The Marie Curie
Palliative Care Institute
LIVERPOOL

Liverpool Care Pathway for the Dying Patient (LCP)

National LCP Renal Steering Group

Guidelines for LCP Drug Prescribing in Advanced Chronic Kidney Disease *(estimated glomerular filtration rate < 30 ml/min)*

June 2008

ENDORSED BY:

DH Department of Health

The Renal Association
founded 1950

BRITISH RENAL SOCIETY
MULTI-PROFESSIONAL TEAM

The Royal Liverpool and Broadgreen University Hospitals NHS Trust

Marie Curie Cancer Care
Devoted to Life

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DH INFORMATION READER BOX

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HR / Workforce	Commissioning
Management	IM & T
Planning /	Finance
Clinical	Social Care / Partnership Working

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Author	DH Renal NSF Team and Marie Curie Palliative Care Institute
Publication Date	01 May 2008
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Cross Ref	National Service Framework for Renal Services Part 2
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Action Required	To note and consider best practice
Timing	**n/a**
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For Recipient's Use	

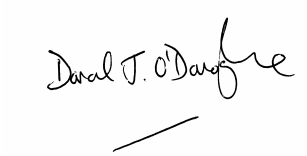
Foreword

Recent advances in the treatment of renal failure have meant that many patients are now surviving for longer, and with increased quality of life, due to renal replacement therapies and kidney transplants. Over 50% of the best-matched kidney transplants are still functioning after twenty-five years and some patients can survive for over twenty years on dialysis. But for those patients in whom such interventions are not appropriate or no longer effective, the shift to palliative care should be encouraged to maintain a good quality of life in dying patients

In 2005 a National LCP Renal Steering Group was developed and utilised an action research approach that has been used to facilitate the transferability of the LCP for use in these more specialist renal areas. This excellent programme included the design of patient and carers information, professional guidance and this innovative and much needed drug guidance for patients with advanced and chronic kidney disease in the last days of life.

This guidance will be welcomed by all specialists and generalists working to ensure models of best practice in the last days of life. The authors have provided clear guidance and advice on medicines management and the control of distressing symptoms. It will enable the service to respond to and respect the wishes of patients and their carers.

All patients with advanced chronic kidney disease deserve optimum care in the last days of life. I believe the LCP and this associated guidance provides us with a significant step towards providing a model of excellence.



Dr Donal O'Donoghue
National Clinical Director for Kidney Care, Department of Health

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Introduction

It is recognised that most patients with kidney disease do not die directly from kidney failure, but from other medical problems. However renal impairment, even if not the primary problem, is an important consideration when considering prescribing drugs in these patients. This is particularly the case for opioids, as metabolites can and do accumulate in renal impairment and may lead to significant toxicity if this is not recognised. These guidelines are designed to optimise the risk/benefit ratio of these drugs. However, it is important to be aware that the risks of toxicity and side effects increase cumulatively as GFR falls. These guidelines are aimed at controlling symptoms once it is recognised that the patient is dying and in the last few days of life. Usually at this stage, the patient will require medication to be given by the subcutaneous route.

Prescribing in Advanced Chronic Kidney Disease
The evidence for symptom control in the dying patient is limited and therefore all of the guidelines are based on level 3 and 4 evidence and expert opinion **(DoH 2005).**

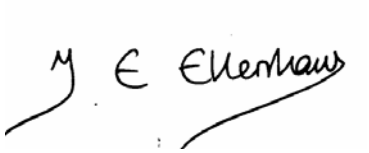
In general, most medications are not excreted well in advanced Chronic Kidney Disease (CKD). It is therefore important to choose medication least likely to accumulate and cause adverse effects. Drug doses may require reduction and dosing intervals may need to be increased to reduce drug toxicity.

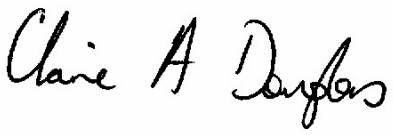
Once administered, a drug may have a longer duration of effect than expected and therefore PRN or regular doses of drugs may need to be given less often.

With regard to management of pain and dyspnoea, the evidence for the use of opioids in renal failure is limited. However, these guidelines aim to provide symptom control safely and without development of opioid toxicity. It is very important to titrate the medication carefully and frequently review the patient as considerable variation between patients can exist.

