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Lincolnshire Guidelines: Symptom Management in Adult Palliative and End of Life Care

Approved By:	**St Barnabas;** **United Lincolnshire Hospitals NHS Trust** **Lincolnshire Community Health Services NHS Trust** **Marie Curie**
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Document Control

Version History Log

This table should detail the version history for this document. It should detail the key changes when a version is amended.

Version	Date Implemented	Details of key changes
1.		New Lincolnshire wide symptom management guidance created by combining CD1 form, Lincolnshire wide symptom control guidelines and guidelines for prescribing in patients with advanced chronic kidney disease in the last days of life. Additional guidance added for management of diabetes at end of life. Opioid prescribing advice and conversion table added. Amendments to layout of CD1 form and update to clinical prescribing guidelines following review of national guidance. Amendments from DTC and PACEF included.
2.		
3.		

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Symptom Management in Palliative and End of Life Care.

1. When to use.

Relieving pain and other symptoms is important in the provision of any health care. These symptom management guidelines are appropriate to use when:

a. A patient is deteriorating from an incurable illness and the goal of treatment is prompt symptom control.

AND

b. Losing the ability to take or absorb oral medications is foreseeable.
- Drowsiness or weakness e.g. dying patients
- Vomiting e.g. bowel obstruction.

The majority of these patients will be entering the last days of their lives. They should have an individualised plan of care for achieving comfort and support. The multi-disciplinary team should use these guidelines alongside 'The Five Priorities for Care of the Dying Person' assessments and the individual care plans.

1.1. Other Situations.

SC medications and syringe drivers are occasionally required for symptom management in palliative patients who are not in the dying phase.

e.g. uncontrolled nausea and vomiting.

For some patients in hospital there may be uncertainty about whether a patient will recover from an acute illness. It is appropriate to consider symptom management alongside active treatment in this situation.

In these situations, please note the following cautions and consider expert advice:

Hyoscine butylbromide for chest secretions.

This can make secretions thicker and more difficult to expectorate. It is normally only appropriate when the underlying cause can no longer be treated AND the patient no longer has an effective cough.

Continuous infusion of midazolam for epilepsy.

This can cause drowsiness. It is usually inappropriate if investigation or active treatment of underlying causes is still appropriate.

Morphine and midazolam for breathlessness.

Morphine IS helpful and safe for relieving chronic breathlessness and midazolam can be useful for associated anxiety. Use both with caution in acute breathlessness where active treatment is ongoing.

2. Reviewing Regular Medication.

The patient may have an altered level of consciousness or significantly reduced oral intake and therefore struggle to swallow medication. Review current medication and discontinue any medication that is no longer of benefit to the patient. For example:

Anti-Hypertensives	Corticosteroids	Hypoglycaemics*
Antibiotics**	Diuretics**	Iron / Vitamin preparations
Anti-arrhythmics	Haematinics	Statins
Anti-coagulants	Hormone therapy	Steroids (long term)***
* Please refer to Section 11 for management of diabetes in advanced terminal disease and consider seeking advice from the Diabetic Team. **It may be appropriate to continue these medications with daily review if there is a possibility the patient may recover. *** Dexamethasone can be given sub-cutaneously. It may be appropriate to continue steroids via this route if there is a risk of symptoms recurring (e.g. headaches, seizures or vomiting) on stopping steroids. This will normally take several days to develop.		

Some medications NEED to continue. Make plans for alternative routes of administration in case the oral route is lost. In hospital a decision needs to be made for each patient about continuing IV administration or switching to the SC route.

Analgesia.	Switch to a syringe driver.
Anti-emetics.	A syringe driver may provide better symptom management and increased comfort than regular SC doses.
Anti-convulsants.	SC midazolam can be used – this is sedating and may not be appropriate prior to the dying phase.

Please see Appendix A for further advice.

3. Anticipatory Medication.

People's first priority at the end of life is to be free from pain and discomfort[1]. The most common symptoms during the last days of life are:

- Pain
- Nausea
- Agitation / restlessness
- Noisy breathing (death rattle)
- Breathlessness

Prescribing anticipatory medication just in case these symptoms occur is accepted practice within the UK.

An individualised approach to each patient is needed.

- Type of medicine and potential benefits and side effects.
- Route.
- Location – consider time to respond to a symptom developing (including prescribing, obtaining and administrating a medicine).
    - e.g. in hospital, this can be done much more quickly than at home.

A good starting point for patients that have not had any recent persistent symptoms:

Medication	Doses	Frequency	Route	Indication	Amount (if at home)
Morphine	2.5-5mg	2hrly	SC	Pain or SOB	10 ampoules of 10mg/ml
Midazolam	2.5-5mg	2hrly	SC	Anxiety or SOB	10 ampoules of 10mg/2ml
Levomepromazine	3.125-12.5mg	2hrly	SC	N+V or agitation	10 ampoules of 25mg/1ml
Hyoscine Butylbromide	10-20mg	2hrly	SC	Respiratory secretions	10 ampoules of 20mg/1ml
Water for injection	Use as directed		SC	Needed for patients in the community.	10 ampoules of 20ml

This then needs to be individualised to the patient's needs and wishes. Please see Appendix B for a table of medications commonly used for symptom management in palliative care.

It is vital that the lowest effective dose is used. The dose can be titrated as required.
When a dose range is prescribed for PRN medication, it is acceptable to repeat a lower dose within the minimal interval providing the maximum dose is not exceeded within that time range.

1. [1] Wood C and Salter J. *A time and a place: What people want at the end of life*. London: Sue Ryder, 2013.

4. Reviewing and titrating medication.

Health care professionals should:

- Assess a dying person's comfort daily.
- Review medication needs and possible side effects at least daily.

Please see diagram 1.

If 2 or more doses of an as required medication have been given in the last 24 hours, consider starting a syringe driver to provide a continuous SC infusion. The exception is hyoscine butylbromide for respiratory secretions – consider a syringe driver if the initial PRN dose has been helpful.

For patients on regular medication who have had 2 or more PRN doses in the last 24 hours, consider titrating the doses of the appropriate medication up in line with this.

Please see Appendix 2 for specific drug information.

5. Specialist Palliative Care Advice.

Specialist palliative care advice is available across Lincolnshire from:

- Macmillan Palliative Care Clinical Nurse Specialists (ULHT or LCHS).
    - Monday to Friday.
- St Barnabas Hospice In-Patient Unit, Lincoln.
    - 24 hour advice line (01522 511566).
- Thorpe Hall Hospice, Peterborough.
    - 24 hour advice line (01733 225900).

