Nocturnal enuresis: the management of bedwetting in children and young people

NICE guideline

Draft for consultation, March 2010

If you wish to comment on this version of the guideline, please be aware that all the supporting information and evidence is contained in the full version.

Contents

Introduction

This guideline makes recommendations on the assessment and management of bedwetting in children and young people. The guidance applies to children and young people up to 19 years with the symptom of bedwetting. It has been common practice to define enuresis as abnormal in children of 5 years and over, and only to consider children for treatment when they reach 7 years. Although the prevalence of symptoms decreases with age, the guideline scope did not specify a minimum age limit to allow consideration of whether there are interventions of benefit to younger children previously excluded from advice and services due to their age.

The causes of bedwetting are not fully understood. Bedwetting can be considered to be a symptom that may result from a combination of different predisposing factors. There are a number of different disturbances of physiology that may be associated with the development of bedwetting. These disturbances may be categorised as sleep arousal difficulties, polyuria and bladder dysfunction.

Different experts and expert bodies have different definitions for ‘nocturnal enuresis‘ (discussed in the full guideline). The term ‘bedwetting’ is used in this guideline to describe the symptom of involuntary wetting during sleep without any inherent suggestion of frequency or pathophysiology.

Children with bedwetting may also have symptoms related to the urinary tract during the day. A history of daytime urinary symptoms may be important in determining the approach to management of bedwetting and so the assessment sections include questions about daytime urinary symptoms and how the answers to these may influence the approach to managing bedwetting. However, the management of daytime urinary symptoms is outside the scope of this guideline.

The treatment of bedwetting has a positive effect on the self-esteem of children. Healthcare professionals should persist in offering different treatments and treatment combinations if the first-choice treatment is not

successful. Children and young people with bedwetting are cared for by a number of different healthcare professionals in a variety of settings. All healthcare professionals should be aware of and work within legal and professional codes and competency frameworks.

The guideline will assume that prescribers will use a drug's summary of product characteristics to inform decisions made with individual patients.

Patient-centred care

This guideline offers best practice advice on the care of children and young people with bedwetting.

Treatment and care should take into account patients' needs and preferences. Children and young people with bedwetting and their families and/or carers should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If a child or young person is not old enough or does not have the capacity to make decisions healthcare professionals should follow the Department of Health's advice on consent (available from www.dh.gov.uk/consent) and the code of practice that accompanies the Mental Capacity Act (summary available from www.publicguardian.gov.uk). In Wales, healthcare professionals should follow advice on consent from the Welsh Assembly Government (available from www.wales.nhs.uk/consent). If the patient is under 16, healthcare professionals should follow the guidelines in 'Seeking consent: working with children' (available from www.dh.gov.uk).

Good communication between healthcare professionals and patients is essential. It should be supported by evidence-based written information tailored to the patient's needs. Treatment and care, and the information patients are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

Children and young people and their families and carers should all have the opportunity to be involved in decisions about treatment and care. Families and carers should also be given the information and support they need.

Key priorities for implementation

- Inform children with bedwetting and their parents or carers that bedwetting is not the child's fault and that punitive measures should not be used in the management of bedwetting. **[1.1.1]**

- Offer support and appropriate treatment to all children with bedwetting and their parents and carers**. [1.1.2]**

- Do not exclude younger children (for example, those under 7 years) from the management of bedwetting on the basis of age alone. **[1.1.3]**

- Consider whether or not it is appropriate to offer treatment with an alarm or pharmacological therapy, depending on the age of child, the frequency of bedwetting and the motivation and needs of the child and family. **[1.3.9]**

- Consider child maltreatment[1] if:

    - a child is reported to be deliberately bedwetting
    - parents or carers are seen or reported to punish a child for bedwetting despite professional advice that the symptom is involuntary
    - a child has secondary daytime wetting or secondary bedwetting that persists despite adequate assessment and management unless there is a medical explanation (for example, urinary tract infection) or clearly identified stressful situation that is not part of maltreatment (for example, bereavement, parental separation). **[1.3.10]**

[This recommendation is adapted from 'When to suspect child maltreatment' (NICE clinical guideline 89).]

[1] For the purposes of the child mistreatment guideline, to consider child maltreatment means that maltreatment is one possible explanation for the alerting feature or is included in the differential diagnosis.

- Address abnormal fluid intake or toileting patterns before starting other treatments for bedwetting in children. **[1.4.7]**

- Explain to children and parents or carers that reward systems with positive rewards for agreed behaviour rather than dry nights should be used either alone or in conjunction with other treatments for bedwetting. For example, rewards may be given for:

    - drinking good levels of fluid during the day
    - using the toilet to pass urine before sleep
    - engaging in treatment (for example, taking medication or helping to change sheets). **[1.6.1]**

- Offer an alarm as the first-line treatment to children with bedwetting unless an alarm is considered inappropriate or undesirable. **[1.7.1]**

- Offer desmopressin to children for whom rapid onset, short-term improvement in bedwetting is the priority of treatment. **[1.8.1]**

- Offer referral to a healthcare professional with specialist expertise in the management of bedwetting to children with bedwetting that has not responded to repeated courses of treatment with desmopressin. **[1.9.12]**

Guidance

The following guidance is based on the best available evidence. The full guideline ([hyperlink to be added for final publication]) gives details of the methods and the evidence used to develop the guidance.

These recommendations apply to all healthcare professionals who are involved in the management of bedwetting in children and young people. Healthcare professionals are reminded of their duty under the Disability Discrimination Act (2005) to make reasonable adjustments to ensure that all people have the same opportunity for health.

For the purposes of this guideline we have used the terms 'bedwetting' and 'daytime symptoms' to describe those symptoms that may be experienced by the population who present for treatment for 'bedwetting'.