These guidelines were produced by the National LCP Renal Steering Group based on level 3 and 4 evidence and expert opinion. If you would like to refer to this in your clinical practice may we suggest that you liaise with your local drugs & therapeutics – pharmacy policy & procedure, which will determine safe practice & prescribing protocols within your clinical area

We also suggest that liaison between the Hospital Specialist Palliative Care Team, End of Life Care Leads & Conservative Management Renal Leads is key in caring for patients with advanced CKD in the last hours & days of life.





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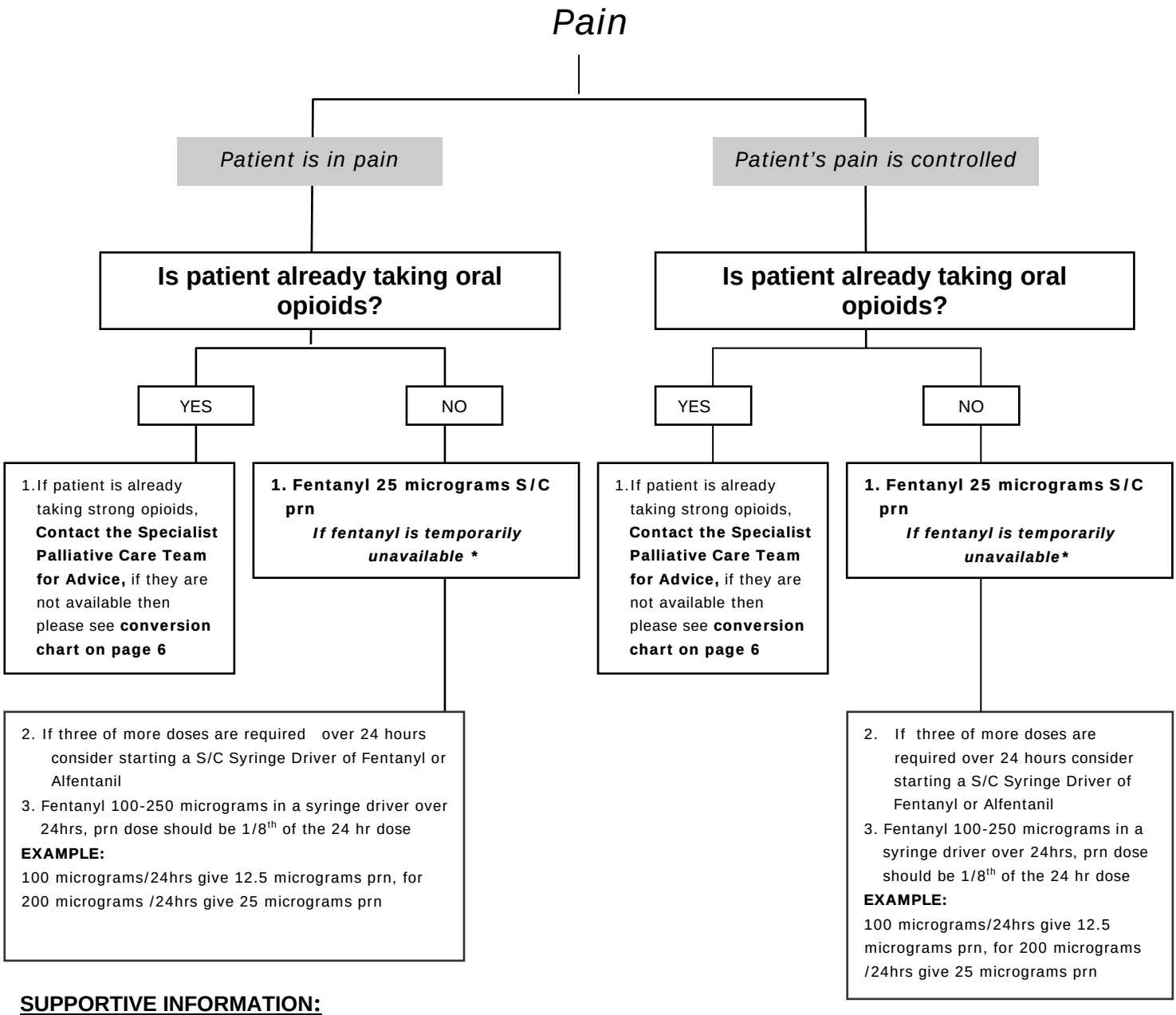