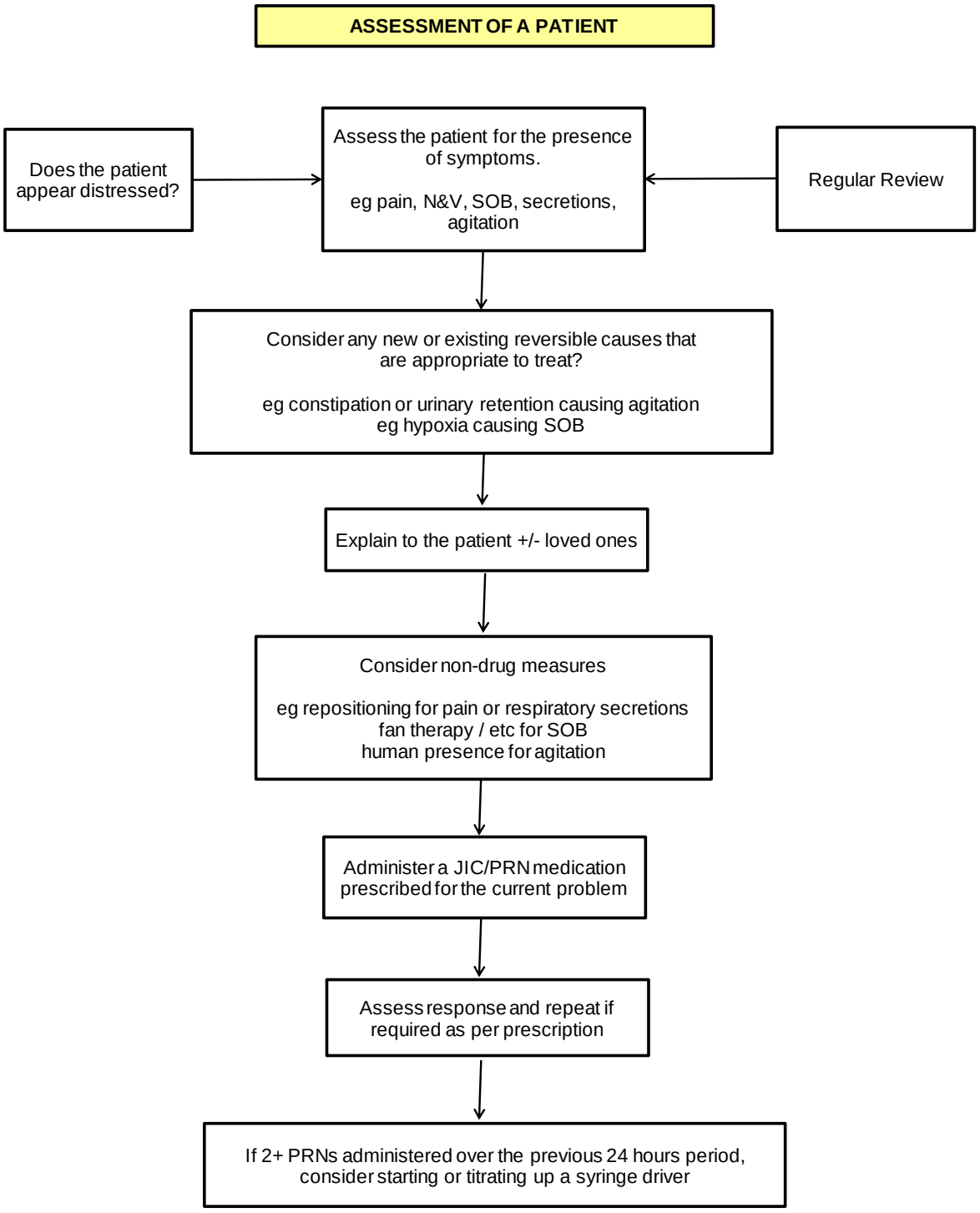
It is important for health care professionals to know how to contact an appropriate source of specialist advice – either a specialist team that knows the patient or the local arrangements for the organisation. If in doubt, please contact one of the above teams who will be able to signpost you to the most appropriate team.

Seek specialist advice if:

- A patient does not respond to the prescribed medication
    - This includes reaching usual maximum doses of a drug over a 24 hour period.
    - Repeated increases in regular doses without significant improvement in the symptoms

- A patient needs multiple PRN doses within a 24 hour period.
- Concerns about possible side effects.
- Any concerns that a patient is continuing to experience distress despite appropriate interventions.
- Support is required regarding how best to support a dying patient and their loved ones.

Diagram 1



Seek prescriber advice if medication doeses are not effective.

Seek specialist advice if changes are not effective/there is any concern re symptom management.

6. Management of Specific Symptoms.

6.1. Pain

Existing symptom management in place.

- People who are already on regular oral analgesia need a plan for an alternative administration route if they lose the ability to swallow.
- A continuous SC infusion via a syringe driver is usually used. It is NOT appropriate to start a transdermal patch at this time.
- To determine the likely dose:
    - E.g. PO morphine to SC morphine – divide total daily dose by 2
    - E.g. PO morphine to SC diamorphine – divide total daily dose by 3
    - E.g. PO oxycodone to SC oxycodone – divide total daily dose by 2
    - E.g. PO morphine to SC alfentanil – divide total daily dose by 30
- Please see diagram 2 for patients on a fentanyl patch. For patients on a buprenorphine patch (BuTrans or Transtec) seek specialist advice.
- Please see appendix C for an opioid conversion table or use opioid conversion calculator at book.pallcare.info.

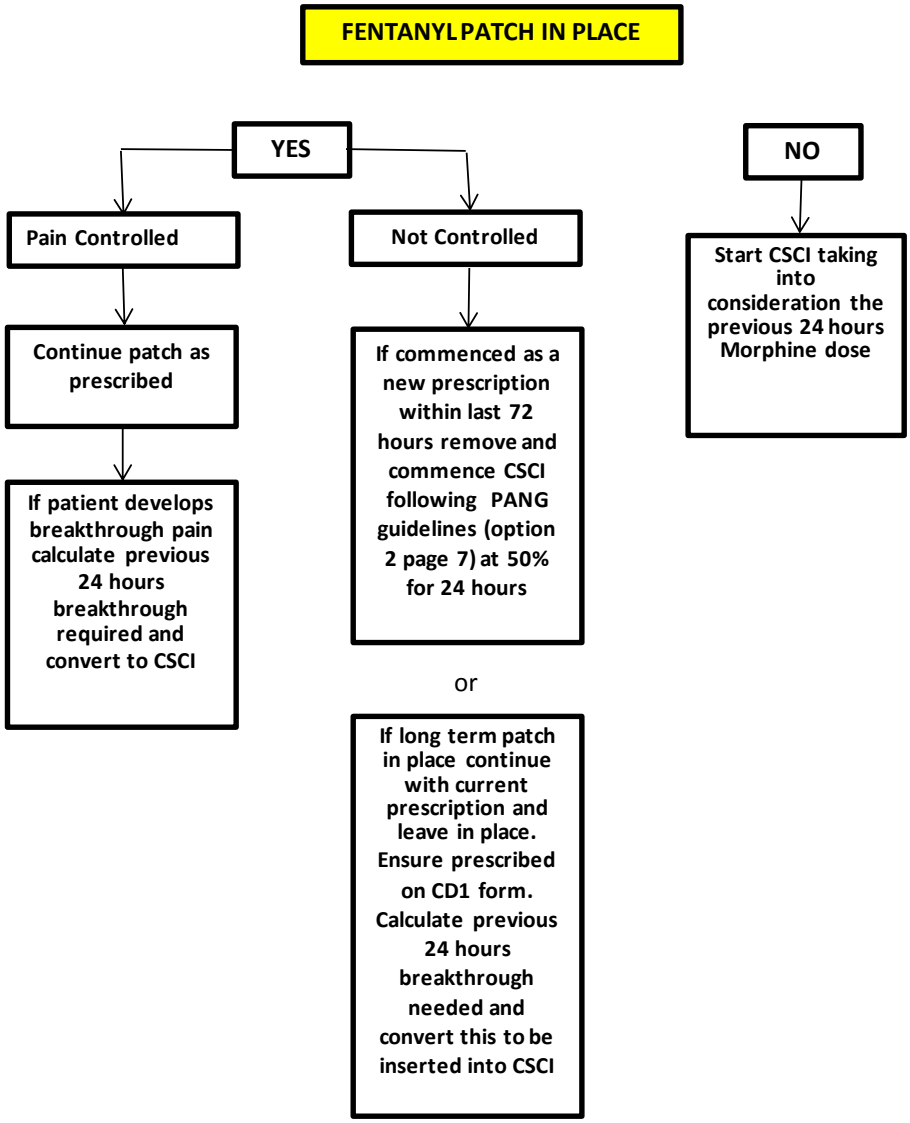
Anticipatory or PRN prescribing.