Bedwetting is used to describe urinary incontinence/wetting while sleeping without reference to how often this occurs.

Daytime symptoms is used to describe daytime urinary symptoms such as wetting, frequency or urgency.

‘Response to an intervention’ means that the child has achieved 14 consecutive dry nights or a 90% improvement in symptoms. ‘Partial response’ means that the child’s symptoms have improved but the improvement has not reached 14 consecutive dry nights or a 90% improvement.

The term 'child' is used throughout to signify child or young person under 19 years, unless otherwise stated.

1.1 Principles of care

1.1.1 Inform children with bedwetting and their parents or carers that bedwetting is not the child's fault and that punitive measures should not be used in the management of bedwetting.

1.1.2 Offer support and appropriate treatment to all children with bedwetting and their parents and carers.

1.1.3 Do not exclude younger children (for example, those under 7 years) from the management of bedwetting on the basis of age alone.

1.2 Identification and assessment

1.2.1 Ask the child and parents or carers whether the bedwetting started in the last few days or weeks. If so, consider whether this is a presentation of a systemic illness.

1.2.2 Enquire about bedwetting over the previous 6 months. If the child had previously been dry at night without assistance for 6 months, enquire about any recent medical, emotional or physical triggers. Consider whether any medical, emotional or physical triggers require additional intervention.

1.2.3 Enquire about the pattern of bedwetting, including questions such as:

- How many nights a week does bedwetting occur?
- Is there a large volume of urine?
- At what times of night does the bedwetting occur?
- Does the child wake up immediately after bedwetting?

1.2.4 Enquire about any daytime symptoms in a child with bedwetting, including:

- daytime frequency (that is, passing urine more than 7 times a day)
- daytime urgency

- daytime wetting
- abdominal straining or poor urinary stream
- pain passing urine.

1.2.5 Enquire about daytime toileting patterns in a child with bedwetting, including:

- whether daytime symptoms occur only in some situations
- avoidance of toilets at school or other settings
- whether the child goes to the toilet to pass urine more or less frequently than his or her peers.

1.2.6 Enquire about the child's fluid intake throughout the day. In particular, ask whether the child or family are restricting fluids.

1.2.7 Consider whether a record of the child’s fluid intake, daytime symptoms, bedwetting and toileting patterns would be useful in the assessment and management of bedwetting. If so, consider asking the child and parents or carers to record this information.

1.2.8 Do not perform urinalysis routinely in children with bedwetting. However, do perform it if any of the following apply in a child with bedwetting:

- bedwetting started recently
- the child has daytime symptoms
- the child has any signs of ill health
- there is a history or symptoms or signs suggestive of urinary tract infections
- there is a history or symptoms suggestive of diabetes mellitus.

1.2.9 Assess whether the child has comorbidities or there are exacerbating conditions, in particular:

- constipation and/or soiling
- developmental, attention or learning difficulties

- diabetes mellitus
- behavioural, emotional or family problems
- vulnerable child or family.

1.2.10 Consider assessment, investigation and/or referral when bedwetting is associated with:

- severe daytime symptoms
- a history of recurrent urinary infections
- known or suspected physical or neurological problems
- comorbidities or exacerbating conditions (in particular, those listed in recommendation 1.2.9).

1.2.11 Investigate and treat children with bedwetting and suspected urinary tract infection in line with 'Urinary tract infection: diagnosis, treatment and long-term management of urinary tract infection in children' (NICE clinical guideline 54).

1.2.12 Investigate and treat children with bedwetting and soiling or constipation in line with 'Constipation in children: diagnosis and management of idiopathic childhood constipation in primary and secondary care' (NICE clinical guideline XX[2]).

1.2.13 Consider investigating and treating daytime symptoms before bedwetting if daytime symptoms predominate.

1.2.14 Explore the child's views about their bedwetting, including:

- what the child considers the main problem
- whether the child thinks the problem requires treatment.

1.2.15 Ask whether short-term dryness is a priority for family or recreational reasons (for example, for a sleep-over).

1.2.16 Consider factors that might affect treatment and support needs, such as the child's sleeping arrangements (for example, does the

[2] Currently under development – publication expected May 2010.

child have his or her own bed or bedroom) and the impact of bedwetting on the child and family. Consider whether the child and parents or carers have the necessary level of commitment, including time available, to engage in a treatment programme.

1.2.17 Consider whether the child's parents or carers need support, particularly if they are having difficulty coping with the burden of bedwetting, or if they have expressed anger, negativity or blame towards the child.

1.2.18 Use the findings of the history to inform diagnosis and management of bedwetting according to the table below:

Findings from history	Possible interpretation
Large volume of urine in the first few hours of night	Typical pattern for bedwetting only.
Variable volume of urine, often more than once a night	Typical pattern for children who have bedwetting and daytime symptoms with possible underlying overactive bladder.
Bedwetting every night	Severe bedwetting is less likely to resolve spontaneously than infrequent bedwetting.
Previously dry for more than 6 months	Bedwetting is defined as secondary.
•Daytime frequency •Daytime urgency •Daytime wetting •Abdominal straining or poor urinary stream •Pain passing urine	Any of these may indicate the presence of a bladder disorder such as overactive bladder or more rarely (when symptoms are very severe and persistent) an underlying urological disease.
Constipation	A common comorbidity that can cause enuresis and required treatment (see 'Constipation in children' [NICE clinical guideline XX[3]]).
Soiling	Frequent soiling is usually secondary to underlying faecal impaction and constipation which may have been unrecognised.
Inadequate fluid intake	May mask an underlying bladder problem such as overactive bladder disorder and may impede the development of an adequate bladder capacity.
Behavioural and emotional problems	These may be a cause or a consequence of bedwetting. Treatment may need to be tailored to the specific requirements to each child and family.
Family problems	A difficult or 'stressful' environment may be a trigger for bedwetting. These factors should be addressed alongside the management of bedwetting.
Practical issues	Easy access to a toilet at night, sharing a bedroom or bed and proximity of parents to provide support are all important issues to consider and address when considering treatment, especially with an alarm.