SUPPORTIVE INFORMATION:

- To convert from other strong opioids contact Specialist Palliative Care Team / Pharmacy for further advice & support as needed
- ***** If Fentanyl is temporarily unavailable give:

  Oxycodone 1-2 milligrams S/C prn
  or
  Morphine 1.25 – 2.5 milligrams S/C PRN
- Many of the opioid analgesics and their metabolites may accumulate in Renal Failure causing toxicity with myoclonic jerks, profound narcosis and respiratory depression. Morphine and its metabolites are most likely to cause toxicity. Fentanyl and Alfentanil are less likely to cause these problems, as the metabolites are not active. The duration of effect from Morphine and Oxycodone may last longer than in a patient with normal renal function. (See conversion table on Page 6)
- If Fentanyl dose exceeds 500 micrograms in a Syringe Driver seek expert advice for conversion to Alfentanil
- **If symptoms persist contact the Specialist Palliative Care Team**
- Anticipatory prescribing in this manner will ensure that in the last hours / days of life there is no delay responding to a symptom if it occurs
- ***The LCP National Renal Steering Group produced these guidelines according to best practice and evidence base***

OPIOID CONVERSION TABLE

Opioid equivalent doses (Note: There is no exact equivalence between opioids therefore starting low and titrating upwards is recommended safe practice)

Approximately equivalent opioid doses for PRN ('as required') use

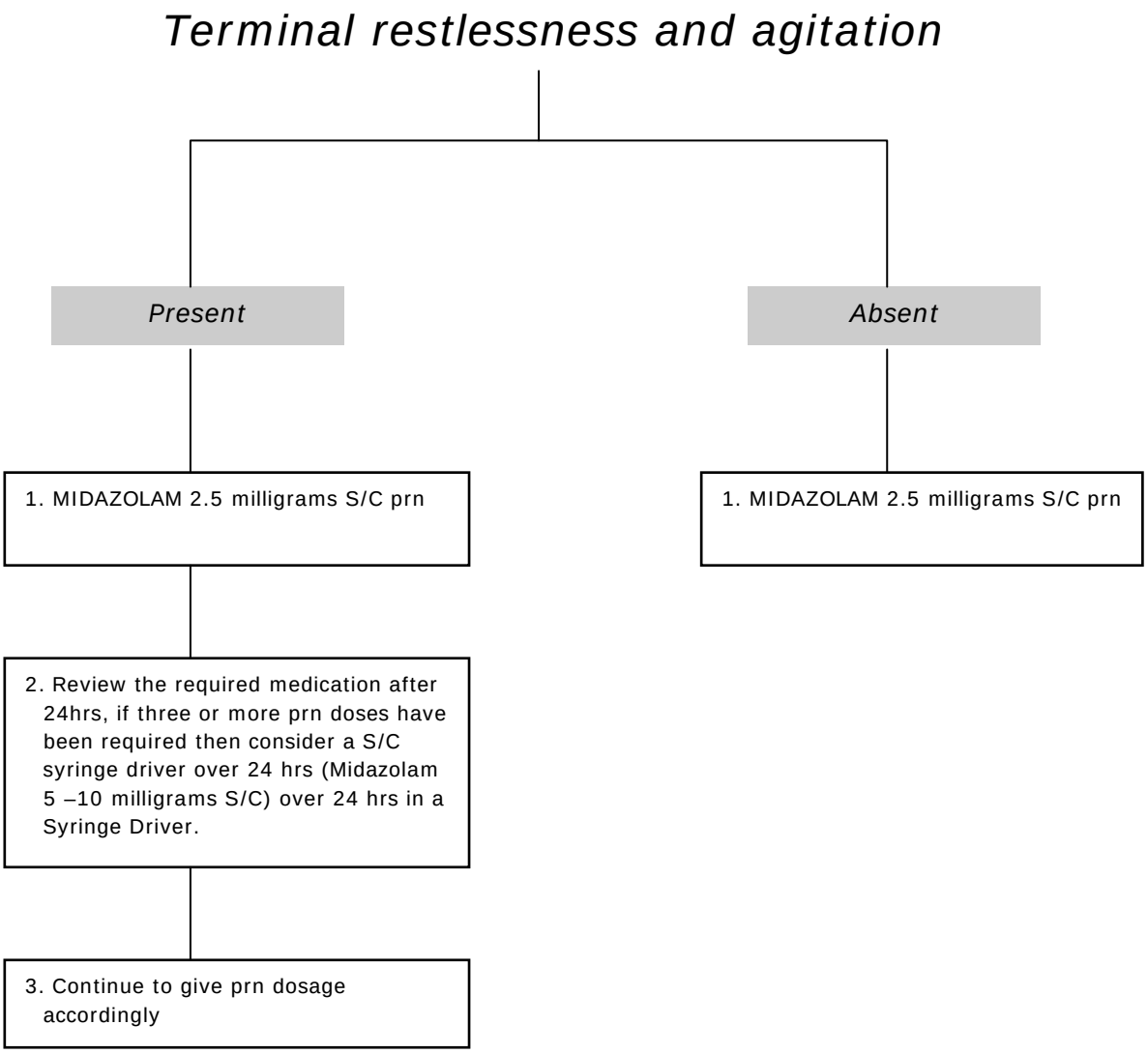
ORAL MORPHINE	**DIAMORPHINE INJECTION**	**MORPHINE INJECTION**	**FENTANYL INJECTION**	**ALFENTANIL INJECTION**	**OXYCODONE INJECTION**
4 milligrams **orally**	1.25 milligrams **subcutaneously**	2 milligrams **subcutaneously**	25 micrograms **subcutaneously**	125 micrograms **subcutaneously**	1 milligram **subcutaneously**
8 milligrams **orally**	2.5 milligrams **subcutaneously**	4 milligrams **subcutaneously**	50 micrograms **subcutaneously**	250 micrograms **subcutaneously**	2 milligrams **subcutaneously**
				Note: alfentanil is not ideal for prn use since it has a very short half life, and doses may only last 1-2 hours	