- Remember people may still be able to manage PO medication.
- People who are not on regular opioid medication should have an opioid prescribed:
    - Morphine 2.5-5mg SC 2 hourly.
- People who are already on regular opioid medication need the appropriate PRN dose calculated:
    - Divide total daily syringe driver dose by 6.
- If 2 or more doses are given in a 24 hour period, consider starting a syringe driver with the total dose from the previous 24 hours.

Individualising care.

- People can be frightened by morphine/opioids. Discuss and address concerns.
- Use appropriate opioid and dose according to a person's previous needs.
- For patients with an eGFR <30, consider using alfentanil or reducing dose and frequency of morphine/oxycodone.
    - Alfentanil is short acting when used as a PRN. If it is ineffective for managing breakthrough pain, consider an equivalent dose of SC morphine or SC oxycodone.
- Starting opioid doses can be reduced in cachectic, frail or elderly people eg. morphine 1-2.5mg
- PO/PR paracetamol may be appropriate to consider for the right patient in the right environment.

Diagram 2



NB: When using Fentanyl and CSCI. Ensure breakthrough dose incorporates both in calculation: 25 microgram patch and Diamorphine 30 mg in CSCI = 10mg Diamorphine PRN.

NB: IF BUTRANS/TRANSEC PATCH IN PLACE - SEEK SPECIALIST ADVICE

YOU STILL NEED TO EXERCISE YOUR OWN CLINICAL JUDGEMENT WITH EACH PATIENT AND DISCUSS DECISIONS WITH THE PATIENT WHERE POSSIBLE AND/OR THOSE IDENTIFIED BY THE PATIENT TO BE INVOLVED WITH DECISIONS (eg: LASTING POWER OF ATTORNEY: HEALTH AND WELFARE)

6.2 Nausea and vomiting.

Existing symptom management in place.

- If regular anti-emetics are effective, continue them as a syringe driver where possible. Conversion ratio is 1:1.
    - e.g. metoclopramide 10mg tds PO or IV (=30mg/24hrs) = 30mg/24hr SC
    - cyclizine 50mg tds PO/IV = 150mg/24hrs SC

Anticipatory or PRN prescribing.

- If a particular cause of N+V can be anticipated, consider prescribing an appropriate anti-emetic:
    - Metoclopramide for bowel obstruction/delayed gastric emptying.
    - Cyclizine for brain tumours.
- Otherwise prescribe a broad spectrum anti-emetic:
    - e.g. Levomepromazine 3.125-12.5mg SC 2 hourly PRN.
- If 2 or more doses are given in a 24 hour period, consider starting a syringe driver containing the effective anti-emetic.

Individualising care.

- Try to match the anti-emetic to the possible cause.
- Levomepromazine can cause drowsiness, if this occurs or a patient is concerned:
    - A smaller starting dose can be tried e.g. 3.125mg SC PRN.
- If the prescribed anti-emetic is not effective, consider an alternative drug or obtaining specialist advice.
- Haloperidol may be an appropriate alternative.
- Haloperidol and metoclopramide should be avoided in people with Parkinson's disease. Levomepromazine can exacerbate symptoms in Parkinson's disease so monitor use.

NB. MHRA guidance (August 2013) regarding the restricting the use and dose of metoclopramide does not apply to its use in palliative care.

6.3 Agitation.

Existing symptom management in place.

- This usually develops during the dying phase. If a person has already required benzodiazepines for anxiety or anti-psychotics for an agitated delirium then consider starting a syringe driver with midazolam and/or levomepromazine or haloperidol once they are unable to manage this orally.

Anticipatory or PRN prescribing.

- It is useful to have both midazolam and levomepromazine prescribed.
- Midazolam is helpful for anxiety/fear and emotional distress:
    - 2.5-5mg SC 2 hourly PRN.
- Consider levomepromazine if there is an associated delirium:
    - 3.125-12.5mg SC 2 hourly PRN.
- If 2 or more doses are given in a 24 hour period, consider starting a syringe driver containing the effective medication with the total dose from the previous 24 hours.

Individualising care.

- Both midazolam and levomepromazine are sedating – this needs to be discussed with the patient/family before commencing.
- Consider reversible causes and non-drug measures
    - e.g. urinary retention or constipation.
- Explanations can reduce fear.
- Consider environmental changes as per managing delirium in any clinical situation.
- Consider a person's religious or spiritual needs. Support from a chaplain or person's own faith leader should be offered.

6.4 Respiratory Secretions.

Existing symptom management in place.

- Medication reduces the volume of chest secretions but sometimes makes them more tenacious.
- Use when underlying causes are no longer being treated and once the patient is too weak to cough.
- Benefit is limited but most patients are not distressed by this symptom. Explanation of this to patients and families is a vital part of treatment.

Anticipatory or PRN prescribing.

- Hyoscine butylbromide is the usual drug of choice. It does not cause agitation and can be used at the same dose in renal failure:
    - Hyoscine butylbromide SC 20mg.
- Alternative:
    - Glycopyrronium SC 200microgram (specialist use only).
- These anti-muscarinic drugs are better at preventing secretions from developing rather than treating existing secretions. It is appropriate to consider starting a syringe driver containing the effective drug if a single PRN dose has been effective.

Individualising care.

- Consider whether treatment aimed at aiding expectoration would be more appropriate: e.g. chest physiotherapy; saline nebulisers; PO carbocisteine.
- Explanation to patient and/or family – this is very important as this symptom does not always respond to medication.
- Non-drug measures e.g. repositioning.
- This will worsen a dry mouth. Prioritise mouth care.

Occasionally treatment of an underlying cause such as infection or heart failure is appropriate. Consider specialist discussion.

MHRA/CHM advice (February 2017) regarding the risk of serious adverse events with hyoscine injection in patients with underlying cardiac disease. This is unlikely to be an issue in patients who are recognised to be already dying who require symptom control. Specialist palliative care advice can be requested in the case of patients with significant recent cardiac problems.

6.5 Breathlessness.

Existing symptom management in place.

- Some patients may be on regular opioids – convert to syringe driver as per pain guidance.
- Patients already on oxygen – oxygen therapy may be helpful but the burden of treatment may outweigh the benefit. It is appropriate to discuss this on an individual basis.

Anticipatory or PRN prescribing.