[3] Currently under development – publication expected May 2010.

1.3 Discussing management options[4]

1.3.1 Discuss with the child and parents or carers how they might benefit from the treatment. Clearly explain the condition and how the treatment will influence this.*

1.3.2 Explain the aims of the treatment to the child and parents or carers and openly discuss the pros and cons of proposed treatment.*

1.3.3 Clarify what the child and parents or carers hope the treatment will achieve.*

1.3.4 Avoid making assumptions about the child and parents or carers' preferences about treatment. Talk to them to find out their preferences, and note any non-verbal cues that may indicate you need to explore their perspective further.*

1.3.5 Healthcare professionals have a duty to help the child and parents or carers to make decisions about the child's treatment based on an understanding of the likely benefits and risks rather than on misconceptions.*

1.3.6 Accept that the child and parents or carers may have different views from healthcare professionals about the balance of risks, benefits and side effects of medications.*

1.3.7 People differ in the type and amount of information they need and want. Therefore the provision of information should be individualised and is likely to include, but not be limited to:

- what the treatment is and how it works
- how to use the treatment
- likely or significant adverse effects and what to do if they think they are experiencing them

[4] Recommendations marked with an asterisk are adapted from 'Medicines adherence' (NICE clinical guideline 76).

- what to do if they miss a dose of medication or stop using treatment
- whether further courses of the medication will be needed after the first prescription
- how to get further supplies of medication or help with faulty alarms.*

1.3.8 Inform the child and parents or carers of practical ways to reduce the impact of bedwetting before and during treatment (for example, using bed protection and washable or disposable products).

1.3.9 Consider whether or not it is appropriate to offer treatment with an alarm or pharmacological therapy, depending on the age of child, the frequency of bedwetting and the motivation and needs of the child and family.

1.3.10 Consider child maltreatment[5] if:

- a child is reported to be deliberately bedwetting
- parents or carers are seen or reported to punish a child for bedwetting despite professional advice that the symptom is involuntary
- a child has secondary daytime wetting or secondary bedwetting that persists despite adequate assessment and management unless there is a medical explanation (for example, urinary tract infection) or clearly identified stressful situation that is not part of maltreatment (for example, bereavement, parental separation).

[This recommendation is adapted from 'When to suspect child maltreatment' (NICE clinical guideline 89).]

[5] For the purposes of the child mistreatment guideline, to consider child maltreatment means that maltreatment is one possible explanation for the alerting feature or is included in the differential diagnosis.

1.4 Fluid intake, diet and toileting patterns

1.4.1 Advise children with bedwetting and their parents or carers that adequate daily fluid intake is important in the management of bedwetting.

1.4.2 Advise parents or carers that daily fluid intake varies according to ambient temperature, dietary intake and physical activity. A suggested minimum is 1 litre of fluid per day at 5 years and 1.5 litres at 10 years.

1.4.3 Advise the child and parents or carers that high sugar or caffeine-based drinks should be avoided in children with bedwetting.

1.4.4 Advise parents or carers to encourage children with bedwetting to eat a healthy diet.

1.4.5 Do not restrict diet as a form of treatment for bedwetting in children.

1.4.6 Advise parents or carers to encourage the child to use the toilet to pass urine at regular intervals during the day (typically 4–5 times a day) and before sleep. This should be continued alongside the chosen treatment for bedwetting.

1.4.7 Address abnormal fluid intake or toileting patterns before starting other treatments for bedwetting in children.

1.5 Lifting and waking

1.5.1 Advise parents or carers not to use lifting without adequate waking for children with bedwetting.

1.5.2 Advise parents or carers:

- not to routinely use waking, either at regular times or randomly, for children with bedwetting

- that waking by parents or carers, either at regular times or randomly, should be used as a practical measure in the short-term management of bedwetting only.
- that older children with bedwetting that has not responded to treatment may find self-instigated waking a useful management strategy.

1.6 Reward systems and psychological interventions

1.6.1 Explain to children and parents or carers that reward systems with positive rewards for agreed behaviour rather than dry nights should be used either alone or in conjunction with other treatments for bedwetting. For example, rewards may be given for :

- drinking good levels of fluid during the day
- using the toilet to pass urine before sleep
- engaging in treatment (for example, taking medication or helping to change sheets).

1.6.2 Inform parents or carers that they should not use systems that penalise or remove previously gained rewards for incorrect behaviour or bedwetting.

1.6.3 Advise parents or carers to use reward systems alone for the initial treatment of bedwetting in previously untreated younger children who have some dry nights.

1.6.4 Consider involving a professional with psychological expertise for children with bedwetting and emotional or behavioural problems or children who have repeated recurrence of severe bedwetting.

1.6.5 Do not use psychotherapy as a specific treatment for bedwetting.

Initial treatment

1.7 Alarms

1.7.1 Offer an alarm as the first-line treatment to children with bedwetting unless an alarm is considered inappropriate or undesirable.

1.7.2 Do not offer an alarm for the treatment of bedwetting in children if:

- the child has very infrequent bedwetting (that is, less than 1–2 wet beds per week)
- the parents or carers are having difficulty coping with the burden of bedwetting
- the parents or carers have expressed anger, negativity or blame towards the child.

1.7.3 Assess the response to an alarm by 4 weeks and continue with treatment if the child is showing early signs of response.

1.7.4 Continue alarm treatment until a minimum of 2 weeks uninterrupted dryness has been achieved.

1.7.5 Reassess whether it is appropriate to continue with alarm treatment if complete dryness is not achieved at 3 months. Only continue with alarm treatment if the child's bedwetting is still improving.

