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Lower urinary tract symptoms

**The management of lower urinary tract
symptoms in men**

NICE clinical guideline 97

The management of lower urinary tract symptoms in men

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- The NICE guideline (this document) – all the recommendations.
- A quick reference guide – a summary of the recommendations for healthcare professionals.
- ‘Understanding NICE guidance’ – a summary for patients and carers.
- The full guideline – all the recommendations, details of how they were developed, and reviews of the evidence they were based on.

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- N2141 (Quick reference guide)
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This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

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Introduction

Lower urinary tract symptoms (LUTS) comprise storage, voiding and post-micturition symptoms affecting the lower urinary tract. There are many possible causes of LUTS such as abnormalities or abnormal function of the prostate, urethra, bladder or sphincters. In men, the most common cause is benign prostate enlargement (BPE), which obstructs the bladder outlet. BPE happens when the number of cells in the prostate increases, a condition called benign prostatic hyperplasia. Other conditions that can cause LUTS include detrusor muscle weakness or overactivity, prostate inflammation (prostatitis), urinary tract infection, prostate cancer and neurological disease. This clinical guideline will advise on the effective evidence-based management of LUTS in men.

LUTS in men are best categorised into voiding, storage or post-micturition symptoms to help define the source of the problem. Voiding symptoms include weak or intermittent urinary stream, straining, hesitancy, terminal dribbling and incomplete emptying. Storage symptoms include urgency, frequency, urgency incontinence and nocturia. The major post-micturition symptom is post-micturition dribbling, which is common and bothersome. Although LUTS do not usually cause severe illness, they can considerably reduce men's quality of life, and may point to serious pathology of the urogenital tract.

LUTS are a major burden for the ageing male population. Age is an important risk factor for LUTS and the prevalence of LUTS increases as men get older. Bothersome LUTS can occur in up to 30% of men older than 65 years. This is a large group potentially requiring treatment.

Because uncertainty and variation exist in clinical practice, this guideline gives clear recommendations on diagnosing, monitoring and treating LUTS.

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

Patient-centred care

This guideline offers best practice advice on the care of men with lower urinary tract symptoms.

Treatment and care should take into account men's needs and preferences. Men with lower urinary tract symptoms should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If men do not have the capacity to make decisions, healthcare professionals should follow the Department of Health guidelines – 'Reference guide to consent for examination or treatment' (2001) (available from www.dh.gov.uk/). Healthcare professionals should also follow 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).

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

If the man agrees, families and carers should 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

Initial assessment

- At initial assessment, offer men with LUTS an assessment of their general medical history to identify possible causes of LUTS, and associated comorbidities. Review current medication, including herbal and over-the-counter medicines, to identify drugs that may be contributing to the problem.
- At initial assessment, offer men with LUTS a physical examination guided by urological symptoms and other medical conditions, an examination of the abdomen and external genitalia, and a digital rectal examination (DRE).
- At initial assessment, ask men with bothersome LUTS to complete a urinary frequency volume chart.
- Refer men for specialist assessment if they have LUTS complicated by recurrent or persistent urinary tract infection, retention, renal impairment that is suspected to be caused by lower urinary tract dysfunction, or suspected urological cancer.

Conservative management

- Offer men with storage LUTS (particularly urinary incontinence) temporary containment products (for example, pads or collecting devices) to achieve social continence until a diagnosis and management plan have been discussed.
- Offer men with storage LUTS suggestive of overactive bladder (OAB) supervised bladder training, advice on fluid intake, lifestyle advice and, if needed, containment products.

Surgery for voiding symptoms

- If offering surgery for managing voiding LUTS presumed secondary to BPE, offer monopolar or bipolar transurethral resection of the prostate (TURP), monopolar transurethral vaporisation of the prostate (TUVP) or holmium laser enucleation of the prostate (HoLEP). Perform HoLEP at a centre specialising in the technique, or with mentorship arrangements in place.

- If offering surgery for managing voiding LUTS presumed secondary to BPE, do not offer minimally invasive treatments (including transurethral needle ablation [TUNA], transurethral microwave thermotherapy [TUMT], high-intensity focused ultrasound [HIFU], transurethral ethanol ablation of the prostate [TEAP] and laser coagulation) as an alternative to TURP, TUVP or HoLEP (see 1.5.2).

Providing information

- Make sure men with LUTS have access to care that can help with:
 - their emotional and physical conditions **and**
 - relevant physical, emotional, psychological, sexual and social issues.
- Provide men with storage LUTS (particularly incontinence) containment products at point of need, and advice about relevant support groups.