- PRN opioid and PRN midazolam are recommended. Midazolam is most effective when there is anxiety associated with breathlessness:
    - Morphine 2.5-5mg 2 hourly PRN.
    - Midazolam 2.5-5mg 2 hourly PRN (usually given second line).
- For management of acute SOB following with withdrawal of respiratory support, seek specialist advice or follow local guidance.
- If 2 or more doses are given in a 24 hour period, consider starting a syringe driver with the total dose from the previous 24 hours.

Individualising care.

- Non-drug measures can be very useful.
    - Explanation and reassurance.
    - Repositioning.
    - Fan therapy.
- Oxygen therapy may be helpful for hypoxic patients but the burden of treatment may outweigh the benefit. It may not be appropriate for a patient who wishes to minimise medical devices or interventions at this time.

7. Renal Failure.

Renal impairment is an important consideration when prescribing drugs, in particular opioids, as metabolites can accumulate in renal impairment and may lead to significant toxicity. Prescribing needs to be individualised to the patient.

In general, most medications are not excreted well in Advanced Chronic Kidney Disease (ACKD). Once administered, a drug may have a longer duration of effect than expected. It is important to choose medications that are less likely to accumulate and cause adverse effects.

- Using smaller doses and increasing dosing intervals can help to reduce drug toxicity. Increasing time between doses may be required with regular medication as well as PRNs.
- It is very important to titrate the medication carefully and frequently review the patient as considerable variation between patients can exist.

With regard to the 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 symptom toxicity.

<u>Indications for use</u>

Individualising PRN and syringe driver prescribing to take into account impaired renal function should be taken into account if a patient has:

- Chronic kidney disease stage 4 or 5 (ie estimated glomerular filtration rate (eGFR) of less than 30ml/min/1.73m^2) in which active treatment (including dialysis) is considered inappropriate or has been discontinued.

- Acute kidney injury with rapidly deteriorating renal function from any cause in which active treatment (including dialysis) is considered inappropriate or has been discontinued.

Pain	Consider using alfentanil or reducing dose and frequency of morphine/oxycodone. PRN alfentanil has a shorter duration and may be ineffective in severe prolonged pain. If this occurs, reassess the patient and consider a trial of small doses of PRN morphine or oxycodone.
Breathlessness	Consider reducing the dose and frequency midazolam. PRN alfentanil has a shorter duration and may be ineffective in severe breathlessness. If this occurs, reassess the patient and consider a trial of small doses of PRN morphine or oxycodone.
Agitation	Increased and prolonged sedation can be caused by both midazolam and levomepromazine. Consider reducing the dose and frequency. Haloperidol may be used as an alternative.
N+V	Levomepromazine can still be used but may cause increased sedation. Haloperidol is an effective anti-emetic if renal failure is the cause of the symptoms.
Respiratory secretions	Hyoscine Butylbromide is safe in patients with renal failure.

8. Diabetic management.

Diabetes can often co-exist with other diagnoses in a patient who is deteriorating and approaching the end of their life. Particular considerations include:

- Fine control of blood sugar is no longer appropriate as the end of life approaches and may be very difficult, especially in the presence of liver disease, poor appetite and weight loss. It can also cause an added burden to the patient and their family.
- It is important to avoid persistent symptomatic hyperglycaemia and equally to avoid hypoglycaemia.
- It can be difficult to identify symptoms due to hypoglycaemia or hyperglycaemia in a dying patient.

Goals of Treatment

- Maintain blood glucose usually between 6 and 15 mmols to prevent hypoglycaemia and symptomatic hyperglycaemia.
- Keep tests to a minimum.
- Avoid complex insulin regimes.

Diabetic Management

The distinction between the two types of diabetes is important at the end of life because it determines how diabetes is managed. Patients with Type 1 diabetes will require lifelong insulin, whereas with Type 2 diabetes it is likely that neither oral hypoglycaemic agents nor insulin treatment will be required as the end of life approaches and blood glucose levels fall, due to a combination of poor appetite and weight loss.

Discuss management changes with the patient where possible and with their family.

Type 1 Diabetes.

- Insulin is required to prevent ketosis even without oral intake.
- If the patient is conscious, give approximately half of their recent insulin requirement as a single daily dose of insulin Glargine.
- Discontinue rapid acting insulin if not eating.
- Monitor BM daily at 18.00. If the patient is unconscious, it has been agreed that there is no reversible cause and that they are in the last days of life - discontinue insulin and monitoring.
- Treating hypoglycaemia in a patient who is established to be in the last hours or days of life is not appropriate.

Type 2 Diabetes.

- Discontinue oral hypoglycaemic agents and consider if appropriate to stop insulin.
- Discontinue urinary capillary blood glucose (BM) monitoring but test if symptomatic.
- Urinary glucose monitoring is no longer advised routinely.

Please see appendix D, E and F for further guidance (taken from St Barnabas Lincolnshire Hospice diabetes guidelines 2014) or contact your local Diabetic Team.

9. References.

This guideline has been adapted from:

- Palliative Care Formulary accessed through www.palliativedrugs.com.
- Palliative Adult Network Guidelines 2016 accessed through book.pallcare.info
- Scottish Palliative Care Guidelines 2016 accessed through http://www.palliativecareguidelines.scot.nhs.uk/ .
- Management of diabetes at the end of life – guidelines by Dr O'Kelly, St Barnabas Lincolnshire Hospice. (These guidelines are based on End of Life Diabetes Care:Clinical Care Recommendations 2nd edition. October 2013. https://diabetes-resources-production.s3-eu-west-1.amazonaws.com/diabetes-storage/migration/pdf/End-of-life-care-Clinical-recs111113.pdf).

10. Other resources that may be useful.

- NICE guideline (NG31): Care of dying adults in the last days of life.
    - Includes guidance on identification, communication, shared decision making and maintaining hydration.

11. Appendices.

Appendix A: 10 tips for prescribing at end of life. Dr R Cullum and Dr J Walker, ULHT.

Appendix B: Medication table from Lincolnshire CD1 form: Direction to Administer Drugs for Symptom management.

Appendix C: Controlled Drug Prescribing & Guide to Equivalent Doses for Opioid Drugs. Updated Dr K Collett – January 2018. Original author: Sarah Rice – Medicine Optimisation and Safety Lead – Pharmacy – October 2015

Appendix D: End of life diabetes management – treating hypoglycaemia. (From Management of diabetes at the end of life – guidelines by Dr O'Kelly, St Barnabas Lincolnshire Hospice.)

Appendix E: End of life diabetes management – prognosis of weeks . (From Management of diabetes at the end of life – guidelines by Dr O'Kelly, St Barnabas Lincolnshire Hospice.)

Appendix F: End of life diabetes management – managing glucose control on once daily steroids. (From Management of diabetes at the end of life – guidelines by Dr O'Kelly, St Barnabas Lincolnshire Hospice.)

Appendix G: Use of Alfentanil in Renal Failure in Palliative Care.

Appendix H: List of Abbreviations

Appendix A.

CARING FOR YOU

United Lincolnshire Hospitals NHS
NHS Trust

10 Tips for Prescribing at the End of Life

Every patient is different

What works for one might not work for another

Discussion

Make medications part of your discussion with the patient and their family, so that everyone understands the decisions that are made.

Necessity

Consider what medications are needed. Those intended for long term risk reduction (e.g. statins) are unlikely to be of benefit any longer. Those that may give symptomatic relief (e.g. regular pain relief, laxatives, PPIs, anti-anginals) may still be appropriate if patient is able to take them.