1.7.6 Offer an alarm for the treatment of bedwetting in children with:

- daytime symptoms as well as bedwetting
- secondary onset bedwetting.

1.7.7 Consider offering an alternative type of alarm (for example, a vibrating alarm) for the treatment of bedwetting in children who have a hearing impairment.

1.7.8 Consider the use of an alarm for the treatment of bedwetting in children with learning and/or physical disabilities. Tailor the type of alarm to each child's needs and abilities.

1.7.9 Consider offering an alarm for the treatment of bedwetting in children under 7 years, depending on their ability, maturity, motivation and understanding of the alarm.

1.7.10 Inform parents or carers about the benefits of alarms combined with reward systems. Advise them to use positive rewards for desired behaviour, such as waking up when alarm goes off, going to the toilet after the alarm has gone off, returning to bed and resetting the alarm.

1.7.11 Encourage children with bedwetting and their parents or carers to agree on their roles and responsibilities for using the alarm and agree on the use of rewards.

1.7.12 Be aware that children and parents or carers may need a considerable amount of advice and support in learning how to use an alarm.

1.7.13 Explore and assess the ability of the family to cope with using an alarm for the treatment of bedwetting.

1.7.14 Agree with the child and parents or carers how they can access support and advice when starting to use an alarm for the treatment of bedwetting.

1.7.15 Inform the child and parents or carers that the aims of alarm treatment for bedwetting are to train the child to:

- recognise the need to pass urine
- wake to go to the toilet or hold on and
- stop the child from wetting the bed as over a period of time the child will either learn to hold on or will wake spontaneously.

1.7.16 Inform the child and parents or carers that:

- alarms have a high long-term success rate
- using an alarm can disrupt sleep

- using an alarm requires sustained parental and child commitment, involvement and effort
- alarms are not suitable for all children and families
- they need to record progress, for example if and when the child wakes and how wet the child is.

1.7.17 If offering an alarm for bedwetting in children, inform the child and parents or carers how to:

- set and use the alarm
- respond to the alarm when it goes off
- that parents and carers may need to help the child to wake to the alarm
- maintain the alarm
- deal with problems with the alarm, including who to contact when there is a problem.

1.7.18 Inform the child and parents or carers that it may take a few weeks for the early signs of a response to the alarm to occur and that these may include:

- smaller wet patches
- waking to the alarm
- the alarm going off later and fewer times per night
- fewer wet nights.

1.7.19 Inform parents or carers that dry nights may be a late sign of response to the alarm and may take weeks or months to achieve.

1.7.20 Inform the parents or carers to restart using the alarm immediately without consulting a health professional if, following alarm treatment, the child starts bedwetting again within 2 weeks after stopping the alarm.

1.8 Desmopressin as first-line treatment

1.8.1 Offer desmopressin to children for whom rapid onset, short-term improvement in bedwetting is the priority of treatment.

1.8.2 Offer desmopressin for the treatment of bedwetting in children when an alarm is inappropriate or undesirable.

1.8.3 Offer desmopressin for the management of bedwetting in children who have daytime symptoms and bedwetting if an alarm is inappropriate or undesirable.

1.8.4 Offer desmopressin to children between 5 and 7 years if treatment is required and an alarm is inappropriate or undesirable.

1.8.5 In children who have failed to achieve complete dryness after 2 weeks on the initial dose of desmopressin (200 micrograms for desmotabs and 120 micrograms for desmomelts), consider dose escalation (to 400 micrograms of desmotabs and 240 micrograms of desmomelts).

1.8.6 Do not use desmopressin in the treatment of children who only have daytime wetting.

1.8.7 Offer desmopressin for the treatment of bedwetting in children with sickle cell disease if an alarm is inappropriate or undesirable and they can comply with night-time fluid restriction. Provide advice about withdrawal of desmopressin at times of sickle cell crisis.

1.8.8 Offer desmopressin for the treatment of bedwetting in children with emotional, attention or behavioural problems or developmental and learning difficulties if an alarm is inappropriate or undesirable and they can comply with night-time fluid restriction.

1.8.9 Do not routinely measure weight, serum electrolytes, blood pressure and urine osmolality in children being treated with desmopressin for bedwetting.

1.8.10 If offering desmopressin for bedwetting in children, inform the child and parents or carers:

- that many children, but not all, will experience a reduction in wetness
- how desmopressin works
- of the importance of fluid restriction from 1 hour before until 8 hours after taking desmopressin
- that it should be taken 1–2 hours before bed
- that many children, but not all, will relapse when treatment is withdrawn.
- to continue treatment with desmopressin for 3 months.

1.8.11 Stop or gradually withdraw desmopressin treatment according to patient preference if treatment has been successful.

1.9 Bedwetting that does not respond to initial treatment or recurs following initial treatment

Treatment following non-response to initial alarm or desmopressin

1.9.1 Offer combination treatment with an alarm and desmopressin for children with bedwetting that has not responded to initial treatment with an alarm.

1.9.2 Offer desmopressin alone to children with bedwetting that has not responded to a combination of an alarm and desmopressin following initial trial of treatment with an alarm.

1.9.3 Do not combine an alarm with desmopressin in children with bedwetting that has not responded to initial treatment with desmopressin. Offer an alarm alone if alarm may now be appropriate or desirable.

Treatment following partial response to desmopressin

1.9.4 Consider continuing treatment for children with bedwetting that has partially responded to desmopressin as response may improve for up to 6 months after starting treatment.

1.9.5 Consider an anticholinergic in combination with desmopressin for children with bedwetting that has partially responded to desmopressin.

1.9.6 Gradually withdraw desmopressin rather than suddenly stop desmopressin if a child has had a recurrence of bedwetting following successful treatment with desmopressin.