Guidance

The following guidance is based on the best available evidence. The full guideline ('The management of lower urinary tract symptoms in men') gives details of the methods and the evidence used to develop the guidance.

In this guidance, 'mild' refers to an International Prostate Symptom Score (IPSS) of 0–7, 'moderate' refers to an IPSS of 8–19 and 'severe' refers to an IPSS of 20–35.

1.1 *Initial assessment*

Initial assessment refers to assessment carried out in any setting by a healthcare professional without specific training in managing LUTS in men.

- 1.1.1 At initial assessment, offer men with LUTS an assessment of their general medical history to identify possible causes of LUTS, and associated comorbidities. Review current medication, including herbal and over-the-counter medicines, to identify drugs that may be contributing to the problem.
- 1.1.2 At initial assessment, offer men with LUTS a physical examination guided by urological symptoms and other medical conditions, an examination of the abdomen and external genitalia, and a digital rectal examination (DRE).
- 1.1.3 At initial assessment, ask men with bothersome LUTS to complete a urinary frequency volume chart.
- 1.1.4 At initial assessment, offer men with LUTS a urine dipstick test to detect blood, glucose, protein, leucocytes and nitrites.
- 1.1.5 At initial assessment, offer men with LUTS information, advice and time to decide if they wish to have prostate specific antigen (PSA) testing if:
 - their LUTS are suggestive of bladder outlet obstruction secondary to BPE **or**

- their prostate feels abnormal on DRE **or**
 - they are concerned about prostate cancer.
- 1.1.6 Manage suspected prostate cancer in men with LUTS in line with ‘Prostate cancer: diagnosis and management’ (NICE clinical guideline 58) and ‘Referral guidelines for suspected cancer’ (NICE clinical guideline 27).
- 1.1.7 At initial assessment, offer men with LUTS a serum creatinine test (plus estimated glomerular filtration rate [eGFR] calculation) only if you suspect renal impairment (for example, the man has a palpable bladder, nocturnal enuresis, recurrent urinary tract infections or a history of renal stones).
- 1.1.8 Do not routinely offer cystoscopy to men with uncomplicated LUTS (that is, without evidence of bladder abnormality) at initial assessment.
- 1.1.9 Do not routinely offer imaging of the upper urinary tract to men with uncomplicated LUTS at initial assessment.
- 1.1.10 Do not routinely offer flow-rate measurement to men with LUTS at initial assessment.
- 1.1.11 Do not routinely offer a post void residual volume measurement to men with LUTS at initial assessment.
- 1.1.12 At initial assessment, give reassurance, offer advice on lifestyle interventions (for example, fluid intake) and information on their condition to men whose LUTS are not bothersome or complicated. Offer review if symptoms change.
- 1.1.13 Offer men referral for specialist assessment if they have bothersome LUTS that have not responded to conservative management or drug treatment.

- 1.1.14 Refer men for specialist assessment if they have LUTS complicated by recurrent or persistent urinary tract infection, retention, renal impairment that is suspected to be caused by lower urinary tract dysfunction, or suspected urological cancer.
- 1.1.15 Offer men considering any treatment for LUTS an assessment of their baseline symptoms with a validated symptom score (for example, the IPSS) to allow assessment of subsequent symptom change.

1.2 Specialist assessment

Specialist assessment refers to assessment carried out in any setting by a healthcare professional with specific training in managing LUTS in men.

- 1.2.1 Offer men with LUTS having specialist assessment an assessment of their general medical history to identify possible causes of LUTS, and associated comorbidities. Review current medication, including herbal and over-the-counter medicines to identify drugs that may be contributing to the problem.
- 1.2.2 Offer men with LUTS having specialist assessment a physical examination guided by urological symptoms and other medical conditions, an examination of the abdomen and external genitalia, and a digital rectal examination (DRE).
- 1.2.3 At specialist assessment, ask men with LUTS to complete a urinary frequency volume chart.
- 1.2.4 At specialist assessment, offer men with LUTS information, advice and time to decide if they wish to have prostate specific antigen (PSA) testing if:
- their LUTS are suggestive of bladder outlet obstruction secondary to BPE **or**
 - their prostate feels abnormal on DRE **or**
 - they are concerned about prostate cancer.