Route

Is your patient able to swallow? If they are able and happy to take medications orally, those that they may still benefit from can be continued. If not, SC is usually the most appropriate. Avoid IV or IM medication where possible.

Dose

Patients who are opiate naïve or with renal impairment will need lower doses than those who have already been taking opiates. Think about frailty in older patients.

Anticipatories

Remember to prescribe prn anticipatory medications for pain, agitation, nausea and secretions. Just because a patient isn't having these symptoms now doesn't mean they won't in the future! Check historic renal function and use renal prescribing guidelines if eGFR <30.

Review and plan

Regular review of medications and routes. Things may need to be stopped or route changed if patient becomes too drowsy to take tablets. Make sure there is a clear plan from parent team for medications if patient is likely to deteriorate out of hours.

Syringe driver

If a patient is requiring 2 or more anticipatory meds throughout the day, consider whether a syringe driver may be more appropriate.

Mouth care

Remember that oral balance gel is something that needs prescribing and can give a lot of symptomatic relief.

Documentation

Make sure documentation of discussions with patients and relatives, decisions and future plans are clear in the notes. Useful for those caring for patients out of hours

Discharge

When discharging patients don't forget to fill in the yellow discharge paperwork (CD1 form) for anticipatory medications

For more information see the End of Life Care Guidelines via the Junior Doctors Portal on the intranet. For urgent advice contact the specialist palliative care team via bleep 3010 in hours or St Barnabas OOH via Switch.

Appendix B.

PRESCRIBING GUIDELINES

The information within these guidelines is referenced to and should be used in conjunction with Palliative Care Formulary 5, Palliative Adult Network Guidelines 2016, Scottish Palliative Care Guidelines 2016 and the current British National Formulary.

Prescribing responsibility remains with the prescriber.

Maximum doses may be extended and some maximum doses only to be used **following discussion** with a Specialist Palliative Care Clinician. Be aware of drug accumulation in **renal failure** and seek guidance below for alternative analgesia.

Please note that only Morphine, Diamorphine, Oxycodone and Levomepromazine are licensed for subcutaneous use. It is accepted practice in palliative care to administer other appropriate drugs via the subcutaneous route.

It is recommended that **no more than 3 drugs** are combined in one syringe unless advised by Specialist Palliative Care Team. Drug compatibility information can be found in the PCF5 and **book.pallcare.info** and **www.palliativedrugs.com**

Match oral / SC / Syringe driver medication i.e. oxycodone prn - oxycodone in syringe driver. PRN doses may vary according to the need of the individual patient. PRN doses will need titration in line with regular analgesia dose adjustments			
SYMPTOM / MEDICATION	**PRN**	**SYRINGE DRIVER**	**MAX DOSES**
PAIN / BREATHLESSNES			
Morphine	2.5mg - 5 mg 2 hourly OR 1/6th of daily syringe driver dose, 2 hourly	If opioid naïve usual starting dose 5mg. Calculate previous 24 hours total oral morphine dose and divide by **2**.	Increase should not be more than by a maximum of 50%
Diamorphine *Useful if large doses of morphine required (p.r.n. or syringe driver)*	2.5mg - 5mg 2 hourly OR 1/6th of daily syringe driver dose, 2 hourly	Calculate previous 24 hours total oral morphine dose and divide by **3.** ***(More potent than morphine)***	
Oxycodone	2.5mg - 5 mg 2 hourly OR 1/6th of daily syringe driver dose, 2 hourly	Calculate previous 24 hours oral oxycodone and divide by **2**. *NB not compatible with Cyclizine.*	
Alfentanil *(If EGFR <30, if available, otherwise use oxycodone with caution - reduce dose and frequency)*	125micrograms hourly OR 1/6th of daily syringe driver dose, hourly	If opioid naïve usual starting dose 500micrograms. Calculate equivalent SC dose of Diamorphine and divide by **10**.	
ANTI-SPASMODIC / OBSTRUCTION (IF OBSTRUCTION PLEASE SEEK SPECIALIST ADVICE)			
Hyoscine Butylbromide	20mg 2 hourly prn	60mg	120mg
NAUSEA & VOMITING			
Levomepromazine *Dilute with water for injection. However if the site reacts, try 0.9% sodium chloride.*	3.125mg - 12.5mg 2 hourly prn	6.25mg - 25mg	50mg
Haloperidol	500 micrograms - 3 mg 2 hourly prn	1.5mg	10mg
Metoclopramide	10mg 2 hourly prn	30mg - 60mg	100 mg
Cyclizine *Needs to be well diluted to prevent crystallisation and/or skin irritation. Should **never** be diluted in 0.9% sodium chloride*	50mg 8 hourly prn	100 - 150mg	150mg
CONFUSION / AGITATION / DELIRIUM			
Midazolam *Can also be used 2nd line for breathlessness*	2.5mg - 5mg 2 hourly prn	5mg - 30mg	60mg (100mg*) **** Under specialist advice only***
Levomepromazine *Use first for delirium.*	3.125mg - 12.5mg 2 hourly prn	6.25mg - 50mg *Consider sedating effect if used in higher doses*	150mg (250mg*) **** Under specialist advice only***
RESPITATORY SECRETIONS			
Hyoscine Butylbromide *If prn effective consider commencing syringe driver*	10mg - 20mg 2 hourly prn	40mg -100mg	120mg
EPILEPSY / SEIZURES			
Midazolam	5 - 10mg 2 hourly prn	20 mg when unable to swallow anti-epileptic medication or no IV access (seek specialist advice)	

TERMINAL CRISIS EVENT **Eg significant distressing**	***If any potential for terminal crisis event seek specialist advice***

If symptoms do not respond please seek early advice. Contact a Macmillan Specialist Palliative Care Nurse OR St Barnabas Hospice 01522 511566 OR Thorpe Hall Hospice on: 01733 225900

Appendix C.

United Lincolnshire Hospitals NHS Trust

Pharmacy

Controlled Drug Prescribing & Guide to Equivalent Doses for Opioid Drugs

All healthcare professionals prescribing, dispensing or administering opioid medicines must ensure they take the necessary steps to prevent patients receiving unsafe doses.
This includes:

- Confirming any recent opioid (dose, formulation, frequency of administration) and any other analgesic medicines prescribed for the patient
- Ensure where a dose increase is intended, that the calculated dose is safe for the patient
- Check the usual starting dose, frequency of administration, standard dosing increments, symptoms of overdose and common side effects of that medicine and formulation

Prescribing Controlled Drugs

A pharmacist is not allowed to dispense a Controlled Drug unless all the information required by law is given on the prescription.
All of the following are required for the legal supply of Controlled Drugs on discharge from the hospital or for the supply to Outpatients.

- The original prescription must be presented to pharmacy. Faxed and photocopied prescriptions are deemed illegal.
- The prescription must be written in indelible ink. Only the signature needs to be handwritten by the prescriber. All other details, including the date can be computer generated.

In general prescriptions for Controlled Drugs should be limited to a supply of up to 30 days and a prescription for a Controlled Drug is valid for 28 days from the date stated.

