



Eastern Metropolitan Region
Palliative Care Consortium

Eastern Metropolitan Region Palliative Care Consortium (Victoria) Clinical Working Party

Syringe Driver Medication Compatibilities - Practice Guidelines

October 2008

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The EMR PCC Working Party hopes you find the document to be a useful guide and a practical resource to your practice. We do welcome feedback regarding recommendations for the planned formal review process in June 2010. Please send your comments to the Consortium Manager as above, or email: consortiummanager@epc.asn.au

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INSTRUCTIONS FOR USE

These guidelines work best if used electronically. The Contents pages have hyperlinks to each section.
Printing: It is highly recommended these guidelines are printed in colour, to aid ease of use.

DISCLAIMER

The information in this document is intended as a guideline only. It is the responsibility of the user to ensure information in this document is used correctly. These guidelines reflect current Australian/Victorian palliative care practice, and published evidence.

Caution should be used when combining medications in syringe drivers; mixtures should be closely monitored for discolouration, precipitation and crystallisation.

All medication compatibility combinations derived from these guidelines should be checked and prescribed by a medical doctor with appropriate experience before administering.

If you require further information regarding drug combinations and compatibility data, contact a specialist hospital-based pharmacy drug information service.

Medication doses should be modified in response to the patient/client's clinical situation and status, including previous exposure to opioids and concurrent medications. When administering opioids, and setting up syringe drivers, follow your organisation's policy and procedures.

All patients should be monitored closely when commencing and/or switching opioid medications.

Acknowledgements

EMR PCC Clinical Working Party

- Ms. Tracey Mander, EMR PCC Consortium Manager (chair)
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- Karen Quinn
- Professor Michael Ashby, Director of Palliative Care, Royal Hobart Hospital

KEY

Instructions for reading the list of medications

All medications are listed in alphabetical order. When searching for medication combinations, search by the medication which occurs first alphabetically.





Example:

Haloperidol
Haloperidol, Hydromorphone
Haloperidol, Hydromorphone, Metoclopramide

Medication compatibilities *are not* repeated in reverse order. When assessing whether or not medications are compatible, list them in alphabetical order, and then look them up.

For example if you wish to know the compatibility of morphine and clonazepam, look up clonazepam first and you will find the relevant information.

Medications without references have been checked with © Dr. Ian Back's SD2000, 2001 Database of drug compatibility in syringe drivers. There is now a draft updated version (October 2007) available at the Palliative Care Medicine Handbook website (<http://book.pallcare.info/index.php?tid=99&id=298&dg=1>). It has yet to be ratified.

Symbol	Explanation
	Compatible
	Compatible, read note for special considerations
	Compatible, but conflicting data: read note for special considerations
	Incompatible
WFI	Diluent = Sterile Water For Injection (WFI)
NaCl 0.9%	Diluent = Normal Saline (NaCl 0.9%)
WFI NaCl 0.9%	Diluent = either Sterile Water for Injection, or Normal Saline (NaCl 0.9%)
Glucose 5%	Diluent = Glucose 5%

NOTE A	Pharmacologically compatible in tests - referenced
NOTE B	At concentrations of 3mg/ml or below only
NOTE C	Incompatible at small volumes (i.e. syringe drivers)
NOTE D	Physically compatible in tests (including visually)
NOTE E	Potential for site reaction – see 'Infusion Site Problems'
NOTE F	Conflicting information regarding compatibility with one or more medications – proceed with caution

Diluent information

NaCl 0.9%, Sterile Water for Injection (WFI) and Glucose 5% are suitable for subcutaneous infusions. Diluting syringe contents as much as possible is recommended to reduce site irritation.

Glucose 5% was used as the diluent in some of the referenced studies supporting this compatibility table (references 3, 8 and Palliative Drugs website). *Caution should be used when using sterile water or 0.9% Normal Saline as diluents for medication combinations that have been tested using glucose only.* (References 3, 9).

If you have experience of medication combinations that are visually compatible with water for injection and/or normal saline, but have been listed as only being tested with glucose 5%, consider adding a report to the relevant websites to increase the evidence base.