Note: Do not use these equivalent doses for larger doses without specialist palliative advice, as the small numbers entailed have been rounded up.

Approximately equivalent opioid doses for starting doses in continuous subcutaneous infusions

(Starting doses should be based on prior opioid requirements, and titrated upwards according to the amount of subsequent PRN doses required ***in addition*** to the continuous infusion – there is no upper limit provided the pain is responding well to the opioid, and there are no symptoms or signs of adverse effects or toxicity. Most patients with renal failure require only low doses – if the dose is escalating, advice should be sought from the Palliative Care team)

	DIAMORPHINE INJECTION	**MORPHINE INJECTION**	**FENTANYL INJECTION**	**ALFENTANIL INJECTION**	**OXYCODONE INJECTION**
	5 - 10 milligrams Do not use diamorphine in continuous infusion because of the high risk of accumulation and adverse effects	8 - 16 milligrams Do not use morphine in continuous infusion because of the high risk of accumulation and adverse effects	100 – 200 micrograms	500 micrograms - 1 milligram	4 – 8 milligrams



SUPPORTIVE INFORMATION;

- **If symptoms persist contact the Specialist Palliative Care Team**
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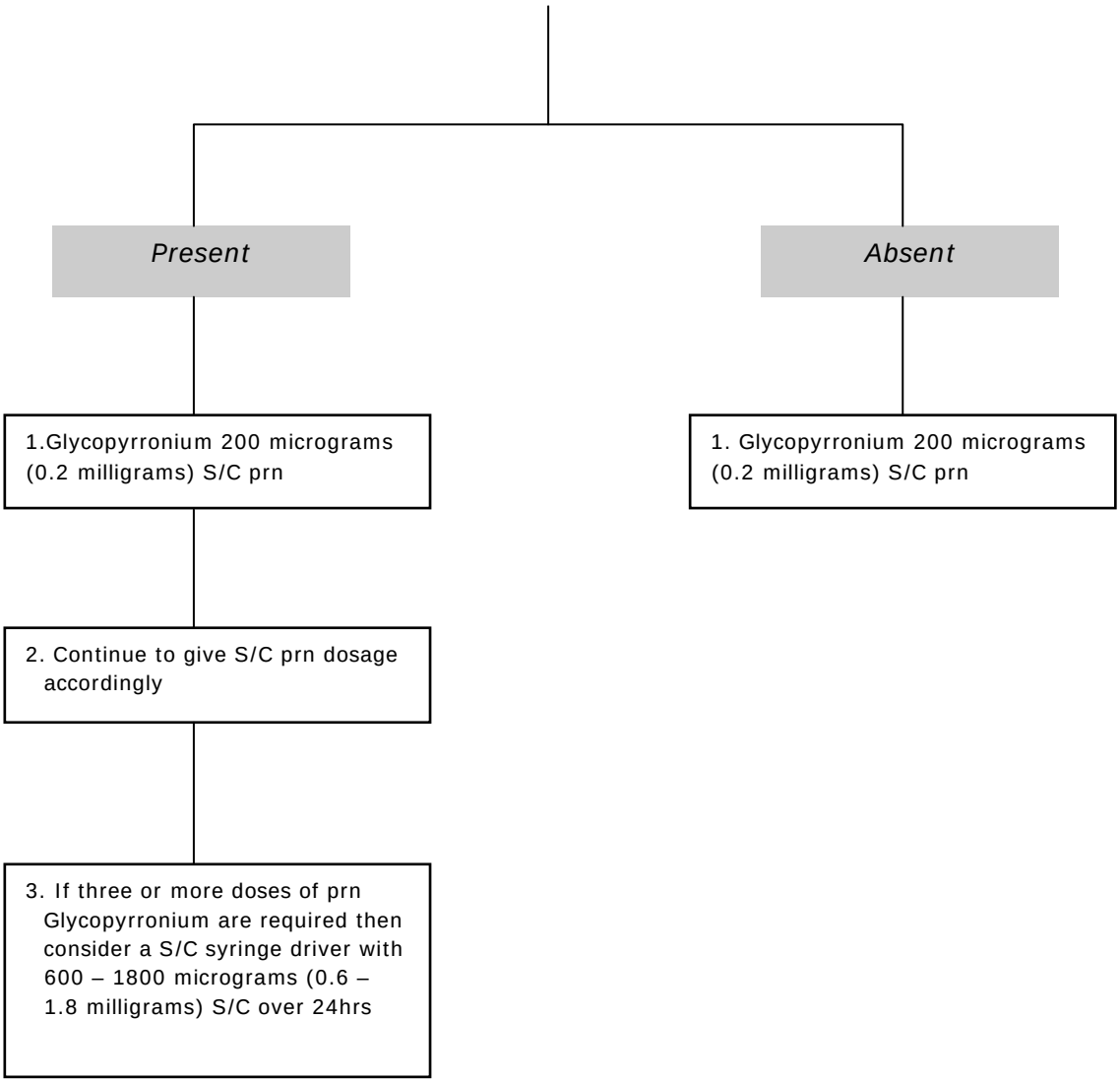

SUPPORTIVE INFORMATION:

- **If symptoms persist contact the Specialist Palliative Care Team**
- Hyoscine butylbromide 20 milligrams s/c prn may be used as an alternative. (If a S/C Syringe Driver is required then consider Hyoscine butylbromide 40 – 120 milligrams over 24 hours)
- Anticipatory prescribing in this manner will ensure that in the last hours / days of life there is no delay responding to a symptom if it occurs.
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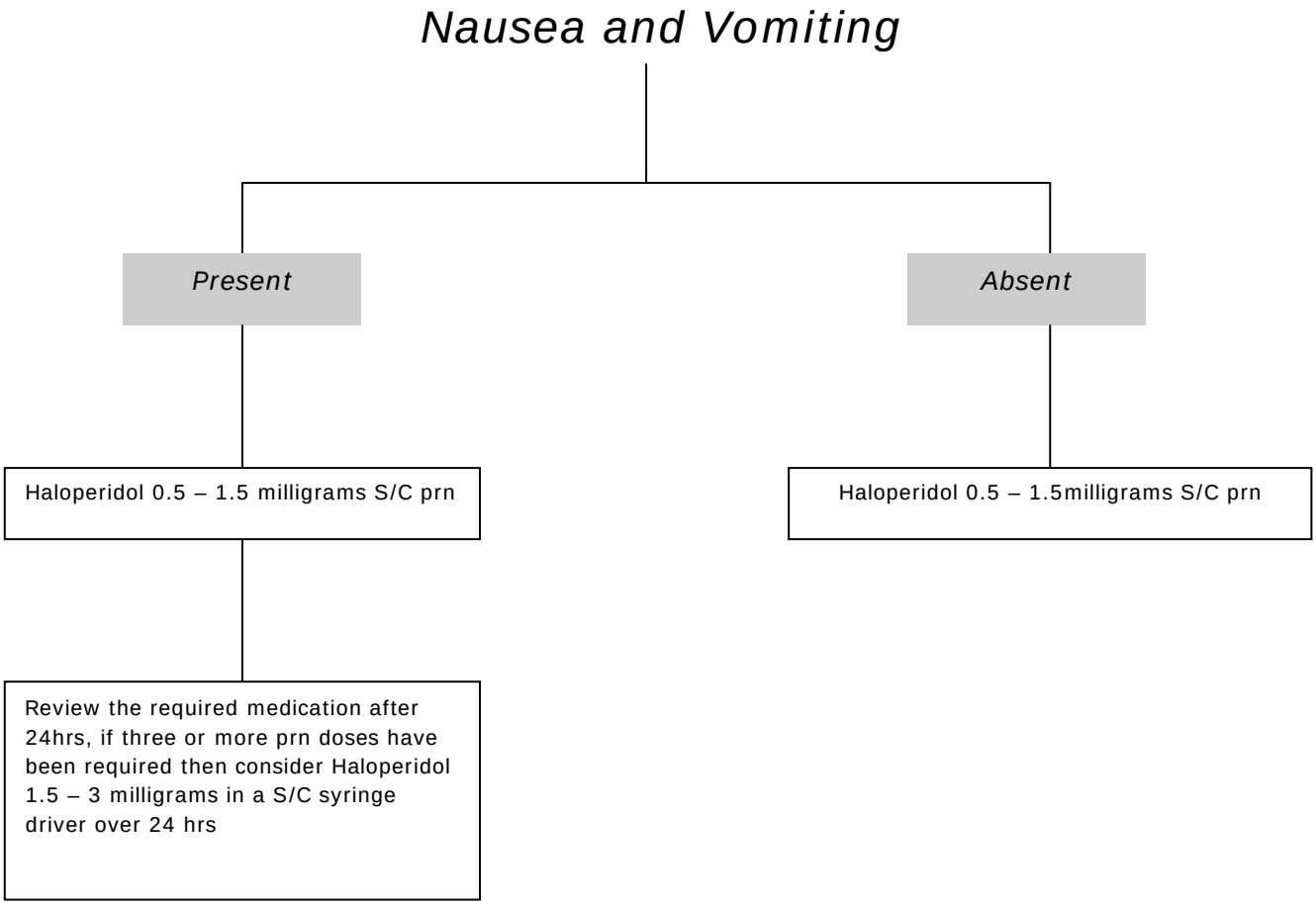
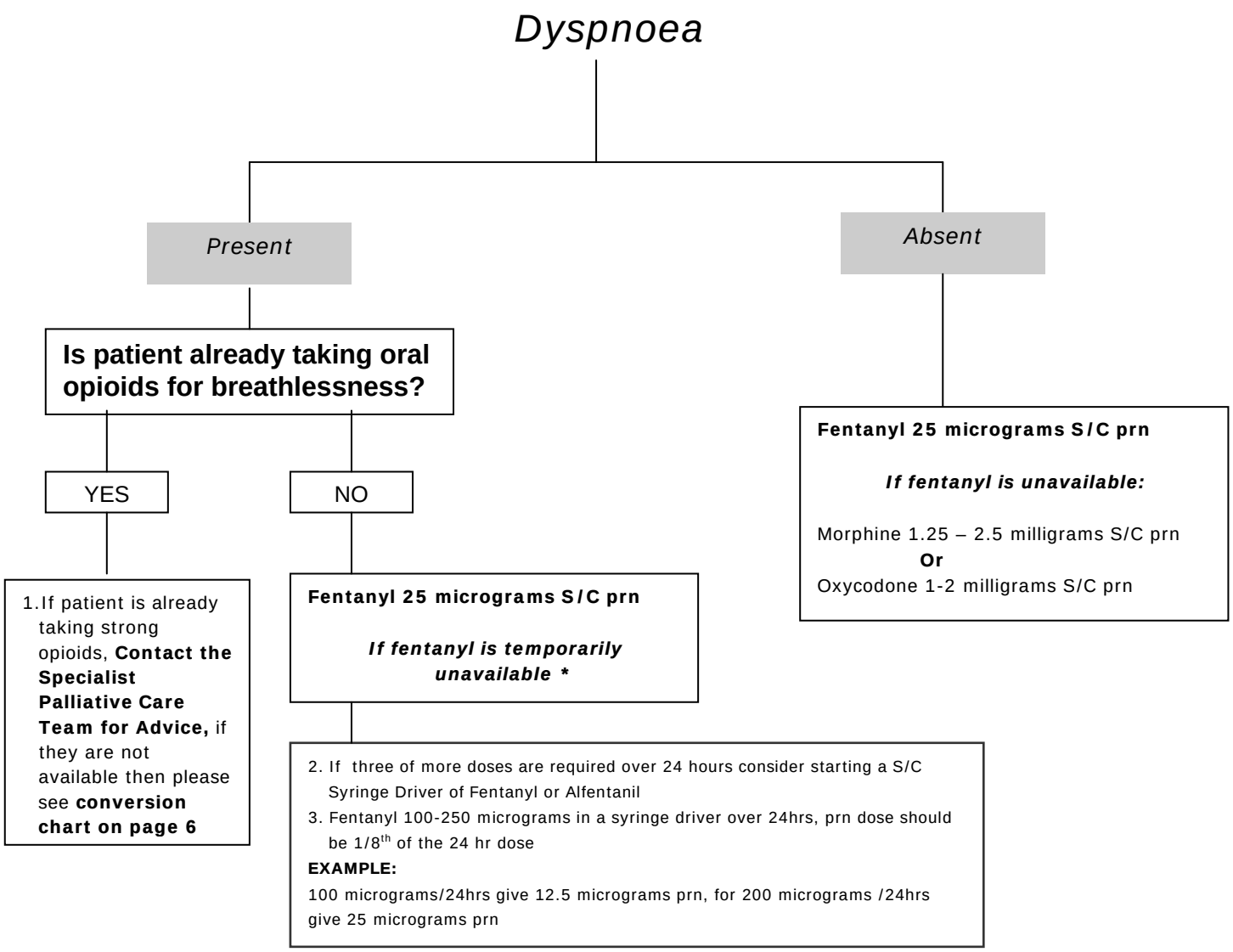
Hyoscine Hydrobromide is not usually recommended