Prescriptions for Controlled Drugs are subject to prescription requirements.
A prescription for controlled drugs must include:

- Patient's full name, address and NHS number
- Age of patient (if under 12)
- Name of drug
- Form of drug (even if only one form exists)
- Strength of preparation where applicable
- Dose to be taken
- Total quantity required in both words and figures
- For liquids the total volume in millilitres in both words and figures
- Prescriber signature
- Print name and date on prescription

This table is to be used as a guide rather than a set of definitive equivalences. **Please seek specialist palliative care advice before switching from one type of opioid medication to another.**

Transdermal buprenorphine		Transdermal fentanyl	Oral codeine	Oral morphine			Subcutaneous morphine		Subcutaneous diamorphine		Oral oxycodone			Subcutaneous oxycodone		Subcutaneous alfentanil		Subcutaneous fentanyl	
Transtec Patch (microgram/hr)	BuTrans Patch (microgram/hr)	Patch strength (microgram/hr)	24h Total dose (mg)	4hr dose (mg)	12hr MR dose (mg)	24hr Total dose (mg)	4hr dose (mg)	24hr Total dose (mg)	4hr dose (mg)	24hr Total dose (mg)	4hr dose (mg)	12hr MR dose (mg)	24hr Total dose (mg)	4hr dose (mg)	24hr Total dose (mg)	4hr dose (mg)	24hr Total dose (mg)	4hr dose (microgram)	24hr Total dose (microgram)
	5		<60			10													
	10		60-120			20													
	20	12	120	5	15	30	2.5	15	1.25	10	2.5	7.5	15	1.25	7.5	0.125	1	25	200
35		25		10	30	60	5	30	2.5-5	20	5	15	30	2.5	15	0.25	1.5	50	300
35		25		15	45	90	7.5	45	5	30	7.5	25	50	3.75	25	0.5	3	100	600
52.5		37		20	60	120	10	60	7.5	40	10	30	60	5	30	0.75	4	Syringe pump volume issues likely above 500micrograms/24hours	
70		50		30	90	180	15	90	10	60	15	45	90	7.5	45	1	6		
		75		40	120	240	20	120	12.5	80	20	60	120	10	60	1.25	8		
		75		50	150	300	25	150	15	100	25	75	150	12.5	75	1.5	10		
		100		60	180	360	30	180	20	120	30	90	180	15	90	2	12		
		125		70	210	420	35	210	25	140	35	105	210	17.5	100	2.5	14		
		125		80	240	480	40	240	27.5	160	40	120	240	20	120	2.5	16		
		150		90	270	540	45	270	30	180	45	135	270	22.5*	135	3	18		
		150		100	300	600	50	300	35	200	50	150	300	25*	150	3.5	20		
		175		110	330	660	55	330	37.5	220	55	165	330	27.5*	165	3.75	22		
		200		120	360	720	60	360	40	240	60	180	360	30*	180	4	24		

*This dose requires using 50mg/1ml injection as it would otherwise be too large a volume for a SC injection. **Caution with this strength.**

References:
National Reporting & Learning System (NRLS) Reducing Dosing Errors with Opioids, July 2008. Available online: http://www.nrls.npsa.nhs.uk/resources/?EntryId45=59888
A Guide to Equivalent Doses for Opioid Drugs – St. Christopher's Hospice 2010
BNF accessed via www.medicinescomplete.com on 27.12.17
PCF6 – accessed via palliativedrugs.com on 3.1.18
What are the equivalent doses of oral morphine to other oral opioids when used as analgesics in adult palliative care? Medicines Q&As (UKMI). September 2016. Available through NICE Evidence Search at www.evidence.nhs.uk

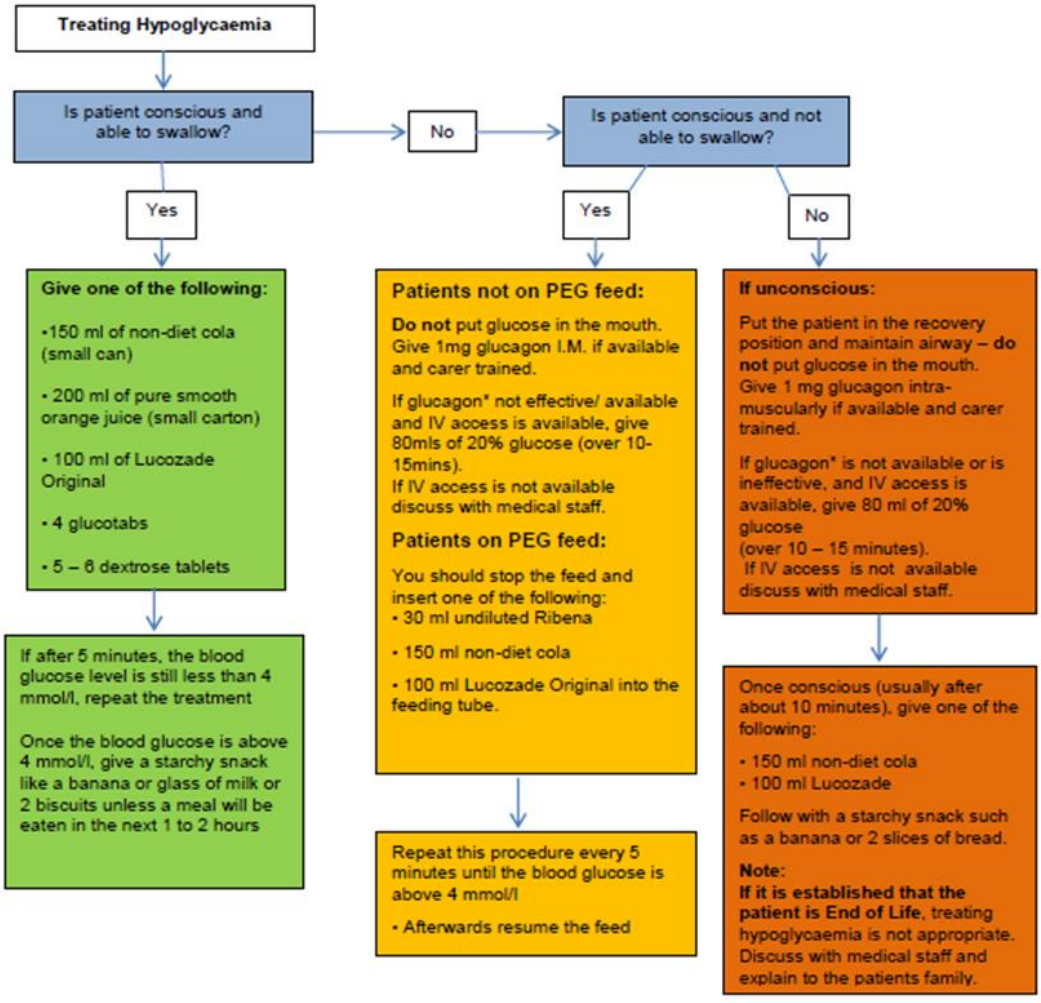
Updated Dr K Collett – Palliative medicine consultant (ULHT Specialist Palliative Care Team and St Barnabas Hospice) – January 2018. Original author: Sarah Rice – Medicine Optimisation and Safety Lead – Pharmacy – October 2015

Appendix D

St Barnabas Lincolnshire Hospice Trust

Appendix 1 – The algorithm for treating hypoglycaemia[1](adapted)