Sodium Chloride 0.9% (NaCl 0.9%) is recommended as the diluent of choice when medications are compatible with more than one solution. It is closest to physiological tonicity, therefore less likely to cause irritation. The main exception to this is cyclizine.

Cyclizine should always be diluted with **WFI** to avoid precipitation.

Some literature advocates using **NaCl** as diluent for **Ondansetron, Granisetron, Ketamine, Ketorolac, Octreotide and Levomepromazine (methotrimeprazine)** to minimise irritant effect of these drugs. Where these medications are listed, this document recommends NaCl 0.9% as the diluent, except where evidence has stated otherwise.

Points on mixing medications

(adapted from Palliative Care Information website: www.pallcare.info)

When combining medications for syringe driver use, be aware there is data available from compatibility studies for only a few combinations.

Where possible, use as few medications as possible in one syringe driver. If several medications are required, consider using more than one syringe driver where this is practical. The more medications that are mixed, the higher the potential there is for them to interact, particularly where pH differs. There is also the possibility that medications could interact to form a new, potentially toxic compound, without any obvious signs.

When considering using a combination of drugs not previously used, or, where there is little information regarding the particular combination you wish to use, consider the following points (adapted from Palliative Care Information website):

1. Refer to the evidence, where it exists
2. Be aware of risks
3. Consult relevant palliative care literature – Australian Therapeutic Guidelines (Palliative Care), The Syringe Driver in Palliative Care (Dickman, 2005), Palliative care websites: www.palliativedrugs.com, <http://book.pallcare.info>
4. Consult experienced palliative care staff, or palliative care organisations
5. Consult a hospital pharmacist, or drug information centre (preferably with palliative care experience)
6. Consider using more than one syringe driver
7. Carefully inspect the solution before commencing for precipitation/crystallisation
8. Observe the patient carefully for signs the medications may not be working as they should

Ketorolac

Where possible Ketorolac should not be mixed with other medications. Its use long-term is not recommended (i.e. > 3 weeks).

Morphine, Morphine Sulfate, Morphine Tartrate

While reviewing the literature for this document, it was not always clear whether morphine sulfate or morphine tartrate was tested. Where we have been able to find out, the relevant morphine salt has been listed. We did not want to assume that morphine sulfate was the medication tested where not specifically documented. Therefore, caution is urged when mixing morphine in a syringe driver, particularly morphine tartrate.

Sufentanil

Almost no data is available regarding compatibility of sufentanil with other syringe driver medications, although it is commonly used in palliative care in Australia. Sufentanil is very similar to fentanyl, but with a more rapid onset, higher concentration and shorter duration of action. It is often used to reduce the volume of fluid required in a syringe driver. In

the absence of robust evidence, and given its structural similarity to fentanyl, it is most likely compatible with medications that fentanyl is compatible with (www.pallcare.info).

Compatibility definitions

From: www.palliativedrugs.com

Definition of chemical compatibility data (note A)

If mixing two or more drugs does not result in a chemical change leading to loss or degradation of one or more of the drugs, the mixture is said to be chemically compatible. Chemical compatibility data are generally obtained by analysing the drug mixture by high-performance liquid chromatography (HPLC) at specified concentrations and several time points when kept under controlled conditions.

Definition of physical compatibility data (note D)

Drug combinations are considered physically compatible if there is no observed evidence of physical changes during the time period studied. E.g. discolouration, clouding, the precipitation of particles or crystals.

Assessment may be solely visual (which may be subjective, limited and imprecise), or may involve a more rigorous microscopic assessment under polarised light at specified concentrations and several time points when kept under controlled conditions. It may include other laboratory tests to determine whether any physical changes have taken place. It is more robust than observational data, but is still not definitive, as a solution may remain physically clear even when there is chemical incompatibility.

When referring to references reporting physical compatibility it is important to have an understanding of these different levels of assessment and their respective limitations.