Children experiencing repeated recurrence of bedwetting

1.9.7 Consider offering an alarm again if a child who was previously dry with an alarm has started regularly bedwetting again.

1.9.8 Offer combination treatment with an alarm and desmopressin to children who have more than one recurrence of bedwetting following successful treatment with an alarm.

1.9.9 Consider using repeated courses of desmopressin in children who respond to desmopressin and experience repeated recurrence of bedwetting.

1.9.10 Withdraw desmopressin treatment at regular intervals (every 3 months) to check if dryness has been achieved when using desmopressin for long-term treatment of bedwetting.

1.9.11 Consider alarm treatment as an alternative to restarting desmopressin for children who have repeated recurrence of bedwetting after successful treatment with desmopressin and for whom an alarm was previously considered inappropriate or undesirable.

1.9.12 Offer referral to a healthcare professional with specialist expertise in the management of bedwetting to children with bedwetting that has not responded to repeated courses of treatment with desmopressin.

1.9.13 Perform regular medication reviews for children on repeated courses of pharmacological treatment for bedwetting.

1.10 Anticholinergics

1.10.1 Do not use anticholinergics alone in children for the management of bedwetting unless they have been assessed by a healthcare professional with specialist expertise.

1.10.2 Do not offer anticholinergics combined with imipramine for the treatment of bedwetting in children.

1.10.3 Do not offer anticholinergics combined with desmopressin as the first-choice treatment in children with bedwetting and no daytime symptoms.

1.10.4 Consider offering an anticholinergic combined with desmopressin in children whose bedwetting has:

- not responded to desmopressin alone or
- not responded to any other treatment.

1.10.5 Consider the use of an anticholinergic combined with desmopressin for bedwetting in children who also have daytime symptoms and have been assessed by a healthcare professional with specialist expertise in the management of bedwetting.

1.10.6 Consider continuing treatment for children with bedwetting that has partially responded to desmopressin combined with an anticholinergic as children may have an improved response up to 6 months after starting treatment.

1.10.7 Consider using repeated courses of desmopressin combined with an anticholinergic in children who have responded to this combination and experience repeated recurrence of bedwetting.

1.11 Tricyclic antidepressants

1.11.1 Do not use tricyclic antidepressants as a first-line treatment for bedwetting in children.

1.11.2 If offering a tricyclic antidepressant, imipramine should be used for the treatment of bedwetting in children.

1.11.3 Consider imipramine for children with treatment-resistant bedwetting who have been assessed by a healthcare professional with expertise in the management of bedwetting.

1.11.4 If offering imipramine for bedwetting in children, inform the child and parents or carers:

- that many children, but not all, will experience a reduction in wetness
- how imipramine works
- that it should be taken 2–3 hours before bed
- that the dose should be increased gradually
- about relapse rates, for example, more than two out of three children will relapse after a 3-month course of imipramine
- about the particular dangers of imipramine overdose, the importance of taking only the prescribed amount and storing it safely.

1.11.5 Regularly review (every 3 months) children who are taking imipramine for the long-term management of bedwetting.

1.11.6 Withdraw imipramine gradually when stopping treatment for bedwetting in children.

1.12 Bladder training[6] and retention control training[7]

1.12.1 Do not use retention control training alone or bladder training alone for the treatment of bedwetting in children.

1.13 Dry-bed training[8]

1.13.1 Do not offer dry-bed training with or without an alarm for the treatment of bedwetting in children.

1.14 Information for the child and family

1.14.1 Offer information, tailored to the child's needs, to children being treated for bedwetting and their parents or carers.

1.14.2 Offer information and details of support groups to children being treated for bedwetting and their parents or carers.

1.15 Children under 5 years with bedwetting

1.15.1 Reassure parents or carers that approximately 21% of four-and-a-half year olds will still wet the bed at least once a week.

1.15.2 Consider advising parents or carers to toilet train children under 5 years who are bedwetting but are not toilet trained and there is no reason why toilet training should not be attempted.

[6] Bladder training (also described as bladder retraining, bladder drill, bladder re-education, bladder discipline) actively involves the individual in attempting to increase the interval between the desire to void and actual void.
[7] Training routines to improve the ability to defer the need to pass urine.
[8] A training programme that combines a number of different behavioural interventions that may include rewards, punishment training routines and waking routines and be undertaken with or without an enuresis alarm.

1.15.3 Suggest a trial of at least 2 nights in a row without nappies for a child with bedwetting who is under 5 years and toilet trained by day (that is, clean and dry during the day). Tailor the trial according to:

- the age of the child
- success of trial
- length of time being dry
- family circumstances.

1.15.4 Advise the parents or carers of child under 5 years with bedwetting that if the child wakes at night, they should use the opportunity to take him or her to the toilet.

1.15.5 Consider further assessment and investigation to exclude a specific medical problem for children over 2 years who, despite awareness of toileting needs and showing appropriate toileting behaviour, are struggling to not wet or soil themselves during the day as well as the night.

1.15.6 Be aware that previously undiagnosed chronic constipation is a common cause of bedwetting and soiling in children.

2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from www.nice.org.uk/guidance/index.jsp?action=download&o=43500

How this guideline was developed

NICE commissioned the National Collaborating Centre for Primary Care (now the National Clinical Guideline Centre for Acute and Chronic Conditions) to develop this guideline. The Centre established a Guideline Development Group (see appendix A), which reviewed the evidence and developed the recommendations. An independent Guideline Review Panel oversaw the development of the guideline (see appendix B).

There is more information in the booklet: 'The guideline development process: an overview for stakeholders, the public and the NHS' (third edition, published April 2007), which is available from www.nice.org.uk/guidelinesprocess or from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N1233).