End of Life Diabetes Management – Treating Hypoglycaemia



*Note * glucagon may not be effective in people with liver disease /cachexia*

After an episode of hypoglycaemia:

Consider discounting insulin (unless Type 1 diabetes) or reducing insulin or oral hypoglycaemia agents

Review management plan with patient and relatives to clarify / confirm goals of diabetes management for their stage of life

Updates:

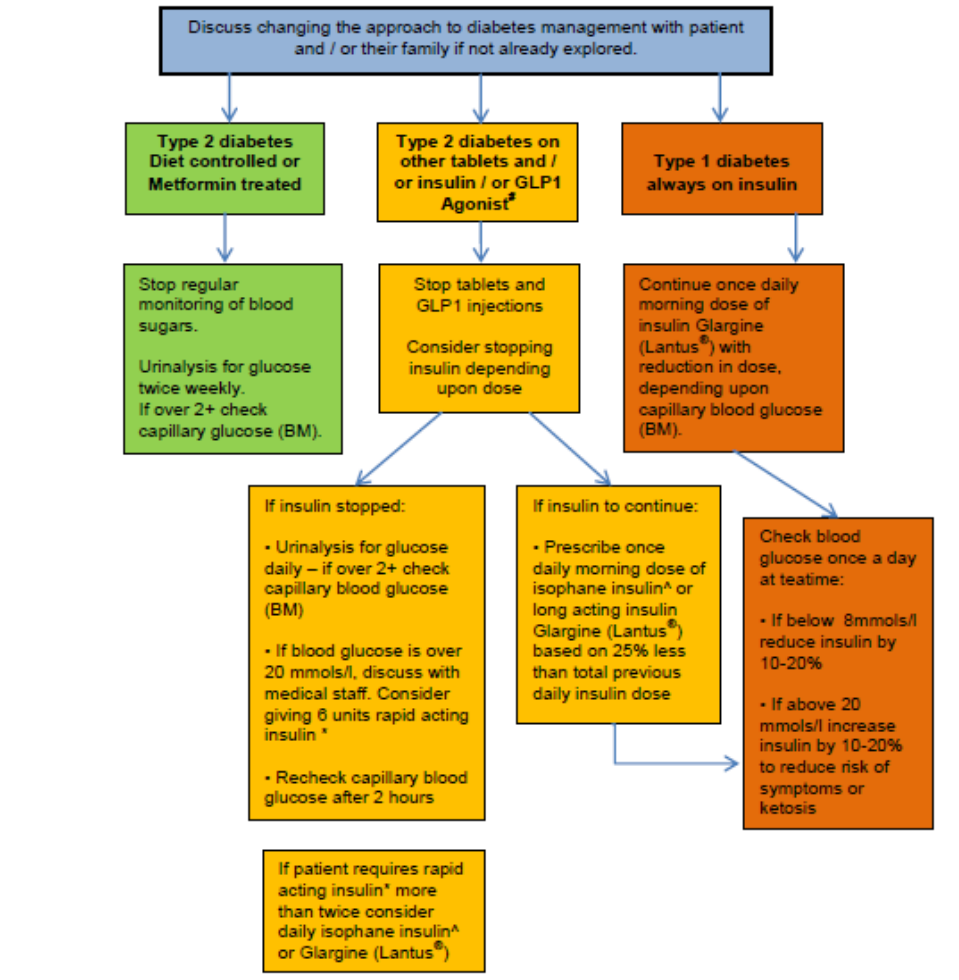
- Glucose content of lucozade has reduced so 110-170mls now recommended or use the alternatives.
- Consider using 200ml of 10% glucose instead of 20% glucose (ULHT guidance).

Appendix E.

St Barnabas Lincolnshire Hospice Trust

Appendix 2 – Algorithm for End of Life Diabetes Care Management Strategy[1] (adapted)

End of Life Diabetes Management – prognosis of weeks



Key

Byetta (Exenatide) / Victoza, (Liragludide), Lyxumia Lixisenatide)

* Humalog / Novorapid® / Apidra

^ Humulin 1 / Insulatard / Insuman Basal

- Keep tests to a minimum. It may be necessary to perform some tests to ensure unpleasant symptoms do not occur due to low or high blood glucose.
- It is difficult to identify symptoms due to "hypo" or hyperglycaemia in a dying patient.
- If symptoms are observed, it could be due to abnormal blood glucose levels.

Updates:

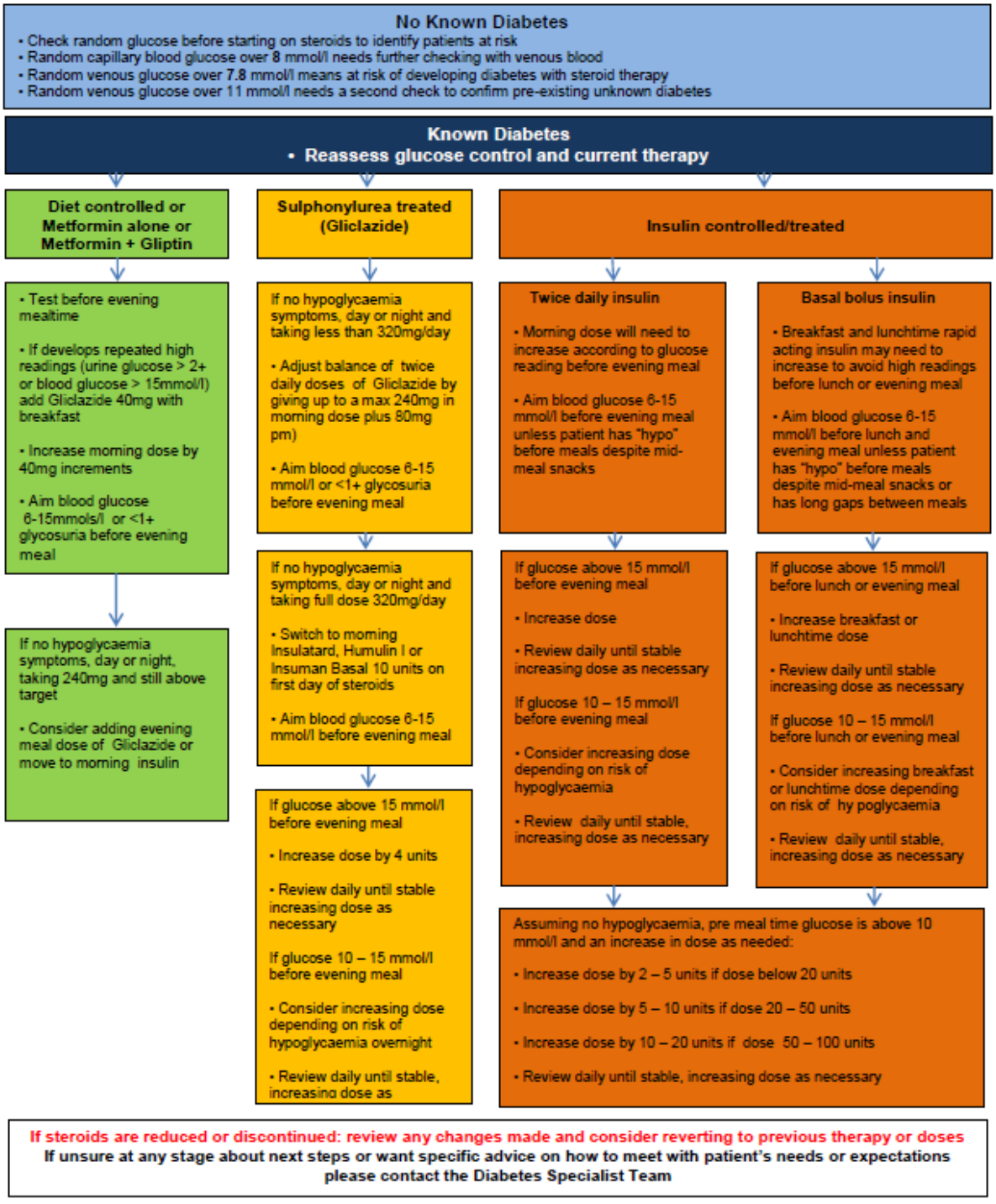
- Other long acting insulins are now available and can be used.
- Urinary glucose testing is now not routinely recommended. Instead test BM as required.
- It is usually appropriate to continue normal testing frequency if less than above but consider blue box advice.
- Consider referral to Diabetic team or a prescriber if BMs persistently high.

