Care of the Dying
Management in Severe Renal Failure

Early recognition of the dying process allows for adequate preparation of the patient, the family and the carers. This clinical guidance covers the prescribing and management of patients who have entered the terminal phase of their illness. The terminal phase can be characterised by:

- day to day deterioration of clinical condition
- declining oral intake (difficulty with oral medication)
- profound weakness
- a reduction in the level of consciousness

The aim of this guidance is to provide advice for the prescribing of regular, when required (PRN) and anticipatory medicines for controlling common symptoms encountered in the last hours or days of life. It includes:

- Management of pain in severe renal failure
- Management of pain in patients with severe renal failure already established on fentanyl patches
- Management of agitation in severe renal failure
- Management of nausea and vomiting in severe renal failure
- Management of dyspnoea in severe renal failure
- Management of excessive respiratory tract secretions in severe renal failure

General actions for consideration:

- Discontinue inappropriate interventions and medications
- Identify the process for review of patient and carer support
- Prescribe PRN medication as recommended in this guidance

Additional information:

- Syringe driver medication must always be prescribed on designated syringe driver prescription charts available within Wirral University Teaching Hospital, Primary Care and St Johns Hospice.
- In the community if drugs are not available from the patient’s usual community pharmacy please refer to emergency community palliative care stock list.

Useful Numbers / Contacts:
Wirral Hospice St John’s
24 hour Palliative Advice and Information Line (P.A.I.L) 0151 343 9529 Monday-Sunday 5pm-9am
Integrated Specialist Palliative Care Team
0151 328 0481 Monday to Friday 9am – 5pm
07825226724 Saturday, Sunday and Bank Holidays 9am – 5pm
Reducing Dosing Errors with Opioid Medicines

The National Patient Safety Agency (NPSA) Rapid Response Report: ‘Reducing Dosing Errors with Opioid Medicines’, was issued due to the increase in number and severity of incidents concerning opioid medicines.

The following guidance must be adhered to when prescribing, dispensing or administering opioid medicines:

- Ensure that naloxone (the antidote to opioid medicines) is available in the clinical area, to treat overdose and reverse unwanted, severe adverse effects. (See Opioid Toxicity; Pain Management Clinical Guidance)
- Confirm any recent opioid dose, formulation, frequency of administration and any other analgesic prescribed for the patient.
- Ensure where a dose increase is intended, that the calculated dose is safe for the patient. Not normally more than 50% higher than the previous dose.
- Check the usual starting dose, frequency of administration, standard dosing increments, symptoms of overdose, and common side effects of that medicine and formulation.

The NPSA Safer Practice Notice 12 recommends the following strengths of opioids are used to prepare doses:

**Oxycodone:**
- **10mg in 1mL** ampoules available for patients newly commenced on oxycodone and for stat / PRN doses.
- **20mg in 2mL** ampoules available for patients established on oxycodone who require larger doses via the syringe driver or larger stat / PRN doses.
- **50mg in 1mL** ampoules are restricted to those patients established on very high doses where there are volume problems in the syringe driver or where volume problems arise due to larger stat / PRN doses.

**Alfentanil:** (only to be used following specialist palliative care advice)
- **1 mg in 2ml** ampoules - available to prepare doses via syringe driver.
- **5mg in 1ml** ampoules - available for those patients established on larger doses in syringe driver or where there are volume problems in the syringe driver

Due to its short half life, alfentanil is inappropriate for use for stat/PRN doses

**Dose conversion of opioids –see Dose Conversion Chart for Strong Opioids, (Wirral Drug and Therapeutics Committee: Approved March 2010)**

Reducing Dosing Errors with Midazolam

The NPSA Rapid Response Report: ‘Reducing risk of Overdose with Midazolam Injection in adults’, was issued in response to reports of the wrong dose of midazolam injection being administered for procedures requiring conscious sedation.

Starting doses of midazolam at the lower end of the range, stated in the “Care of the Dying” guidance should be considered for symptom management in terminally ill patients however with regular review, subsequent daily doses should be proportional to the degree of agitation/ anxiety experienced by the patient during the terminal phase of their disease.

**10mg in 2ml** ampoules of midazolam are routinely used to prepare doses via syringe drivers.

This NPSA guidance recommends a stock of benzodiazepine antidote, flumazenil, is held in clinical areas where midazolam is used; however the use of this reversing agent is usually inappropriate during the management of the dying patient.