Infusion site problems

From: www.palliativedrugs.com

Note E

























A skin reaction at the infusion site is most commonly found with **cyclizine, ketamine, levomepromazine (methotrimeprazine) and methadone**. Excluding mixtures containing cyclizine, **0.9% normal saline** can be used as the diluent in an attempt to reduce site reactions with irritant infusions. Occasionally patients may be allergic to the nickel needles. Sites may last up to a week, depending on the drugs used. The site should be changed if painful or inflamed. Routine changing every 72h reduces the frequency of site problems. If frequent resiting is necessary, e.g. every 24–48h, consider the following strategies:

- Use a larger syringe to enable a more dilute mixture to be used, thereby decreasing the final drug concentrations
- Change to a q12h regimen, thereby permitting further dilution of the drugs
- Change an irritant drug to a less irritant alternative, e.g. cyclizine to haloperidol
- Hyaluronidase 150 units can be injected into the site before starting the infusion. Although its effect lasts only about 24h, if the site is rotated every 2–3 days, hyaluronidase generally needs to be injected only once per site and not daily. *Do not add to the syringe because degradation of hyaluronidase may occur*
- Inject a small volume of dexamethasone directly into the infusion site, via the cannula to be used. Flush with NaCl then connect the syringe driver and commence (Dickman, 2005).
- Use a plastic (Teflon™ or Vialon™) cannula instead of a butterfly needle

DRUG	COMPATABILITY	DILUENT	REFERENCE
Clonazepam		WFI NaCl 0.9%	
Clonazepam, Cyclizine		WFI	
Clonazepam, Cyclizine, Haloperidol, Morphine Sulfate		WFI	8
Clonazepam, Cyclizine, Morphine Sulfate		WFI	14 www.palliativedrugs.com
Clonazepam, Glycopyrrolate		WFI	8
Clonazepam, Haloperidol		WFI NaCl 0.9%	8 www.palliativedrugs.com
Clonazepam, Haloperidol, Hyoscine Butylbromide, Oxycodone		WFI NaCl 0.9%	8
Clonazepam, Haloperidol, Metoclopramide		WFI	8
Clonazepam, Haloperidol, Metoclopramide, Morphine Sulfate/Tartrate		WFI NaCl 0.9%	8, 14 www.pallcare.info
Clonazepam, Haloperidol, Morphine		WFI NaCl 0.9%	14 www.palliativedrugs.com
Clonazepam, Hyoscine <i>Butylbromide</i> Levomepromazine, Oxycodone		WFI NaCl 0.9%	8
Clonazepam, Hyoscine Hydrobromide, Levomepromazine, Oxycodone		WFI NaCl 0.9%	8
Clonazepam, Hyoscine Hydrobromide, Metoclopramide		WFI	8
Clonazepam, Ketamine		NaCl 0.9%	www.pallcare.info
Clonazepam, Ketamine, Morphine sulfate/tartrate		NaCl 0.9%	www.palliativedrugs.com
Clonazepam, Ketamine, Oxycodone		NaCl 0.9%	
Clonazepam, Metoclopramide		WFI NaCl 0.9%	www.palliativedrugs.com
Clonazepam, Metoclopramide, Morphine		WFI NaCl 0.9%	14 www.palliativedrugs.com
Clonazepam, Morphine Sulfate/Tartrate		WFI NaCl 0.9%	6 www.palliativedrugs.com
Clonazepam, Oxycodone		WFI NaCl 0.9%	8
Cyclizine	See note E Always dilute with WFI	WFI	
Cyclizine, Fentanyl		WFI	
Cyclizine, Fentanyl, Haloperidol		WFI	
Cyclizine, Fentanyl, Midazolam		WFI	8
Cyclizine, Glycopyrrolate, Haloperidol		WFI	8
Cyclizine, Glycopyrrolate, Haloperidol, Octreotide		WFI	8

Medications without references have been checked with © Dr. Ian Back's SD2000, 2001 Database of drug compatibility in syringe drivers. There is now a draft updated version (October 2007) available at the Palliative Care Medicine Handbook website (<http://book.pallcare.info>). It has yet to be ratified.

If you have experience of medication combinations that are compatible with water for injection and/or normal saline, but have been listed as only being tested with glucose 5%, consider adding a report to the relevant websites to increase the evidence base.