- 1.2.5 Offer men with LUTS who are having specialist assessment a measurement of flow rate and post void residual volume.
- 1.2.6 Offer cystoscopy to men with LUTS having specialist assessment only when clinically indicated, for example if there is a history of any of the following:
- recurrent infection
 - sterile pyuria
 - haematuria
 - profound symptoms
 - pain.
- 1.2.7 Offer imaging of the upper urinary tract to men with LUTS having specialist assessment only when clinically indicated, for example if there is a history of any of the following:
- chronic retention
 - haematuria
 - recurrent infection
 - sterile pyuria
 - profound symptoms
 - pain.
- 1.2.8 Consider offering multichannel cystometry to men with LUTS having specialist assessment if they are considering surgery.
- 1.2.9 Offer pad tests to men with LUTS having specialist assessment only if the degree of urinary incontinence needs to be measured.

1.3 *Conservative management*

- 1.3.1 Explain to men with post micturition dribble how to perform urethral milking.
- 1.3.2 Offer men with storage LUTS (particularly urinary incontinence) temporary containment products (for example, pads or collecting

devices) to achieve social continence until a diagnosis and management plan have been discussed.

- 1.3.3 Offer a choice of containment products to manage storage LUTS (particularly urinary incontinence) based on individual circumstances and in consultation with the man.
- 1.3.4 Offer men with storage LUTS suggestive of overactive bladder (OAB) supervised bladder training, advice on fluid intake, lifestyle advice and, if needed, containment products.
- 1.3.5 Inform men with LUTS and proven bladder outlet obstruction that bladder training is less effective than surgery.
- 1.3.6 Offer supervised pelvic floor muscle training to men with stress urinary incontinence caused by prostatectomy. Advise them to continue the exercises for at least 3 months before considering other options.
- 1.3.7 Refer for specialist assessment men with stress urinary incontinence.
- 1.3.8 Do not offer penile clamps to men with storage LUTS (particularly urinary incontinence).
- 1.3.9 Offer external collecting devices (for example, sheath appliances, pubic pressure urinals) for managing storage LUTS (particularly urinary incontinence) in men before considering indwelling catheterisation (see 1.3.11).

- 1.3.10 Offer intermittent bladder catheterisation before indwelling urethral or suprapubic catheterisation to men with voiding LUTS that cannot be corrected by less invasive measures.
- 1.3.11 Consider offering long-term indwelling urethral catheterisation to men with LUTS:
- for whom medical management has failed and surgery is not appropriate **and**
 - who are unable to manage intermittent self-catheterisation **or**
 - with skin wounds, pressure ulcers or irritation that are being contaminated by urine **or**
 - who are distressed by bed and clothing changes.
- 1.3.12 If offering long-term indwelling catheterisation, discuss the practicalities, benefits and risks with the man and, if appropriate, his carer.
- 1.3.13 Explain to men that indwelling catheters for urgency incontinence may not result in continence or the relief of recurrent infections.
- 1.3.14 Consider permanent use of containment products for men with storage LUTS (particularly urinary incontinence) only after assessment and exclusion of other methods of management.

1.4 Drug treatment

- 1.4.1 Offer drug treatment only to men with bothersome LUTS when conservative management options have been unsuccessful or are not appropriate.
- 1.4.2 Take into account comorbidities and current treatment when offering men drug treatment for LUTS.
- 1.4.3 Offer an alpha blocker (alfuzosin, doxazosin, tamsulosin or terazosin) to men with moderate to severe LUTS.
- 1.4.4 Offer an anticholinergic to men to manage the symptoms of OAB.

- 1.4.5 Offer a 5-alpha reductase inhibitor to men with LUTS who have prostates estimated to be larger than 30 g or a PSA level greater than 1.4 ng/ml, and who are considered to be at high risk of progression (for example, older men).
- 1.4.6 Consider offering a combination of an alpha blocker and a 5-alpha reductase inhibitor to men with bothersome moderate to severe LUTS and prostates estimated to be larger than 30 g or a PSA level greater than 1.4 ng/ml.
- 1.4.7 Consider offering an anticholinergic as well as an alpha blocker to men who still have storage symptoms after treatment with an alpha blocker alone.
- 1.4.8 Consider offering a late afternoon loop diuretic¹ to men with nocturnal polyuria.
- 1.4.9 Consider offering oral desmopressin² to men with nocturnal polyuria if other medical causes³ have been excluded and they have not benefited from other treatments. Measure serum sodium 3 days after the first dose. If serum sodium is reduced to below the normal range, stop desmopressin treatment.

¹ At the time of publication (May 2010), loop diuretics (for example, furosemide) did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.

² At the time of publication (May 2010), desmopressin did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented. Consult the summary of product characteristics for the contraindications and precautions.