3 Implementation

The Healthcare Commission assesses how well NHS organisations meet core and developmental standards set by the Department of Health in 'Standards for better health' (available from www.dh.gov.uk). Implementation of clinical guidelines forms part of the developmental standard D2. Core standard C5 says that NHS organisations should take into account national agreed guidance when planning and delivering care.

NICE has developed tools to help organisations implement this guidance (listed below). These are available on our website (www.nice.org.uk/CGXXX). *[NICE to amend list as needed at time of publication]*

- Slides highlighting key messages for local discussion.

    - Guide to resources giving details of how more information can be obtained from NICE, government and other national organisations.
    - Information for patients on the main messages from the guidance.
    - Costing tools:
  - costing statement explaining the resource impact of this guidance.
- Audit support for monitoring local practice.

4 Research recommendations

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The Guideline Development Group's full set of research recommendations is detailed in the full guideline (see section 5).

4.1 What elements of multicomponent treatments (for example dry-bed training and retention control training) are clinically effective and cost effective for treating bedwetting in children and young people under 19 years old?

Why this is important

The elements of multicomponent treatments (for example dry-bed training and retention control training) that are clinically effective and cost effective for treating bedwetting in children and young people under 19 years old is not known. Data from randomised controlled trials of dry-bed training and retention control training suggest that the treatments may be clinically effective. However certain elements of the multicomponent treatments are not acceptable as a form of treatment due to their punitive nature, it is not known which elements of the treatments are effective and therefore could be used in the treatment of nocturnal enuresis.

Research should:

- Use randomised controlled trials to test the effect of the different elements of dry-bed training alone and in different combinations for the treatment of bedwetting.
- Use randomised controlled trials to test the effect of the different elements of retention control training alone and in different combinations for the treatment of bedwetting
- Consider different age groups of children being treated, such as younger children (under 7 years) and older children (over 10 years) as the ability of children to take responsibility for their behaviour may be important.
- Clearly describe the techniques including who gave instructions, the timing of the treatments and the setting.

Outcomes of interest include: the number of children who achieved 14 consecutive dry nights, the number of children who remain dry at 6 months and 2 years after treatment, the mean number of wet nights after treatment, the change in the number of wet nights, the psychological effect of treatment, psychological effects (self-esteem, self-concept, PinQ[9]), quality of life measures and drop outs.

4.2 What is the clinical and cost effectiveness of standard interventions, for example alarm and desmopressin for treating bedwetting in children and young people under 19 years old?

Why this is important

The evidence base for management of bedwetting is poor. Studies are inadequately powered, symptoms are poorly defined and study populations are commonly children seen in secondary and tertiary centres. Follow-up periods are often inadequate.

Research should provide:

[9] A continence-specific paediatric quality-of-life measurement tool.

- More subgroup data (for example, young children, children with daytime symptoms as well as bedwetting, children who were previously successful with subsequent relapse, children with sickle cell disease, children with severe wetting and children with special needs).
- More robust statistical data in trials of standard interventions for treating bedwetting (for example, adequately powered to detect differences).
- Data on longer term follow-up.
- Data from populations on a primary care/community care level.

4.3 What is the impact of bedwetting upon the psychological functioning and quality of life of children and their families? How do these change with treatment?

Why is this important?

There are relatively few studies that focus upon the psychological impact and health-related quality of life of children who experience bedwetting. In addition, studies of effectiveness have focused on the achievement of dryness as the primary outcome rather than how treatment might affect social and psychological aspects as well as the quality of life of children and their families.

Research should:

- Examine the psychological impact and quality of life of children and their families as well as the effectiveness of treatment upon these aspects.
- Use standardised measures to assess the psychological impact of bedwetting on children as well as the quality of life of the child and family.
- Use standardised measures to assess change associated with treatment for bedwetting.

Quality-of-life research of children with bedwetting pre- and post-treatment would also be very useful in informing further economic evaluation work in the area.

4.4 What is the effectiveness of complementary therapies (acupuncture and hypnotherapy) for reducing the number of wet beds and improving self-esteem in children who wet the bed when they are used independently or in conjunction with conventional treatments?

Why this is important

Many families consider the use of complementary and/or alternative medicine (CAM) as a treatment option when conventional treatment 'fails' or in order to avoid drug or other treatments. There is very little evidence about the efficacy of many CAM treatments but the use of CAM is widespread and increasing across the developed world. There is a clear need for more effective guidance for the public and health professionals who advise patients as to what does and does not work and what is and is not safe.

Research should:

- Use randomised controlled trials to test the effect of using CAM therapies in addition to or instead of other treatments for bedwetting.
- Clearly describe the CAM therapies tested, including the provision of the treatment for both the treatment and the control group.
- Priority should be given to acupuncture and hypnotherapy in further research but should not exclude other CAM therapies.
- If possible, the comparative effectiveness and cost effectiveness of different CAM therapies should be tested.

Outcomes of interest include: self-esteem, number of dry nights, permanent or temporary nature of increased number of dry nights, quality of life, costs and social engagement.

4.5 What is the prevalence of wetting and/or soiling in adolescence and what are the long-term consequences for adolescents with these problems?

Why this is important

There is evidence that, for an important minority of children, wetting and soiling problems persist into late childhood and sometimes beyond puberty, but their prevalence is not clearly known. It has also recently been reported that in children who experience more frequent bedwetting (more than three times a week) it is more likely to persist into late childhood and adolescence. These studies suggest that, contrary to popular belief, wetting and soiling problems do not always resolve with increasing age. If wetting and soiling problems remain unresolved or untreated they can become socially and psychologically debilitating. There are no longitudinal cohort studies examining the impact of wetting and soiling on a wide range of outcomes in adolescence relating to mental health, education/school attainment, relationships with parents and peers, social activities and goals/aspirations for the future. Persistence of wetting and soiling problems into adolescence is likely to be accompanied by ridicule and bullying by peers and increasing intolerance from parents, especially if they believe that their child is to blame for their problem. Such reactions can only serve to exacerbate the young person's distress and may lead to delays in seeking help. In particular, teenagers who are unsuccessfully treated in childhood are often reluctant to seek help for wetting or soiling due to the severe embarrassment associated with the problem, and others may simply believe that no help is available.