DRUG	COMPATABILITY	DILUENT	REFERENCE
Cyclizine, Glycopyrrolate, Levomepromazine	 E	WFI	8
Cyclizine, Haloperidol	 E	WFI	www.palliatiivedrugs.com
Cyclizine, Haloperidol, Hydromorphone, Midazolam	 E	WFI	8
Cyclizine, Haloperidol, Hyoscine hydrobromide, Midazolam	 E	WFI	
Cyclizine, Haloperidol, Metoclopramide	 E	WFI	
Cyclizine, Haloperidol, Metoclopramide, Morphine	 E	WFI	
Cyclizine, Haloperidol, Midazolam	 E	WFI	
Cyclizine, Haloperidol, Midazolam, Morphine	 E	WFI	
Cyclizine, Haloperidol, Midazolam, Morphine Tartrate	 E	WFI	8
Cyclizine, Haloperidol, Morphine Tartrate	 E	WFI	8
Cyclizine, Haloperidol, Oxycodone	 E, B	WFI	8
Cyclizine, Hydromorphone, Octreotide	 E	WFI	8
Cyclizine, Hyoscine <i>Butylbromide</i>	 E, F	WFI	0.9% NaCl
Cyclizine, Hyoscine Hydrobromide, Morphine Tartrate	 E	WFI	8
Cyclizine, Ketamine, Midazolam, Morphine Tartrate	 E	WFI	8
Cyclizine, Ketorolac			15
Cyclizine, Levomepromazine	 E	WFI	
Cyclizine, Metoclopramide	 E	WFI	
Cyclizine, Metoclopramide, Midazolam, Morphine	 E	WFI	
Cyclizine, Metoclopramide, Morphine	 E	WFI	
Cyclizine, Midazolam, Morphine Sulfate	 E, F	WFI	
Cyclizine, Morphine Sulfate	 E	WFI	
Cyclizine, Oxycodone	 E, F	WFI	www.pallcare.info
Fentanyl		WFI	NaCl 0.9%
Fentanyl Glycopyrrolate		WFI	NaCl 0.9%
Fentanyl, Glycopyrrolate, Haloperidol, Metoclopramide, Midazolam	 F	WFI	



























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DRUG	COMPATABILITY	DILUENT	REFERENCE
Fentanyl, Glycopyrrolate, Midazolam		WFI NaCl 0.9%	
Fentanyl, Haloperidol		WFI NaCl 0.9%	
Fentanyl, Hyoscine Hydrobromide		NaCl 0.9%	
Fentanyl, Hyoscine Hydrobromide, Levomepromazine	E	NaCl 0.9%	
Fentanyl, Hyoscine Hydrobromide, Levomepromazine, Midazolam	E	NaCl 0.9%	
Fentanyl, Ketamine	E	WFI NaCl 0.9%	
Fentanyl, Ketorolac		WFI	3
Fentanyl, Levomepromazine	E	NaCl 0.9%	
Fentanyl, Levomepromazine, Midazolam	E	NaCl 0.9%	
Fentanyl, Levomepromazine, Octreotide	E	NaCl 0.9%	
Fentanyl, Metoclopramide		WFI NaCl 0.9%	
Fentanyl, Metoclopramide, Midazolam		WFI	
Fentanyl, Midazolam		WFI NaCl 0.9%	
Fentanyl, Ondansetron		NaCl 0.9%	
Glycopyrrolate		WFI NaCl 0.9%	
Glycopyrrolate, Haloperidol, Hydromorphone, Octreotide	D	Glucose 5%	8
Glycopyrrolate, Haloperidol, Hydromorphone, Promethazine	D	Glucose 5%	8
Glycopyrrolate, Haloperidol, Midazolam, Oxycodone		WFI NaCl 0.9%	www.palliativedrugs.com
Glycopyrrolate, Hydromorphone, Metoclopramide, Octreotide	D	Glucose 5%	8
Glycopyrrolate, Ketamine, Midazolam	E	WFI	
Glycopyrrolate, Levomepromazine, Octreotide		WFI NaCl 0.9% (Preferred)	8
Glycopyrrolate, Midazolam		WFI NaCl 0.9%	
Glycopyrrolate, Morphine Sulfate		WFI	
Glycopyrrolate, Octreotide		WFI	
Glycopyrrolate, Ondansetron		NaCl 0.9%	
Glycopyrrolate, Oxycodone		WFI	