Specific information on dose titration of midazolam in the care of the dying in severe renal failure is included in the attached ‘Management of agitation in severe renal failure’ (see page 5). Doses should be titrated to the individual patients clinical need in accordance with these guidelines.
Care of the dying management of pain in severe renal failure

Pain present

Strong opioid naive

1. STAT: Give oxycodone 1mg to 2.5mg s/c
2. COMMENCE SYRINGE DRIVER:
   Oxycodone 2.5mg to 5mg and levomepromazine 6.25mg s/c in 24 hours (for antiemetic effect)
3. PRN: Oxycodone 1mg to 2.5mg s/c 6 to 8 hourly

Strong opioid established for pain

Pain absent

Prescribe as below in anticipation of pain

Strong opioid naive

PRN: Prescribe oxycodone 1mg to 2.5mg s/c 6 to 8 hourly
If 2 or more doses of oxycodone are required in 24 hours, commence a syringe driver

Strong opioid established for pain

If patient is established on a strong opioid other than oxycodone, seek specialist palliative care advice.

1. STAT: If in pain, give s/c oxycodone PRN dose (calculated below) as syringe driver is commenced
2. COMMENCE SYRINGE DRIVER: To calculate total 24 hours s/c oxycodone dose required:
   \[
   \text{Total 24 hour oral oxycodone} = \frac{24 \text{ hour s/c oxycodone in syringe driver}}{2}
   \]
3. PRN breakthrough analgesia: \[
   \frac{24 \text{ hour s/c oxycodone dose}}{6} = \text{oxycodone s/c 6 to 8 hourly}
   \]

NB To calculate subsequent oxycodone requirement for the next 24 hours - add all PRN s/c doses received in the last 24 hours to the current dose in the syringe driver, (not normally more than 50% higher than the previous dose) and also recalculate a new PRN dose.

If problems of opiate toxicity or intolerance to oxycodone occur, conversion to alfentanil in the syringe driver may be appropriate – seek specialist palliative care advice.

OBTAIN SPECIALIST PALLIATIVE CARE ADVICE IF SYMPTOMS PERSIST
Care of the dying management of pain in patients with severe renal failure already established on fentanyl patches

**Pain Present**

CONTINUE FENTANYL PATCH AND CHANGE EVERY 72 HOURS

1. **STAT:** Give a stat dose of oxycodone s/c – see table below.

2. **PRN:** Oxycodone s/c 6 to 8 hourly PRN for breakthrough pain. See table below.

If patient is taking an alternative strong opioid as breakthrough analgesia, seek specialist palliative care advice.

If 2 or more PRN doses of oxycodone are required in 24 hours, commence a syringe driver.

**Pain Controlled**

Prescribe as below in anticipation of pain

CONTINUE FENTANYL PATCH AND CHANGE EVERY 72 HOURS

**PRN:** Prescribe oxycodone s/c 6 to 8 hourly PRN for breakthrough pain. See table below

If 2 or more PRN doses of oxycodone are required in 24 hours commence a syringe driver.

If patient is taking an alternative strong opioid as breakthrough analgesia, seek specialist palliative care advice.

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**OBTAIN SPECIALIST PALLIATIVE CARE ADVICE IF SYMPTOMS PERSIST**

<table>
<thead>
<tr>
<th>Fentanyl patch strength</th>
<th>6 to 8 hourly oxycodone s/c PRN</th>
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<tbody>
<tr>
<td>12 micrograms per hour</td>
<td>1mg</td>
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<tr>
<td>25 micrograms per hour</td>
<td>2.5mg</td>
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<td>50 micrograms per hour</td>
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<tr>
<td>75 micrograms per hour</td>
<td>7.5mg</td>
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<td>200 micrograms per hour</td>
<td>20mg</td>
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<tr>
<td>300 micrograms per hour</td>
<td>30mg</td>
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</tbody>
</table>
Care of the dying management of agitation in severe renal failure

**Agitation present**

1. **STAT:** Give Midazolam 1.25mg to 2.5mg s/c

2. **COMMENCE SYRINGE DRIVER:** Midazolam 2.5mg to 5mg s/c in 24 hours (titrate dose by adding 30% of PRN doses of midazolam required in previous 24 hours to current syringe driver)

3. **PRN:** Midazolam 1.25mg to 2.5mg s/c 6 to 8 hourly

**Partial or no response or midazolam PRN doses are ineffective**

1. **STAT:** Give levomepromazine 12.5 mgs s/c

2. **SYRINGE DRIVER:** Reprime and **add** levomepromazine 12.5-25mgs s/c in 24 hours (Dose of levomepromazine can be increased up to maximum of 200mg s/c in 24 hours but **seek specialist palliative care advice** at levomepromazine doses above 50mg s/c in 24 hours)

3. **PRN:** Levomepromazine 12.5 mgs to 25mgs s/c 4 to 6 hourly

**Agitation absent**

Prescribe as below in anticipation of agitation

**PRN:** Prescribe midazolam 1.25mgs s/c 1 to 2 hourly.

If 2 or more doses of midazolam required in 24 hours commence syringe driver

**Partial or no response or midazolam PRN doses are ineffective**

**OBTAIN SPECIALIST PALLIATIVE CARE ADVICE IF SYMPTOMS PERSIST**
Care of the dying management of nausea and vomiting in severe renal failure

If patient is already taking an oral anti-emetic seek specialist palliative care advice as to whether this should continue via a syringe driver or be switched to an alternative anti-emetic.