Research should:

- Use adolescents own self-reports of frequency of bedwetting, daytime wetting and soiling in this age group.
- Adapt existing trajectory models to incorporate information on frequency of wetting and soiling to examine whether children with more frequent problems are more likely to experience continuing wetting and soiling into adolescence.
- Examine mental health, psychosocial and educational outcomes.

- Examine whether adolescents who have combined wetting and soiling are at increased risk of negative outcomes compared to those with wetting or soiling alone.

5 Other versions of this guideline

5.1 Full guideline

The full guideline, contains details of the methods and evidence used to develop the guideline. It is published by the National Clinical Guidelines Centre, and is available from [NCGC website details to be added] and our website (www.nice.org.uk/CGXXXfullguideline). **[Note: these details will apply to the published full guideline.]**

5.2 Quick reference guide

A quick reference guide for healthcare professionals is available from www.nice.org.uk/CGXXXquickrefguide

For printed copies, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk (quote reference number N1XXX). **[Note: these details will apply when the guideline is published.]**

5.3 'Understanding NICE guidance'

Information for patients and carers ('Understanding NICE guidance') is available from www.nice.org.uk/CGXXXpublicinfo

For printed copies, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk (quote reference number N1XXX). **[Note: these details will apply when the guideline is published.]**

We encourage NHS and voluntary sector organisations to use text from this booklet in their own information about enabling and supporting patients to make informed decisions about prescribed medicines.

6 Related NICE guidance

- When to suspect child maltreatment. NICE clinical guideline 89 (2009). Available from www.nice.org.uk/guidance/CG89
- Medicines adherence. NICE clinical guideline 76 (2009). Available from www.nice.org.uk/guidance/CG76
- Urinary tract infection in children. NICE clinical guideline 54 (2007). Available from www.nice.org.uk/guidance/CG54

Under development

NICE is developing the following guidance (details available from www.nice.org.uk):

- Management of constipation in children. Publication expected May 2010.

7 Updating the guideline

NICE clinical guidelines are updated as needed so that recommendations take into account important new information. We check for new evidence 2 and 4 years after publication, to decide whether all or part of the guideline should be updated. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations.