³ Medical conditions that can cause nocturnal polyuria symptoms include diabetes mellitus, diabetes insipidus, adrenal insufficiency, hypercalcaemia, liver failure, polyuric renal failure, chronic heart failure, obstructive apnoea, dependent oedema, pyelonephritis, chronic venous stasis, sickle cell anaemia. Medications that can cause nocturnal polyuria symptoms include calcium channel blockers, diuretics, selective serotonin reuptake inhibitors (SSRI) antidepressants.

Review

- 1.4.10 Discuss active surveillance (reassurance and lifestyle advice without immediate treatment and with regular follow-up) or active intervention (conservative management, drug treatment or surgery) for:
- men with mild or moderate bothersome LUTS
 - men whose LUTS fail to respond to drug treatment.
- 1.4.11 Review men taking drug treatments to assess symptoms, the effect of the drugs on the patient's quality of life and to ask about any adverse effects from treatment.
- 1.4.12 Review men taking alpha blockers at 4–6 weeks and then every 6–12 months.
- 1.4.13 Review men taking 5-alpha reductase inhibitors at 3–6 months and then every 6–12 months.
- 1.4.14 Review men taking anticholinergics every 4–6 weeks until symptoms are stable, and then every 6–12 months.

1.5 *Surgery for voiding symptoms*

- 1.5.1 For men with voiding symptoms, offer surgery only if voiding symptoms are severe or if drug treatment and conservative management options have been unsuccessful or are not appropriate. Discuss the alternatives to and outcomes from surgery.
- 1.5.2 If offering surgery for managing voiding LUTS presumed secondary to BPE, offer monopolar or bipolar transurethral resection of the prostate (TURP), monopolar transurethral vaporisation of the prostate (TUVP) or holmium laser enucleation of the prostate (HoLEP). Perform HoLEP at a centre specialising in the technique, or with mentorship arrangements in place.
- 1.5.3 Offer transurethral incision of the prostate (TUIP) as an alternative to other types of surgery (see 1.5.2) to men with a prostate estimated to be smaller than 30 g.
- 1.5.4 Only offer open prostatectomy as an alternative to TURP, TUVP or HoLEP (see 1.5.2) to men with prostates estimated to be larger than 80 g.
- 1.5.5 If offering surgery for managing voiding LUTS presumed secondary to BPE, do not offer minimally invasive treatments (including transurethral needle ablation [TUNA], transurethral microwave thermotherapy [TUMT], high-intensity focused ultrasound [HIFU], transurethral ethanol ablation of the prostate [TEAP] and laser coagulation) as an alternative to TURP, TUVP or HoLEP (see 1.5.2).
- 1.5.6 If offering surgery for managing voiding LUTS presumed secondary to BPE, only consider offering botulinum toxin injection into the prostate as part of a randomised controlled trial.

- 1.5.7 If offering surgery for managing voiding LUTS presumed secondary to BPE, only consider offering laser vaporisation techniques, bipolar TUVP or monopolar or bipolar transurethral vaporisation resection of the prostate (TUVRP) as part of a randomised controlled trial that compares these techniques with TURP.

1.6 *Surgery for storage symptoms*

- 1.6.1 If offering surgery for storage symptoms, consider offering only to men whose storage symptoms have not responded to conservative management and drug treatment. Discuss the alternatives of containment or surgery. Inform men being offered surgery that effectiveness, side effects and long-term risk are uncertain.
- 1.6.2 If considering offering surgery for storage LUTS, refer men to a urologist to discuss:
- the surgical and non-surgical options appropriate for their circumstances and
 - the potential benefits and limitations of each option, particularly long-term results.
- 1.6.3 Consider offering cystoplasty to manage detrusor overactivity only to men whose symptoms have not responded to conservative management or drug treatment and who are willing and able to self-catheterise. Before offering cystoplasty, discuss serious complications (that is, bowel disturbance, metabolic acidosis, mucus production and/or mucus retention in the bladder, urinary tract infection and urinary retention).
- 1.6.4 Consider offering bladder wall injection with botulinum toxin⁴ to men with detrusor overactivity only if their symptoms have not responded to conservative management and drug treatments and the man is willing and able to self-catheterise.

⁴ At the time of publication (May 2010), botulinum toxin did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.

- 1.6.5 Consider offering implanted sacral nerve stimulation to manage detrusor overactivity only to men whose symptoms have not responded to conservative management and drug treatments.
- 1.6.6 Do not offer myectomy to men to manage detrusor overactivity.
- 1.6.7 Consider offering intramural injectables, implanted adjustable compression devices and male slings to manage stress urinary incontinence only as part of a randomised controlled trial.
- 1.6.8 Consider offering urinary diversion to manage intractable urinary tract symptoms only to men whose symptoms have not responded to conservative management and drug treatments, and if cystoplasty or sacral nerve stimulation are not clinically appropriate or are unacceptable to the patient.
- 1.6.9 Consider offering implantation of an artificial sphincter to manage stress urinary incontinence only to men whose symptoms have not responded to conservative management and drug treatments.