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DRUG	COMPATABILITY	DILUENT	REFERENCE
Haloperidol		WFI NaCl 0.9%	
Haloperidol, Hydromorphone	 D	WFI NaCl 0.9%	3
Haloperidol, Hydromorphone, Metoclopramide		NaCl 0.9%	
Haloperidol, Hydromorphone, Hyoscine Hydrobromide	 D	Glucose 5%	8
Haloperidol, Hyoscine Butylbromide		WFI NaCl 0.9%	8
Haloperidol, Hyoscine Butylbromide, Ketorolac, Morphine		NaCl 0.9%	
Haloperidol, Hyoscine Butylbromide, Levomepromazine, Midazolam		WFI NaCl 0.9%	8
Haloperidol, Hyoscine Butylbromide, Octreotide, Oxycodone		WFI NaCl 0.9%	8
Haloperidol, Hyoscine Butylbromide, Oxycodone, Midazolam		WFI NaCl 0.9%	8
Haloperidol, Hyoscine Hydrobromide		WFI NaCl 0.9%	
Haloperidol, Hyoscine Hydrobromide, Midazolam		WFI NaCl 0.9%	
Haloperidol, Hyoscine Hydrobromide, Octreotide, Oxycodone		WFI NaCl 0.9%	8
Haloperidol, Ketamine	 E	NaCl 0.9%	8
Haloperidol, Ketamine, Midazolam	 E	WFI NaCl 0.9%	
Haloperidol, Ketamine, Morphine sulfate	 E	NaCl 0.9%	www.palliatedrugs.com
Haloperidol, Ketorolac			15
Haloperidol, Methadone	 E	Glucose 5%	
Haloperidol, Metoclopramide		WFI NaCl 0.9%	
Haloperidol, Metoclopramide, Midazolam, Morphine		WFI	
Haloperidol, Metoclopramide, Midazolam, Oxycodone		WFI NaCl 0.9%	www.palliatedrugs.com
Haloperidol, Metoclopramide, Morphine		WFI NaCl 0.9%	
Haloperidol, Metoclopramide, Oxycodone	 A	WFI NaCl 0.9%	www.palliatedrugs.com
Haloperidol, Midazolam		WFI NaCl 0.9%	8
Haloperidol, Midazolam, Morphine		WFI	
Haloperidol, Midazolam, Octreotide, Oxycodone		WFI	www.palliatedrugs.com
Haloperidol, Midazolam, Oxycodone		WFI	www.palliatedrugs.com
Haloperidol, Morphine Sulfate		WFI NaCl 0.9%	

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DRUG	COMPATABILITY	DILUENT	REFERENCE
Haloperidol, Morphine Tartrate		NaCl 0.9%	8
Haloperidol, Morphine Sulfate, Octreotide		WFI	
Haloperidol, Oxycodone		WFI NaCl 0.9%	10
Hydromorphone		Diluent for single agent use not stated	
Hydromorphone, Hyoscine Butylbromide, Midazolam		NaCl 0.9%	www.palliatedrugs.com
Hydromorphone, Hyoscine Hydrobromide		Glucose 5%	3, 5
Hydromorphone, Hyoscine Hydrobromide, Levomepromazine, Midazolam		NaCl 0.9%	www.pallcare.info
Hydromorphone, Hyoscine Hydrobromide, Octreotide		Glucose 5%	8
Hydromorphone, Ketamine, Metoclopramide		NaCl 0.9%	
Hydromorphone, Ketamine, Midazolam		NaCl 0.9%	8
Hydromorphone, Ketorolac		Glucose 5%	3, 11
Hydromorphone, Levomepromazine		NaCl 0.9%	3 www.palliatedrugs.com
Hydromorphone, Metoclopramide		Glucose 5%	3
Hydromorphone, Metoclopramide, Midazolam		NaCl 0.9%	8
Hydromorphone, Metoclopramide, Ondansetron		Glucose 5%	8
Hydromorphone, Midazolam		Glucose 5%	3
Hydromorphone, Phenytoin			























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If you have experience of medication combinations that are compatible with water for injection and/or normal saline, but have been listed as only being tested with glucose 5%, consider adding a report to the relevant websites to increase the evidence base.

