# END OF LIFE CARE

# EMERGENCY DEPARTMENT

- Achieving a dignified death for all patients who die in the ED should be a principle aim for ED clinicians, and can be a rewarding experience for all involved in caring for the patient and family.
- Symptom management should be individualised for each patient and encompasses both pharmacological and non-pharmacological support.
- It is commonly used for the treatment of refractory pain, breathlessness, agitated delirium, and convulsions.
- Some emergency end of life situations for which care is needed include massive hemorrhage, asphyxiation, an overwhelming pain crisis, and severe terminal breathlessness.
- The objective of end-of-life care is to relieve suffering; the objective is not to lengthen or cut short the patient's life.
- Patients and their families should be involved, wherever possible, in end of life care decisions.
- If a patient is at the end of life, it may be appropriate to set a ceiling of treatment in the ED.
- Stop IV fluids if this will not help alleviate any symptoms or distress and the patient is approaching the final hours of life.
- Opportunities for organ and tissue donation should be considered as a usual part of end of life care in the ED.
- **End-of-Life care is considered after all other measures to relieve reversible distress have been exhausted. The diagnosis of dying may not be straight forward – discuss with the consultant in Emergency Medicine.**

**For more information:**

- http://emed.ie/Symptoms/Palliative-Care.php
- https://www.marymount.ie/end-of-life-covid-19-resources

## [A] PHARMACOLOGICAL MANAGEMENT

**General principles:**

- The doctor should base the decision on doses of sedative medication on effect, with the doses recommended below being adjusted upward or downward, depending on risk factors, such as body weight, or the presence of renal impairment. Doses cited below are a guide only.

- ***Consider IV boluses initially for the first couple of hours as SC infusions will take time to reach steady state (4 hours).***

- ***Do not forget to prescribe PRN medications.*** *There should be a review of the treatment plan within one hour to assess if the administered medication has had the desired effect/a partial, but inadequate, effect on the symptoms. See Appendix D for an example on prescribing PRN medications.*

- ***1st line management of symptomatic breathlessness is an opioid.***

- Syringe driver doses are based on severity of symptoms and PRN usage.

- Subcutaneous administration is preferable to intravenous administration and is acceptable on hospital wards. There is a greater risk of apnoea when bolus injections are administered intravenously.

- All diluents for drugs are 0.9% saline **except** for Cyclizine (diluted in dextrose 5%).

- ***The ratio of drugs*** *when switching routes is**:***

  ***IV : SC : Oral – 1 : 5 : 10***

- ***Golden Rule*** ***–*** *when converting one opiate to another, always convert to morphine first before calculating ratios. See Appendix C.*

- **Reassess frequently –** always check to see if any bolus dose administered has been effective after 30mins. Consider additional bolus doses if a suboptimal effect is noted.

- If patients are requiring doses greater than what is indicated below seek advice seek senior advice.

## Anxiolytic Sedatives for Anxiety or Agitation

### ➢ Midazolam

- **SC sedation** - Initial bolus of 2.5-5 mg. Assess after 20 minutes and if necessary, this can be repeated, with a **double stat dose** and frequency of administration adjusted based on response, and instruction of a doctor.
- **Rapid IV sedation** – Initial boluses of 1-2 mg, with dose and frequency of administration adjusted based on response, and instruction of a doctor.
- **SC Infusion** – Initially 10-20 mg/24 hours, titrate according to response. Dose and rate of increase are dependent on symptoms and response to PRNs. For convulsions increase to 20-40 mg/24 hours.
- **Additional "breakthrough" bolus doses** can be administered on top of the SC infusion 1-2 hourly, as required, to achieve the desired effect.
- If the desired effect is not achieved with the continuous infusion then, after a minimum of 4 hours, **increase the dose by 50%.**
- **NOTE:** for patients on Clarithromycin consider reducing dose by 50% (reduced clearance on midazolam).