Appendix A: The Guideline Development Group

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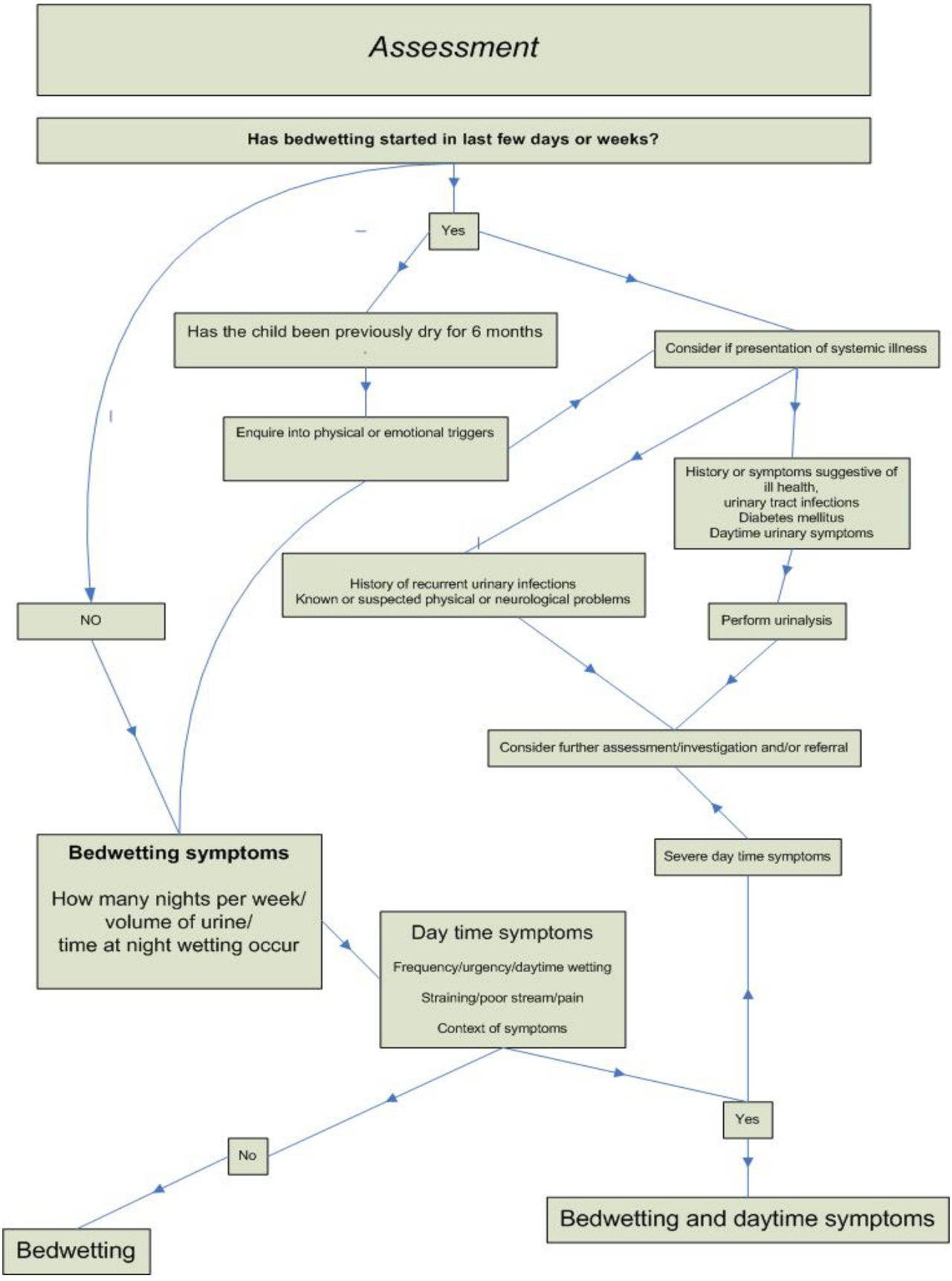
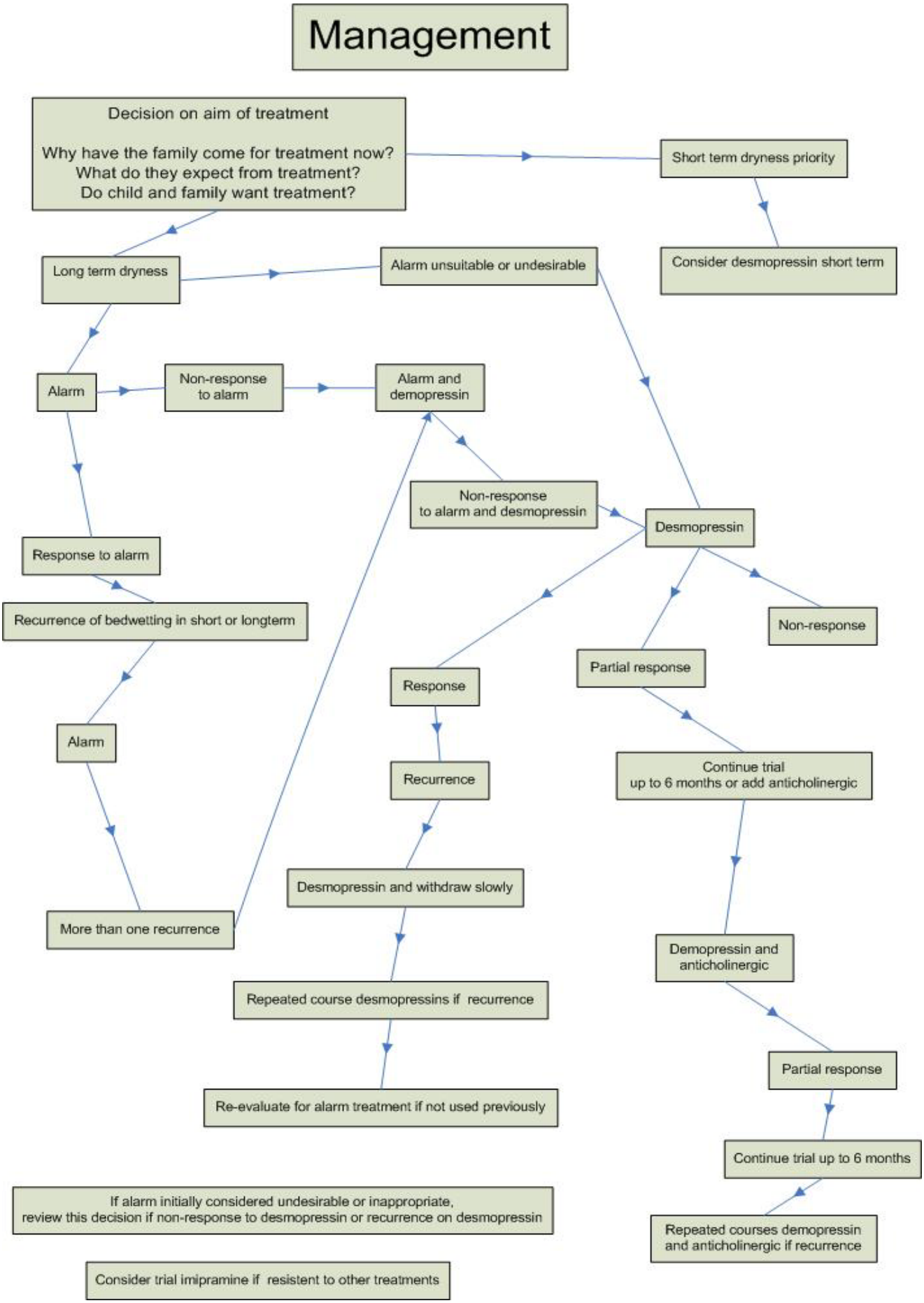
Appendix B: The Guideline Review Panel

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The panel includes members from the following perspectives: primary care, lay, public health and industry.

Appendix C: The algorithms




Management
Decision on aim of treatment
Why have the family come for treatment now?
What do they expect from treatment?
Do child and family want treatment?
Short term dryness priority
Consider desmopressin short term
Long term dryness
Alarm unsuitable or undesirable
Alarm
Non-response to alarm
Alarm and desmopressin
Non-response to alarm and desmopressin
Desmopressin
Response to alarm
Recurrence of bedwetting in short or longterm
Non-response
Partial response
Response
Alarm
Recurrence
Continue trial up to 6 months or add anticholinergic
Desmopressin and withdraw slowly
More than one recurrence
Demopressin and anticholinergic
Repeated course desmopressins if recurrence
Partial response
Re-evaluate for alarm treatment if not used previously
Continue trial up to 6 months
If alarm initially considered undesirable or inappropriate, review this decision if non-response to desmopressin or recurrence on desmopressin
Repeated courses demopressin and anticholinergic if recurrence
Consider trial imipramine if resistent to other treatments