Nausea and / or vomiting present

1. **STAT:** Give levomepromazine 6.25mg s/c

2. **COMMENCE SYRINGE DRIVER:**
   Levomepromazine 6.25mg to 12.5mg s/c in 24 hours

   (Dose of levomepromazine may be titrated by adding the PRN doses required in the previous 24 hours, to the current levomepromazine dose in the syringe driver)
   (Usual dose range for levomepromazine 6.25mg to 25mg in 24 hours for nausea and vomiting).

3. **PRN:** Levomepromazine 6.25mg s/c 4 to 6 hourly

   If maximum total daily levomepromazine s/c dose exceeds 25mg in 24 hours seek specialist palliative care advice.

Nausea and / or vomiting absent

Prescribe as below in anticipation of nausea and vomiting

**PRN:** Prescribe levomepromazine 6.25mg s/c 4 to 6 hourly

If 2 or more doses of levomepromazine are required in 24 hours commence a syringe driver.

**OBTAIN SPECIALIST PALLIATIVE CARE ADVICE IF SYMPTOMS PERSIST**
Care of the dying management of dyspnoea in severe renal failure
If the patient is strong opioid established for pain contact Specialist Palliative Care Team

Dyspnoea present

Strong opioid naive

1. STAT: Give oxycodone 500 micrograms to 1 mg s/c
2. COMMENCE SYRINGE DRIVER: Oxycodone 1 mg to 2 mg s/c in 24 hours and Levomepromazine 6.25 mg s/c in 24 hours (for antiemetic effect)
3. PRN: Oxycodone 500 micrograms to 1 mg s/c 6 to 8 hourly

Dyspnoea absent

prescribe as below in anticipation of dyspnoea

Strong opioid established for dyspnoea

PRN: Prescribe oxycodone 500 micrograms to 1 mg s/c 6 to 8 hourly
If 2 or more doses of oxycodone are required in 24 hours commence a syringe driver

If patient is established on a strong opioid other than oxycodone, seek specialist palliative care advice.

Strong opioid naive

1. STAT: If needed give oxycodone s/c PRN dose (calculated below) as the syringe driver is commenced
2. COMMENCE SYRINGE DRIVER: To calculate the 24 hour s/c oxycodone dose required:
   Total 24 hour oral oxycodone = 24 hour s/c oxycodone in syringe driver
   \[ \frac{2}{2} \]
3. PRN dose:
   24 hour s/c oxycodone dose = oxycodone s/c 6 to 8 hourly
   \[ \frac{6}{6} \]
   NB To calculate subsequent oxycodone requirement for the next 24 hours add all PRN s/c doses received in the last 24 hours to the current dose in the syringe driver, (not normally more than 50% higher than the previous dose) and also recalculate a new PRN dose.

Strong opioid established for dyspnoea

OBTAIN SPECIALIST PALLIATIVE CARE ADVICE IF SYMPTOMS PERSIST
Care of the dying management of excessive respiratory tract secretions in severe renal failure

Excessive respiratory tract secretions present

1. STAT: Give glycopyrronium 200 micrograms s/c

2. COMMENCE SYRINGE DRIVER:
   Glycopyrronium 600 micrograms s/c in 24 hour

   NB This should be started immediately after giving the stat dose

3. PRN: Glycopyrronium 200 micrograms s/c 2-4 hourly

   If PRN dose is required in the initial 24 hours after commencing the syringe driver increase glycopyrronium dose to 1.2mg s/c in 24 hours.

   NB Total maximum daily dose of glycopyrronium is 2.4mg s/c in 24 hours including PRN doses but may be higher on specialist palliative care advice.

Excessive respiratory tract secretions absent

Prescribe as below in anticipation of secretions

PRN: Prescribe glycopyrronium 200 Micrograms s/c 2-4 hourly

   If 2 or more doses of glycopyrronium are required in 24 hours commence a syringe driver

OBTAIN SPECIALIST PALLIATIVE CARE ADVICE IF SYMPTOMS PERSIST

If patient is established on s/c hyoscine butyl bromide prior to the dying phase contact specialist palliative care for advice.