### ➢ Levomepromazine

- Levomepromazine may need to be used in addition to midazolam if anxiety/distress or delirium is severe.
- **Initial bolus** of 3.125-6.25 mg SC/IV; reassess after 30 min and repeat if indicated.
- **Review** if 3+ doses are required in 4hr with little/no benefit or if 6 doses are required in 24hrs.
- **Continuous SC/IV Infusion** with 12.5-25 mg/24 hours.

### ➢ Haloperidol

- Haloperidol can be used if levomepromazine is unavailable.
- **Initial bolus** of 0.5-1 mg SC/IV.
- **Review** if 3+ doses are required in 4hr with little/no benefit or if 6 doses are required in 24hrs.
- **Continuous SC/IV Infusion** with 2.5-5 mg/24 hours.

## Opioid for Pain and/or Breathlessness

- May need to be combined with an anxiolytic sedative like midazolam for added benefit according to patient symptoms.

### ➢ Morphine

***For patients who are not previously on opioids:***

- **Bolus** of 2.5-5mg SC/IV; assess after every 30 minutes and repeat if needed.
- **SC Infusion** of 5-10mg/24 hours adjusted according to response.

***For patients who are already on regular opioids:***

- The PRN dose of opioid is usually 1/6$^{th}$ of the total daily dose of opioid, given 4 hourly,
  e.g. patient on PO MST 30mg bd = 60mg / 24hrs, then oral dose is morphine 10mg, and SC dose is half the PO dose i.e. 5mg.

- See Appendix C for Opioid Conversion Chart.

## Anti-Secretory for Respiratory Secretion:

### ➢ Hyoscine Butylbromide (Buscopan)

- **Initial Bolus** of 20 mg SC/IV q4-hourly.
- **SC Infusion** of 80-120mg SC via syringe pump over 24 hours.
- Also useful as an anti-spasmodic in abdominal pain.
- Use is advised in the deteriorating patient before secretions accumulate.
- Non-sedating as it does not cross the blood brain barrier, therefore useful for the patient who still has meaningful/wakeful periods with their family.

### ➢ Hyoscine Hydrobromide (Scopolamine)

- **Initial bolus** of 600 mcg SC STAT.
- **SC Infusion** of 2.4 mg over 24 hours (Max Dose of 3.6 mg in 24 hours which includes PRN doses).
- Added sedative effect – useful in patients where sedation is required to help aid their comfort.
- Useful as an anti-emetic and Anti-secretory agent.
- Also available as Scopoderm 1.5mg/72hr transdermal patch. Steady state absorption achieved in 6hrs post application.

## Persistent Nausea and Vomiting

### ➢ Levomepromazine

- **Initial bolus** of 3.125-6.25 mg SC/IV BD.
- **Continuous SC/IV Infusion** with 6.25-12.5 mg/24 hours.

### ➢ Haloperidol

- **Initial bolus** of 0.5-1 mg SC/IV BD.
- **SC Infusion** 1-2.5 mg/24 hours.

### ➢ Cyclizine

- **Bolus** of 50 mg SC/IV BD.
- **SC infusion** 150mg/24hrs.

### ➢ Ondansetron

- **Bolus** of 4-8 mg SC/IV BD.

## Supplemental Oxygen in Agitated/Distressed Patients:

- Patients who are agitated by oxygen masks or tubing can have oxygen discontinued and breathlessness managed with an opioid/anxiolytic combination instead.
- Monitoring oxygen saturations are not required at end of life.
- High flow oxygen systems, NIV are not appropriate for these patients.

## Diuretics:

- Patients who have a history of congestive cardiac failure or who have received large volume fluid resuscitation may benefit from **Furosemide 20-40mg SC/IV PRN.**

## EXAMPLE OF INITIAL BOLUSING AND COMBINED DRUG SC INFUSIONS

- **Bolus**

| Midazolam | : | Morphine | : | Hyoscine Butylbromide | : | Hyoscine Hydrobromide |
|---|---|---|---|---|---|---|
| 2.5 mg | : | 2.5 mg | : | 10-20 mg | : | 0.6 mg |

- **Subcutaneous Infusion/24 Hours (will require 4 hours to reach steady state)**

| Midazolam | : | Morphine | : | Hyoscine Butylbromide | : | Hyoscine Hydrobromide |
|---|---|---|---|---|---|---|
| 10 mg | : | 10 mg | : | 60-120 mg | : | 2.4 mg |

- Each syringe driver can be loaded with up to three separate drugs. Start with an opioid and anxiolytic sedative. An anticholinergic can then be added on if needed.