1.7 *Treating urinary retention*

- 1.7.1 Immediately catheterise men with acute retention.
- 1.7.2 Offer an alpha blocker to men for managing acute urinary retention before removal of the catheter.
- 1.7.3 Consider offering self- or carer-administered intermittent urethral catheterisation before offering indwelling catheterisation for men with chronic urinary retention.
- 1.7.4 Carry out a serum creatinine test and imaging of the upper urinary tract in men with chronic urinary retention (residual volume greater than 1 litre or presence of a palpable/percussable bladder).
- 1.7.5 Catheterise men who have impaired renal function or hydronephrosis secondary to chronic urinary retention.

- 1.7.6 Consider offering intermittent or indwelling catheterisation before offering surgery in men with chronic urinary retention.
- 1.7.7 Consider offering surgery on the bladder outlet without prior catheterisation to men who have chronic urinary retention and other bothersome LUTS but no impairment of renal function or upper renal tract abnormality.
- 1.7.8 Consider offering intermittent self- or carer-administered catheterisation instead of surgery in men with chronic retention who you suspect have markedly impaired bladder function.
- 1.7.9 Continue or start long-term catheterisation in men with chronic retention for whom surgery is unsuitable.
- 1.7.10 Provide active surveillance (post void residual volume measurement, upper tract imaging and serum creatinine testing) to men with non-bothersome LUTS secondary to chronic retention who have not had their bladder drained.

1.8 *Alternative and complementary therapies*

- 1.8.1 Do not offer homeopathy, phytotherapy or acupuncture for treating LUTS in men.

1.9 *Providing information*

- 1.9.1 Ensure that, if appropriate, men's carers are informed and involved in managing their LUTS and can give feedback on treatments.
- 1.9.2 Make sure men with LUTS have access to care that can help with:
- their emotional and physical conditions **and**
 - relevant physical, emotional, psychological, sexual and social issues.
- 1.9.3 Provide men with storage LUTS (particularly incontinence) containment products at point of need, and advice about relevant support groups.

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/CG97 – click on ‘How this guidance was produced’.

How this guideline was developed

NICE commissioned the National Clinical Guideline Centre: 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 about how NICE clinical guidelines are developed on the NICE website (www.nice.org.uk/guidelinesprocess). A booklet, ‘How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS’ (fourth edition, published 2009), is available from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N1739).

3 Implementation

NICE has developed tools to help organisations implement this guidance (see www.nice.org.uk/CG97).

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 *Multichannel cystometry*

What is the clinical and cost effectiveness of multichannel cystometry in improving patient-related outcomes in men considering bladder outlet surgery?

Why this is important

This research would clarify whether this test could improve the outcome of surgery. By identifying which patients had bladder outlet obstruction, it could improve the chance of a good outcome from surgery. The study should be a randomised controlled trial comparing multichannel cystometry before surgery with no intervention in men waiting to have bladder outlet surgery.

4.2 *Catheterisation*

What are the clinical and cost effectiveness and associated adverse events of intermittent catheterisation compared with indwelling catheterisation (suprapubic or urethral) for men with voiding difficulty and chronic retention of urine?

Why this is important

The number of patients in this group is steadily increasing as the population ages and more radical prostatectomies are carried out. Current practice varies widely across the UK with no established standard of good practice. This research could establish the best approach to management in these men and so bring more effective, patient-focused treatment that is more cost effective. The study should be a randomised controlled trial comparing intermittent catheterisation, indwelling suprapubic and indwelling urethral catheterisation. Outcomes of interest would be quality of life, healthcare resource use and

adverse events (including leakage, skin breakdown, infection, erosion and death).

4.3 *Products for men with urinary incontinence*

What are the clinical and cost effectiveness and associated adverse events of absorbent pads compared with sheath collectors for men with urinary incontinence?

Why this is important

The number of patients in this group is steadily increasing as more radical prostatectomies are carried out and the population ages. Current practice varies widely across the UK with no established standard of good practice. This research could establish the best approach to continence management in these men and so provide more effective, patient-focused treatment that is more cost effective. In current non-specialist practice, bladder training is often not considered, and adequate diagnosis and hence optimal treatment of bladder dysfunction is often not implemented. Evidence-based guidance on selecting the most suitable containment product and its subsequent management will increase the quality of life of patients, use skilled nurse/carer resources more efficiently and reduce the costs of waste of unsuitable or sub-optimal product use. The study should be a randomised controlled trial reporting symptom severity, quality of life, changes in measured leakage and occurrence of adverse events.