SUPPORTIVE INFORMATION;

- **If symptoms persist contact the Specialist Palliative Care Team**
- Levomepromazine 6.25 milligrams S/C prn – *suitable alternative second line* (if a Syringe Driver is required then consider 6.25 milligrams S/C in a Syringe Driver over 24 hours)
- Anticipatory prescribing in this manner will ensure that in the last hours / days of life there is no delay responding to a symptom if it occurs.
- ***The LCP National Renal Steering Group produced these guidelines according to best practice and evidence base***

Cyclizine is not usually recommended



SUPPORTIVE INFORMATION:

- **If symptoms persist contact the Specialist Palliative Care Team**
- To convert from other strong opioids contact Specialist Palliative Care Team / Pharmacy for further advice & support
- If the patient is breathless and anxious consider Midazolam 2.5 milligrams S/C prn
- ***** If Fentanyl is temporarily unavailable give:

  Oxycodone 1-2 milligrams S/C prn
  or
  Morphine 1.25 – 2.5 milligrams S/C PRN

- Many of the opioid analgesics and their metabolites may accumulate in Renal Failure causing toxicity with myoclonic jerks, profound narcosis and respiratory depression. Morphine and its metabolites are most likely to cause toxicity. Fentanyl and Alfentanil are less likely to cause these problems, as the metabolites are not active. The duration of effect from Morphine and Oxycodone may last longer than in a patient with normal renal function. (See conversion table on Page 6)

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PROJECT GROUP

These guidelines have been produced by the National Liverpool Care Pathway for the Dying Patient (LCP) Renal Steering Group building on recent work undertaken by the Merseyside & Cheshire Palliative Care Network Audit Group.

This work has been led by:

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Supported by:

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- ***National Liverpool Care Pathway for the Dying Patient (LCP) Renal Steering Group***

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The Renal Association	**www.renal.org**
British Renal Society	**www.britishrenal.org**
End of Life Care Programme	**www.endoflifecare.nhs.uk**

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