- Ensue PRN dosing is also prescribed for breakthrough symptoms.

## [B] NON-PHARMACOLOGICAL MANAGEMENT

### General Considerations

- Ensure an Advanced Directive is valid or a DNACPR order is signed and should be discussed with all patients deemed to have capacity, or with the next of kin otherwise.
- Document all discussions with the patient and family.
- A decision of DNACPR should be made by a senior clinician and the final decision of whether a patient should receive CPR in the event of an arrest lies with the clinician if treatment is futile.
- In the event of potentially reversible events such as a blocked tracheostomy tube, anaphylaxis, or choking, resuscitate to reverse cause.
- Discontinue unnecessary prescriptions, monitoring, investigations, and procedures.
- Discuss the need for hydration and nutrition with the patient and their family. IV hydration is typically not required but may occasionally make the patient more comfortable.

### Environment

- A single room providing a quiet, peaceful environment should be prioritized.

### Psychological/Spiritual Care

- Where appropriate, patient/family insight should be assessed, and fears/wishes explored.
- Consider if formal spiritual or religious care support needed/rituals which are important to patient and family.

### Respiratory Secretions

- Suctioning is rarely useful and has all the associated infection risks of an aerosol generating procedure. Re-positioning patient on side may help.

### Urinary, Bowel, Eye, Oral and Skin Care

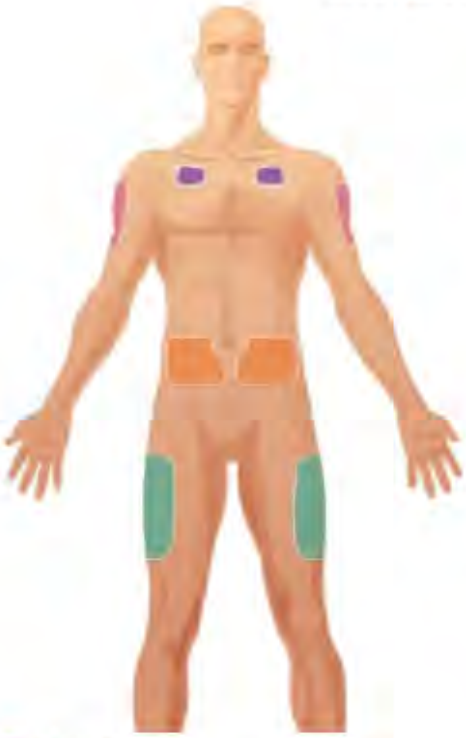
- Catheterize if in urinary retention or incontinence aids comfort level of patient.
- Regular oral, skin, and eye care.
- Offer food and fluid if patient wishes to and is able.
- Repositioning every 2-4 hourly to prevent pressure sores.

### Family/Staff Support

- The patient's family may wish to participate in caring for their dying relative, if so, they should be helped by the staff to do so. A nurse should be assigned to support the family.
- After every death or incident staff should be encouraged to talk together about the event, in many cases a formal debrief can be valuable

**Appendix A**

## SUBCUTANEOUS INSERTION SITES



- Scapula
- Subclavicular chest Wall
- Anterior abdominal wall
- Anterior aspect of the upper arms
- Anterior aspects of the thighs

**Upper Back (Scapula)**
Use when other sites unsuitable or client confused/restless

**Subclavicular Area**
Avoid when client:
- has lung disease
- is active (risk of pneumothorax)

**Upper Arms**
Avoid if possible for HDC

**Abdomen**
Avoid in presence of tense abdominal pressure

**Thighs**
Best location for HDC

***Note:*** ***The following areas should be avoided when inserting subcutaneous access for either intermittent or continuous use:***