4.4 *Laser vaporisation techniques*

What is the clinical and cost effectiveness of laser vaporisation techniques compared with TURP in men with moderate to severe bothersome LUTS considering surgery for bladder outlet obstruction?

Why this is important

The evidence base is inadequate to give clear guidance. This research would help plan future guidance on the use of laser vaporisation techniques for men with LUTS who are having surgery. The potential advantages of reduced blood loss, shorter hospital stay and earlier return to normal activities make laser vaporisation techniques attractive to both patients and healthcare

providers, although there is uncertainty about the degree of symptom improvement and improvement in quality of life in the short and longer term. The study should be a randomised controlled trial.

4.5 *Male slings*

In men with mild to moderate post prostatectomy urinary incontinence, what is the clinical and cost effectiveness of a male sling or an implanted adjustable compression device, when assessed by symptom severity, quality of life, changes in measured leakage and occurrence of adverse events?

Why this is important

Guidance is needed on the most suitable surgical options for this growing group of men who, until recently, have had no acceptable treatment option other than insertion of an artificial urinary sphincter. Many men consider insertion of an artificial sphincter to be too invasive and too prone to complication or failure, and therefore depend on containment alone for control of their urinary incontinence. A number of new interventions have been devised but it is uncertain which of these offers the best outcomes. This research could lead to clear recommendations and effective treatment for the majority of these men. A randomised controlled trial is recommended, comparing up to three current interventions: retrobulbar 'non-compressive' male sling, adjustable compression sling, and implanted adjustable compression device.

5 Other versions of this guideline

5.1 *Full guideline*

The full guideline, 'The management of lower urinary tract symptoms in men' 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 www.rcplondon.ac.uk/clinical-standards/ncgc and our website (www.nice.org.uk/guidance/CG97/FullGuidance).

5.2 Quick reference guide

A quick reference guide for healthcare professionals is available from www.nice.org.uk/guidance/CG97/QuickRefGuide

For printed copies, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk (quote reference number N2141).

5.3 'Understanding NICE guidance'

A summary for patients and carers ('Understanding NICE guidance') is available from www.nice.org.uk/guidance/CG97/PublicInfo

For printed copies, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk (quote reference number N2142).

We encourage NHS and voluntary sector organisations to use text from this booklet in their own information about male lower urinary tract symptoms.

6 Related NICE guidance

Published

- Prostate cancer: diagnosis and treatment. NICE clinical guideline 58 (2008). Available from www.nice.org.uk/guidance/CG58
- Laparoscopic prostatectomy for benign prostatic obstruction. NICE interventional procedure guidance 275 (2008). Available from www.nice.org.uk/guidance/IPG275
- Suburethral synthetic sling insertion for stress urinary incontinence in men. NICE interventional procedure guidance 256 (2008). Available from www.nice.org.uk/guidance/IPG256
- Insertion of extraurethral (non-circumferential) retropubic adjustable compression devices for stress urinary incontinence in men. NICE interventional procedure guidance 224 (2007). Available from www.nice.org.uk/guidance/IPG224
- Urinary incontinence: the management of urinary incontinence in women. NICE clinical guideline 40 (2006). Available from www.nice.org.uk/guidance/CG40

- Potassium-titanyl-phosphate (KTP) laser vaporisation of the prostate for benign prostatic obstruction. NICE interventional procedure guidance 120 (2005). Available from www.nice.org.uk/guidance/IPG120
- Referral guidelines for suspected cancer. NICE clinical guideline 27 (2005). Available from www.nice.org.uk/guidance/CG27
- Sacral nerve stimulation for urge incontinence and urgency-frequency. NICE interventional procedure 64 (2004). Available from www.nice.org.uk/guidance/IPG64
- Holmium laser prostatectomy. NICE interventional procedure guidance 17 (2003). Available from www.nice.org.uk/guidance/IPG17
- Transurethral radiofrequency needle ablation of the prostate. NICE interventional procedure guidance 15 (2003). Available from www.nice.org.uk/guidance/IPG15
- Transurethral electrovaporisation of the prostate. NICE interventional procedure guidance 14 (2003). Available from www.nice.org.uk/guidance/IPG14