DRUG	COMPATABILITY	DILUENT		REFERENCE
Hyoscine Butylbromide (Hyoscine BBr)		WFI	NaCl 0.9%	
Hyoscine BBr, Levomepromazine, Midazolam, Oxycodone	 E	WFI	NaCl 0.9%	8 www.pallcare.info www.palliativedrugs.com
Hyoscine BBr, Levomepromazine, Octreotide, Oxycodone	 E	WFI	NaCl 0.9%	8
Hyoscine BBr, Levomepromazine, Oxycodone	 E	WFI	NaCl 0.9%	8 www.pallcare.info www.palliativedrugs.com
Hyoscine BBr, Metoclopramide	 E	WFI		
Hyoscine BBr, Metoclopramide, Midazolam	 E	NaCl 0.9%		8
Hyoscine BBr, Midazolam	 E	NaCl 0.9%		8
Hyoscine BBr, Midazolam, Oxycodone	 E	WFI	NaCl 0.9%	www.pallcare.info
Hyoscine BBr, Morphine Sulfate	 E	WFI	NaCl 0.9%	
Hyoscine BBr, Morphine Sulfate, Midazolam	 E	NaCl 0.9%		8
Hyoscine BBr, Oxycodone	 A	WFI	NaCl 0.9%	10
Hyoscine Hydrobromide (Hyoscine HBr)		WFI	NaCl 0.9%	
Hyoscine HBr, Ketorolac	 E	NaCl 0.9%		8
Hyoscine HBr, Levomepromazine, Midazolam	 E	WFI	NaCl 0.9% (Preferred)	8
Hyoscine HBr, Levomepromazine, Octreotide, Oxycodone	 E	WFI	NaCl 0.9% (Preferred)	8
Hyoscine HBr, Levomepromazine, Oxycodone	 E	WFI	NaCl 0.9% (Preferred)	8
Hyoscine HBr, Methadone	 E	Glucose 5%		
Hyoscine HBr, Metoclopramide	 E	WFI		
Hyoscine HBr, Midazolam	 E	WFI	NaCl 0.9%	
Hyoscine HBr, Midazolam, Metoclopramide	 E	WFI	NaCl 0.9%	No diluent information found for this combination. Consensus opinion.
Hyoscine HBr, Morphine Sulfate	 E	WFI	NaCl 0.9%	www.palliativedrugs.com/pdi.html
Hyoscine HBr, Morphine Sulfate/Tartrate, Midazolam	 E	NaCl 0.9%		8
Hyoscine HBr, Oxycodone	 A	WFI	NaCl 0.9%	10

















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DRUG	COMPATABILITY	DILUENT	REFERENCE
Ketamine	See Note E	NaCl 0.9%	
Ketamine, Diazepam			
Ketamine, Metoclopramide	 E	WFI NaCl 0.9% (Preferred)	
Ketamine, Metoclopramide, Midazolam	 E	NaCl 0.9%	8
Ketamine, Metoclopramide, Morphine Sulfate/Tartrate	 E	NaCl 0.9%	8 www.palliatedrugs.com
Ketamine, Midazolam	 E	WFI NaCl 0.9% (Preferred)	8
Ketamine, Midazolam, Morphine Sulfate	 E	NaCl 0.9%	www.palliatedrugs.com
Ketamine, Morphine Sulfate	 E	NaCl 0.9%	17,13, 1
Ketamine, Oxycodone	 E	WFI NaCl 0.9% (Preferred)	
Ketorolac		NaCl 0.9%	7
Ketorolac, Levomepromazine			
Ketorolac, Methadone		Glucose 5%	3
Ketorolac, Midazolam			15
Ketorolac, Morphine Sulfate	 C		15
Ketorolac, Promethazine			15
Levomepromazine	See note E	NaCl 0.9%	
Levomepromazine, Methadone	 E	NaCl 0.9%	
Levomepromazine, Metoclopramide	 E	NaCl 0.9%	
Levomepromazine, Metoclopramide, Oxycodone	 E	NaCl 0.9%	www.palliatedrugs.com www.pallcare.info
Levomepromazine, Midazolam	 E	WFI NaCl 0.9% (Preferred)	
Levomepromazine, Midazolam, Octreotide	 E	NaCl 0.9%	
Levomepromazine, Morphine Sulfate	 E	WFI	
Levomepromazine, Octreotide	 E	WFI	8
Levomepromazine, Octreotide, Ondansetron	 E	NaCl 0.9%	8
Levomepromazine, Octreotide, Oxycodone	 E	WFI NaCl 0.9% (Preferred)	8