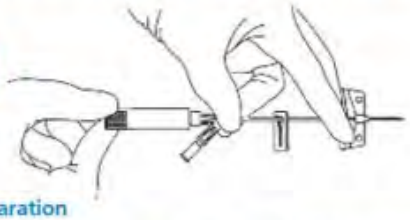
- *Areas that have too little subcutaneous tissue*
- *2" (5 cm) diameter around umbilicus*
- *Skin folds or clothing lines (i.e. waistline)*
- *Breast tissue*
- *Areas with bony prominences*
- *Tumor sites*
- *Sites that have been recently irradiated*
- *Sites with induration, inflammation or infection present*
- *Areas with lymphedema, edema or ascites*
- *Areas with broken skin, bruises, masses, abrasions, moles, burns or scar tissue*
- *Area in close proximity to central lines*

**Appendix B**

**INSERTION OF BD SAF-T-INTIMA™ DEVICE**

# BD Saf-T-Intima™ for Subcutaneous infusion therapy

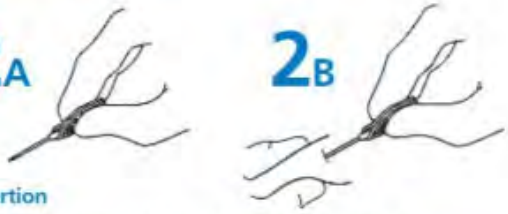
**1**



**Preparation**

- Hold as shown (Fig. 1) and rotate the white safety shield to loosen the needle. (Fig. 1).

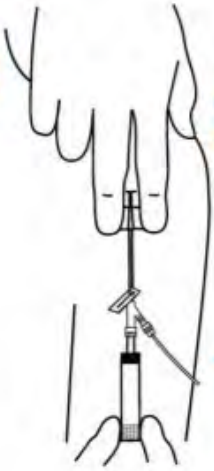
**2A** **2B**



**Insertion**

- Grasp the textured sides of wings and bring them together, pinching firmly. (Fig. 2A).
- Using thumb and index finger gently pinch the skin around selected site to identify the subcutaneous tissue. (Fig. 2B).
- Insert the full length of the catheter and needle through the skin at a 30°-45° angle. (Fig. 2B).

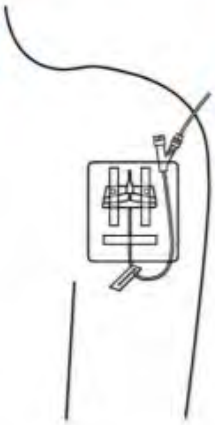
**3**



**Needle Removal**

- Lay the wings flat on the skin surface and pull the white safety shield in a straight, continuous motion until the safety shield separates from the safety system. (Fig. 3).
- Discard the needle immediately in a puncture resistant, leak-proof sharps container.

**4**



**Stabilisation**

- Secure the catheter and apply a sterile dressing per facility protocol.

# Opioid Conversion Chart

**There are differences in the literature regarding opioid conversion ratios. The conversion ratios listed below are the conversion ratios commonly used in practice at Our Lady's Hospice and Care Services (OLH&CS). The information outlined below is intended as a guide only. ALL OPIOID CONVERSIONS OUTLINED BELOW ARE APPROXIMATE ONLY. Therefore, all medication doses derived using the information below should be checked and prescribed by an experienced practitioner. The dosage of a new opioid is based on several factors including the available equi-analgesic dose data, the clinical condition of the patient, concurrent medications and patient safety. It is recommended that the new dose should be reduced by 30-50% to allow for incomplete cross-tolerance. The patient should be monitored closely until stable when switching opioid medications.**