7 Updating the guideline

NICE clinical guidelines are updated so that recommendations take into account important new information. New evidence is checked 3 years after publication, and healthcare professionals and patients are asked for their views; we use this information to decide whether all or part of a guideline needs updating. 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

Professor Christopher Chapple (Chair)

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Ms Angela Billington

Director of Continence Services, Bournemouth and Poole Community Health Services

Mr Paul Joachim

Patient Member, Chair of the Patient Advisory board, The Bladder and Bowel Foundation (InContact)

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Urology Specialist Nurse Practitioner, Central Manchester Hospitals NHS Trust (until February 2009)

Mr Roy Latham

Patient Member, Member of Royal College of Physicians Patient Carer Network

Mr Malcolm Lucas

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Research Fellow (from May 2009)

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Judith Thornton

Technical Lead

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, secondary care, lay, public health and industry.

Peter Robb

Consultant ENT Surgeon, Epsom & St Helier University Hospitals and The Royal Surrey County NHS Trusts

Christine Hine

Consultant in Public Health (Acute Commissioning), Bristol and South Gloucestershire primary care trusts

Greg Rogers

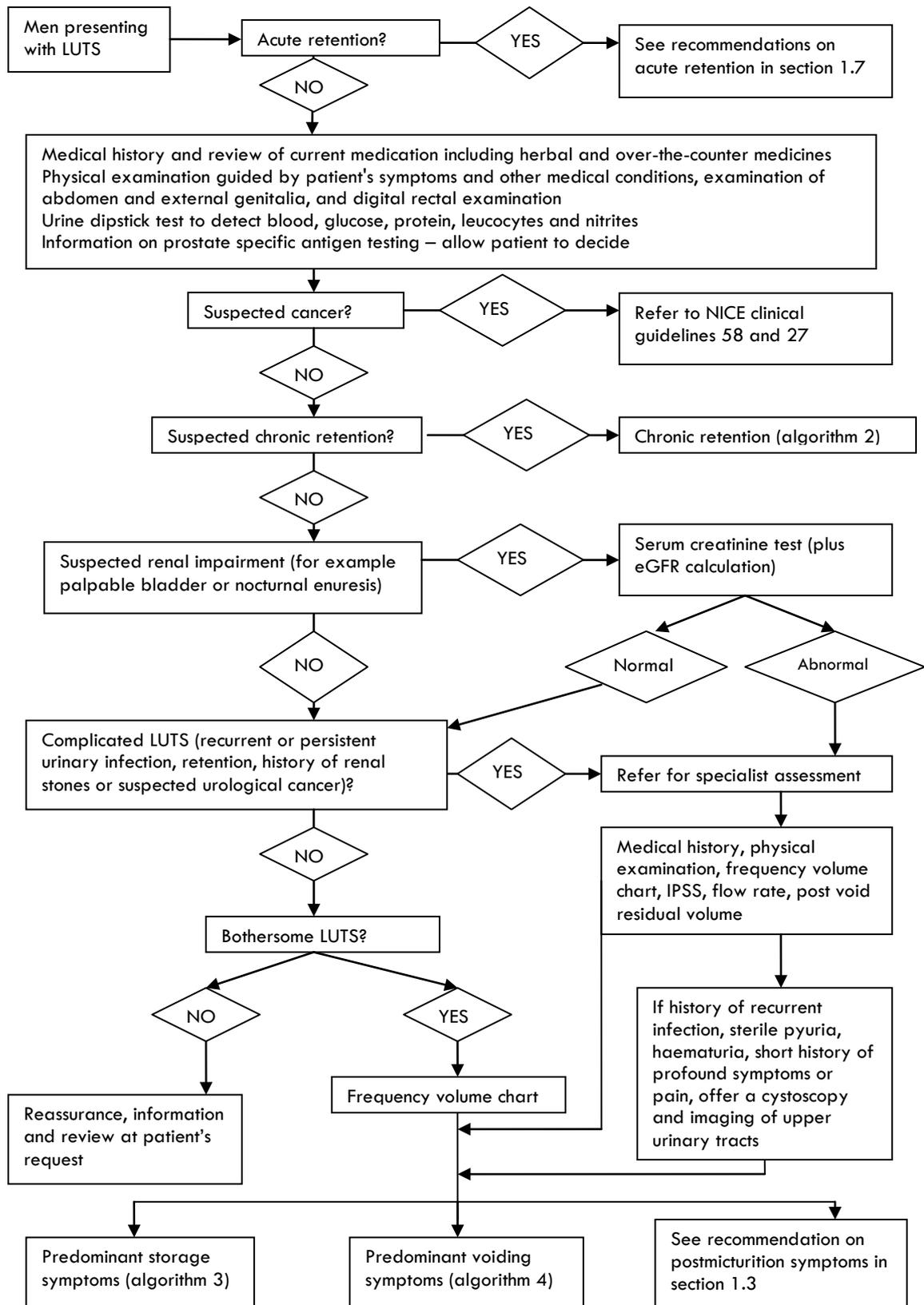
GP (Margate), Clinical Commissioner for Long Term Conditions Eastern and Coastal Kent PCT, and Primary Care Long Term Condition Advisor for South East Coast SHA

