stools/day or nocturnal stools	Loperamide 4mgs initially, then 2mgs after each loose stool up to 5 days (max 16mgs daily)
	Increase of >7 stools/day or incontinence, or needs IV fluids	Admit to treating unit
	First liquid stool	Loperamide 4mgs orally initially after first liquid stool then 2mgs every 2 hours thereafter up to 12 hours after last liquid stool for maximum of 48 hours. (Ignore usual max dose 16mgs daily)
	Symptoms do not settle, dehydration or pyrexia occurs	Admit to treating unit
	Painful erythema, oedema or ulcers but can swallow	Oral care & pain relief <ul style="list-style-type: none"> <li>• Biotene<sup>®</sup> MW 10mls qds +/- paracetamol</li> <li>• Discomfort from ulcers</li> <li>• Adcortyl in Orabase – apply a thin layer 2-4 times daily</li> <li>• Oral candidiasis</li> <li>• Nystatin oral suspension, 1ml to be held in mouth for at least a minute before swallowing, qds after food</li> <li>• Fluconazole 50mgs od for systemic treatment of oral candidiasis for 7 days</li> </ul>
	Painful erythema, oedema or ulcers. Unable to swallow. Requires IV fluids	Admit to treating unit

Palmar Plantar syndrome	Redness of palms of hands/soles of feet Skin breakdown/hacks	Use simple emollient Stop capecitabine tablets and seek advice from treating Oncologist
Hypomagnesaemia	Non-specific symptoms but can include muscle weakness, cramp, carpedal spasm. Seizures and ECG changes in severe depletion.	If level is 0.55-0.7mmol/l: oral magnesium (12-15mmol in divided doses). Rx: Magnaspartate sachets 6.5g - 2 sachets bd.  If magnesium < 0.55mmol/l discuss with treating unit re IV infusion

### Radiotherapy Related Problems

PROBLEM	SEVERITY	ACTION
Patient becomes ill during or after radiotherapy	Symptoms will vary depending on site being treated	9-5pm – Contact Treating Oncology Team for advice. If out of hours/weekend/Bank Holiday and urgent contact 028 9026 3805

### Non-Cancer Related Acute Problems

PROBLEM	ACTION
Oncology patient presents with potential medical cardiac or surgical problem	Refer to nearest appropriate facility <b>after seeking advice from treating oncologist</b>

### Cancer Units and Centre Contact Numbers

HOSPITAL	WORKING HOURS (09:00 – 17:00, MON-FRI)	OTHER TIMES
ALTNAGELVIN	028 7161 1320 (Sperrin Room)	028 7129 6183 (Ward 10)
ANTRIM	028 9442 4201 or 40 (Laurel House)	028 9442 4505 (Ward B1)
CANCER CENTRE AT BCH	028 9026 3805 (24 hr Oncology Helpline) 028 9026 3984 (24hr Haematology Helpline)	
CRAIGAVON	028 3861 2820 or 21 (Mandeville Unit)	028 3861 2150 (Haematology Ward)
ULSTER	028 9056 1437 (MacDermott Unit)	028 9055 0448 (Ward 4)
FOR PATIENTS KNOWN TO THESE SERVICES		
NI HOSPICE	24Hrs Symptom Advisory Service – 028 9078 1836	
MARIE CURIE HOSPICE	028 9088 2000	
FOYLE HOSPICE	028 7135 1010	
NEWRY HOSPICE	028 3026 7711	

**If a patient is more than 6 weeks** from their last chemotherapy or radiotherapy treatment, their condition may be discussed with their oncologist. If there is no indication for anti-cancer therapy, you may be advised to refer the patient to your local medical, surgical or palliative care services.

## Useful Out of Hours Contacts for advice

	<b>Telephone</b>
Northern Ireland Hospice Nurse Specialist	028 90781836
Northern Ireland Hospice	028 90781836 (24 hour)
Marie Curie Hospice	028 90882000/2034 (24 hour)
Oncology Helpline Bridgewater Suite Belfast City Hospital	028 90263805
Northern Ireland Community Pharmacy Palliative Care Network (including oxygen)	List available at OOH base

### **REFERENCES**

UCHT/Clin.Guide (08) 2004

UCHT/Clin/Guide (08) 2006

BCH Nursing NIPME Opioid Equivalence, August 2006

Watson M, Lucas C, Hoy A, Palliative Care Guidance (2006)

NI Control of Pain Guidelines DHSSPS 2003

Opioid equivalencies NIPMG 2008

Guidance for Chemotherapy Complications NICAN 2007

Liverpool Care Pathway Version 11 (2007)

(Review date March 2009)