Medications without references have been checked with © Dr. Ian Back's SD2000, 2001 Database of drug compatibility in syringe drivers. There is now a draft updated version (October 2007) available at the Palliative Care Medicine Handbook website (<http://book.pallcare.info>). It has yet to be ratified.

If you have experience of medication combinations that are compatible with water for injection and/or normal saline, but have been listed as only being tested with glucose 5%, consider adding a report to the relevant websites to increase the evidence base.

DRUG	COMPATABILITY	DILUENT		REFERENCE
Levomepromazine, Oxycodone	 A, E	WFI	NaCl 0.9% (Preferred)	10
Lignocaine		WFI	NaCl 0.9%	
Lignocaine, Metoclopramide	 D	WFI		16
Lignocaine, Metoclopramide, Oxycodone		WFI		
Methadone	See note E	WFI	NaCl 0.9%	
Methadone, Metoclopramide	 E	Glucose 5%		
Methadone, Midazolam	 E	NaCl 0.9%		
Metoclopramide		WFI	NaCl 0.9%	
Metoclopramide, Midazolam		WFI	NaCl 0.9%	
Metoclopramide, Midazolam, Morphine Sulfate		WFI	NaCl 0.9%	www.palliativedrugs.com
Metoclopramide, Morphine sulfate		WFI	NaCl 0.9%	www.palliativedrugs.com
Metoclopramide, Morphine sulfate, Octreotide		Glucose 5%		
Metoclopramide, Morphine sulfate, Ondansetron		Glucose 5%		8
Metoclopramide, Octreotide		WFI		8
Metoclopramide, Ondansetron		NaCl 0.9%		
Metoclopramide, Oxycodone	 A	WFI	NaCl 0.9%	10 www.pallcare.info
Midazolam		WFI	NaCl 0.9%	
Midazolam, Morphine Sulfate		WFI	NaCl 0.9%	
Midazolam, Ondansetron		WFI	NaCl 0.9% (Preferred)	
Midazolam, Oxycodone	 A	WFI	NaCl 0.9%	10

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If you have experience of medication combinations that are compatible with water for injection and/or normal saline, but have been listed as only being tested with glucose 5%, consider adding a report to the relevant websites to increase the evidence base.

DRUG	COMPATABILITY	DILUENT		REFERENCE
Morphine		WFI	NaCl 0.9%	
Morphine Sulfate, Octreotide		WFI	NaCl 0.9% (Preferred)	www.palliativedrugs.com
Morphine Sulfate, Ondansetron		WFI	NaCl 0.9% (Preferred)	www.pallcare.info
Morphine Sulfate, Phenytoin				
Octreotide		WFI	NaCl 0.9% (Preferred)	
Octreotide, Ondansetron		WFI	NaCl 0.9% (Preferred)	
Octreotide, Ondansetron, Oxycodone		WFI	NaCl 0.9% (Preferred)	8
Octreotide, Oxycodone			NaCl 0.9%	8
Prochlorperazine		WFI	NaCl 0.9%	
Prochlorperazine, Oxycodone				10
Sufentanil	See page 5 regarding sufentanil compatibilities			

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If you have experience of medication combinations that are compatible with water for injection and/or normal saline, but have been listed as only being tested with glucose 5%, consider adding a report to the relevant websites to increase the evidence base.

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- <http://www.pallcare.info>
- www.palliativedrugs.com

Eastern Metropolitan Palliative Care Consortium – Palliative Care organisation websites:

St. Vincent's Health: www.svhm.org.au Eastern Health: www.easternhealth.org.au Eastern Palliative Care: www.eastpallcare.asn.au