## GOLDEN RULE: WHEN CHANGING FROM ONE OPIOID TO ANOTHER ALWAYS CONVERT TO MORPHINE FIRST.

| ORAL MORPHINE TO ORAL OPIOIDS | | ORAL OPIOIDS TO PARENTERAL OPIOIDS | | PARENTERAL MORPHINE TO OTHER OPIOIDS | | TRANSDERMAL OPIOID TO ORAL MORPHINE | |
|---|---|---|---|---|---|---|---|
| PO → PO | RATIO | PO → IV/SC | RATIO | IV/SC → IV/SC | RATIO | TD → PO | RATIO |
| Morphine → Oxycodone | 1.5:1 | Morphine → Morphine | 2:1 | Morphine → Oxycodone | 1.5:1[α] | Buprenorphine → Morphine | 1:75 |
| Morphine → Hydromorphone | 5:1 | Oxycodone → Oxycodone | 2:1 | Morphine → Hydromorphone | 5:1 | Fentanyl → Morphine | 1:100 |
| | | Hydromorphone → Hydromorphone | 2:1 | Morphine → Alfentanil | 15:1 | | |

(Note: This table does not incorporate recommended dose reductions of 30-50%.)

| MORPHINE 24 hour dose | | OXYCODONE[α] 24 hour dose A 2:1 ratio with morphine may also be used. See preparations outlined below. | | HYDROMORPHONE 24 hour dose | | FENTANYL | ALFENTANIL[β] 24 hour dose | BUPRENORPHINE |
|---|---|---|---|---|---|---|---|---|
| ORAL | IV/SC | ORAL | IV/SC | ORAL | IV/SC | TRANSDERMAL[#] | IV/SC | TRANSDERMAL[#] |
| 5mg | 2.5mg | 3.33mg | 1.66mg | 1mg | 0.5mg | - | - | - |
| 10mg | 5mg | 6.66mg | 3.33mg | 2mg | 1mg | - | 0.3mg | 5 micrograms/hour[*] |
| 14.4mg | 7.2mg | 9.6mg | 4.8mg | 2.88mg | 1.44mg | 6 micrograms/hour | 0.5mg | - |
| 20mg | 10mg | 13.33mg | 6.66mg | 4mg | 2mg | - | 0.7mg | 10 micrograms/hour[*] |
| 28.8mg | 14.4mg | 19.2mg | 9.6mg | 5.76mg | 2.88mg | 12 micrograms/hour | 1mg | - |
| 30mg | 15mg | 20mg | 10mg | 6mg | 3mg | - | | 15 micrograms/hour[*] |
| 50mg | 25mg | 33.33mg | 16.66mg | 10mg | 5mg | - | 1.5mg | 25 micrograms/hour[*] |
| 60mg | 30mg | 40mg | 20mg | 12mg | 6mg | 25 micrograms/hour | 2mg | 35 micrograms/hour[*] |
| 100mg | 50mg | 66.66mg | 33.33mg | 20mg | 10mg | - | 3.3mg | 52.5micrograms/hour[*] |
| 120mg | 60mg | 80mg | 40mg | 24mg | 12mg | 50 micrograms/hour | 4mg | 70 micrograms/hour[*] |
| 150mg | 75mg | 100mg | 50mg | 30mg | 15mg | - | 5mg | |
| 180mg | 90mg | 120mg | 60mg | 36mg | 18mg | 75 micrograms/hour | 6mg | |
| 240mg | 120mg | 160mg | 80mg | 48mg | 24mg | 100 micrograms/hour | 8mg | |

[α]National and international guidelines also support the use of a 2:1 ratio when switching between morphine and oxycodone.
Oxycodone is available as immediate release capsules 5mg, 10mg and 20mg, liquid 1mg/ml or 10mg/ml and sustained release tablets 5mg, 10mg, 20mg, 40mg and 80mg. Oxycodone solution for injection is available in 10mg/ml and 50mg/ml strengths.
[β] See 'The Use of Alfentanil in a Syringe Driver in Palliative Medicine' document available from the Palliative Meds Info webpages http://www.olh.ie/7-departments/166-palliative-meds-info/. Doses have been rounded to the nearest whole number or the nearest first decimal point.
# Transdermal fentanyl and buprenorphine patches are prescribed in micrograms (mcg)/hour. Equivalent doses are based on the 24 hour dose of fentanyl or buprenorphine received from a patch. See product literature for further information.
* Based on buprenorphine to morphine ratio of 1:70-83.



Appendix C

**Appendix D**

**PRN chart example to be added on**

The Drug Kardex sample just needs to be scanned and pasted on