Appendix F

St Barnabas Lincolnshire Hospice Trust

Appendix 3 – Algorithm for Managing Glucose with Once Daily Steroids[1] (adapted)

End of Life Diabetes Management – Managing Glucose control on Once Daily Steroids



Appendix G.

Use of Alfentanil in Renal Failure in Palliative Care in Lincolnshire.

Introduction

This information sheet is intended as a resource for staff in Lincolnshire looking after palliative care patients who have been prescribed alfentanil for pain relief. It is not a clinical guideline.

Most opioids are renally excreted and can accumulate in renal failure. Some patients with poor renal function can tolerate commonly used opioids such as morphine or oxycodone. Others develop significant side effects such as confusion, drowsiness, hallucinations and myoclonus (twitching).

Alfentanil is an alternative opioid that can be used for pain relief in a syringe driver for patients with poor renal function in the last few days of life.

This guidance should make prescribing this more straightforward. If in doubt seek specialist advice by ringing St Barnabas In-Patient Unit on 01522 511566 or Thorpe Hall on 01733 225900 at any time.

What is alfentanil?

Alfentanil is a synthetic strong opioid. Compared to parenteral morphine it is more potent, works more quickly but has a shorter duration of action. Alfentanil is licensed for IV use as an analgesic during surgery or in ITU. It is metabolised by the liver to inactive metabolites that are excreted in the urine.

When is it used in palliative care?

Sub-cutaneous (SC) alfentanil is used by palliative care clinicians in situations where patients are struggling with side effects from opioids due to significant renal failure. It is usually given via continuous SC infusion with a syringe driver to provide background analgesia.

SC Alfentanil can be used as a breakthrough (PRN) analgesic but its short duration of action may mean that it does not provide an adequate length of pain relief. It can be used for short lived incident related pain e.g. dressing changes. Transmucosal fentanyl products (licensed for breakthrough pain) are now more commonly used for this indication.

How do I use it?

It can be appropriate for patients to try or continue alternative opioids, especially if they are still taking oral medications. The doses and frequency of administration of alternative opioids may need to be reduced to account for the reduced renal excretion. Monitoring for adverse effects is required.

Consider alfentanil for opioid analgesia in patients with an eGFR <30 or when the patient is known/likely to have significantly deteriorating renal function. If considering use before a patient is thought to be in the last days of life, the pros and cons of syringe driver use should be discussed. E.g. impact on mobility, showering. Continuous SC infusions are normally used in palliative patients who are unable to manage oral medication due to nausea and vomiting or swallowing problems.

For opioid naïve patients the usual starting doses are:

Continuous SC infusion via syringe driver - 500micrograms/24 hours.
PRN – 125 micrograms SC. Can be repeated hourly.

For patients who are already on opioids, the alfentanil dose will be based on their previous opioid requirements (table 1).

Approximate 24 hour equivalent doses to 30mg/24hrs oral morphine			
Oral morphine	SC morphine	SC diamorphine	SC alfentanil
30mg	15mg	10mg	1mg
	Divide oral morphine dose by 2	Divide oral morphine dose by 3	Divide oral morphine dose by 30

For the breakthrough/PRN dose divide the 24 hour dose by 6. This can be repeated up to hourly.

Ranges can be used in the same way as other opioids. Administer lower doses first and titrate up if required.

How do I prescribe it?
Alfentanil is a controlled drug that comes in several strengths. The most appropriate for use in palliative care is 2ml ampoules of alfentanil 500microgram/ml.

In a syringe driver, alfentanil is compatible with other commonly prescribed symptom control medications of midazolam, levomepromazine and hyoscine butylbromide. It can be diluted with water for injection or normal saline.

What is needed?
Whenever a patient is transferred from one strong opioid to another they should be monitored for signs of being;

- under-opiated – i.e. increased pain
- over-opiated e.g. drowsiness, confusion, respiratory depression

For patients with ongoing pain, titrate alfentanil in the same way as other opioids. An increase of 25-50% at a time is commonly recommended.

For patients that appear over-opiated, consider reducing the opioid dose. Be aware that these signs may be irreversible signs of a patient who is close to death.

Cautions to note:
Contra-indications: Do not administer concurrently with MAOIs or within two weeks of their discontinuation. Generally no absolute contra-indication if titrated carefully against a patient's pain

Alfentanil can accumulate where hepatic clearance is reduced e.g. the elderly or a patient with hepatic impairment. Consider using smaller doses overall and use conservative dose estimates when converting from other opioids.

Opioid withdrawal symptoms can occur when switching from morphine or oxycodone to a continuous SC infusion of alfentanil. These manifest with symptoms like gastric flu and last for a few days; PRN doses of the original opioid will relieve troublesome symptoms.

Alfentanil is metabolised in the liver by CYP3A4. Caution is required with concurrent use of drugs which inhibit or induce these enzymes. This is not usually an issue for patients who are only on medications for symptomatic control.

K Collett.
Palliative Medicine Consultant
St Barnabas Hospice and ULHT.

References (last accessed 6.11.17):
Alfentanil. PCF6 accessed via www.palliativedrugs.com
Alfentanil, St Elizabeth Hospice, Ipswich.
https://www.stelizabethhospice.org.uk/documents/document_library/guidelines_for_the_use_of_alfentanil.pdf

APPENDIX H

List of Abbreviations

SC	Sub cutaneous
SOB	Shortness of breath
N+V	Nausea and vomiting
hrly	hourly
mg	milligram
PRN	As needed
ULHT	United Lincolnshire Hospitals Trust
LCHS	Lincolnshire Community Health Services
JIC	Just in case
eGFR	estimated glomerular filtration rate
PO	by mouth
PR	by rectum
CSCI	Continuous Sub Cutaneous Infusion
TDS	three times a day
PO/IV	Per oral / intravenous
MHRA	Medicines and Healthcare products Regulatory Agency
CHM	Commission on Human Medicines.
ACKD	Advanced chronic kidney disease
ml	millilitre
mmol	millimole
BM	Capillary glucose monitoring
NICE	National Institute of Clinical Excellence