Sarah Fishburn

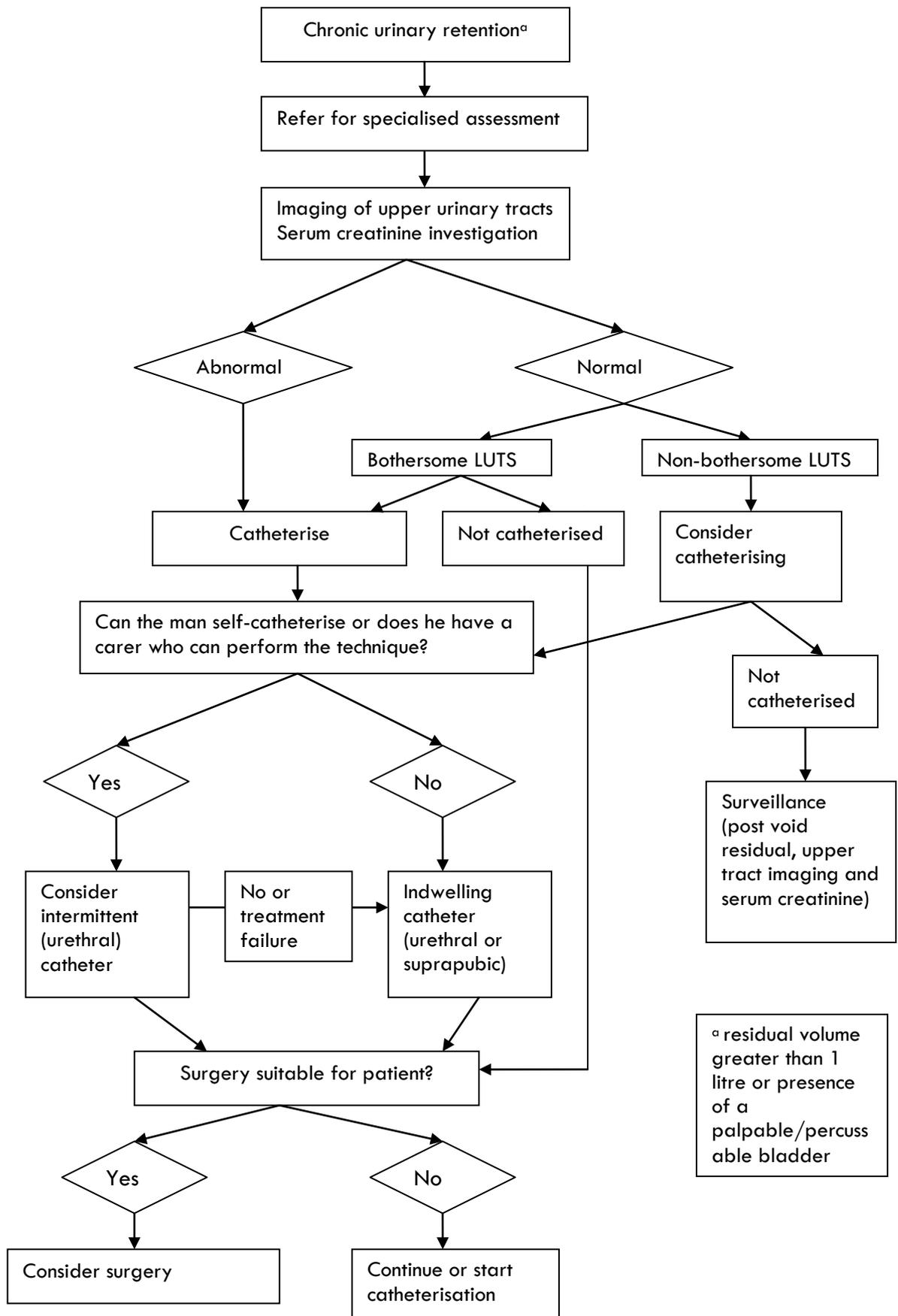
Lay Member

Appendix C: The algorithms

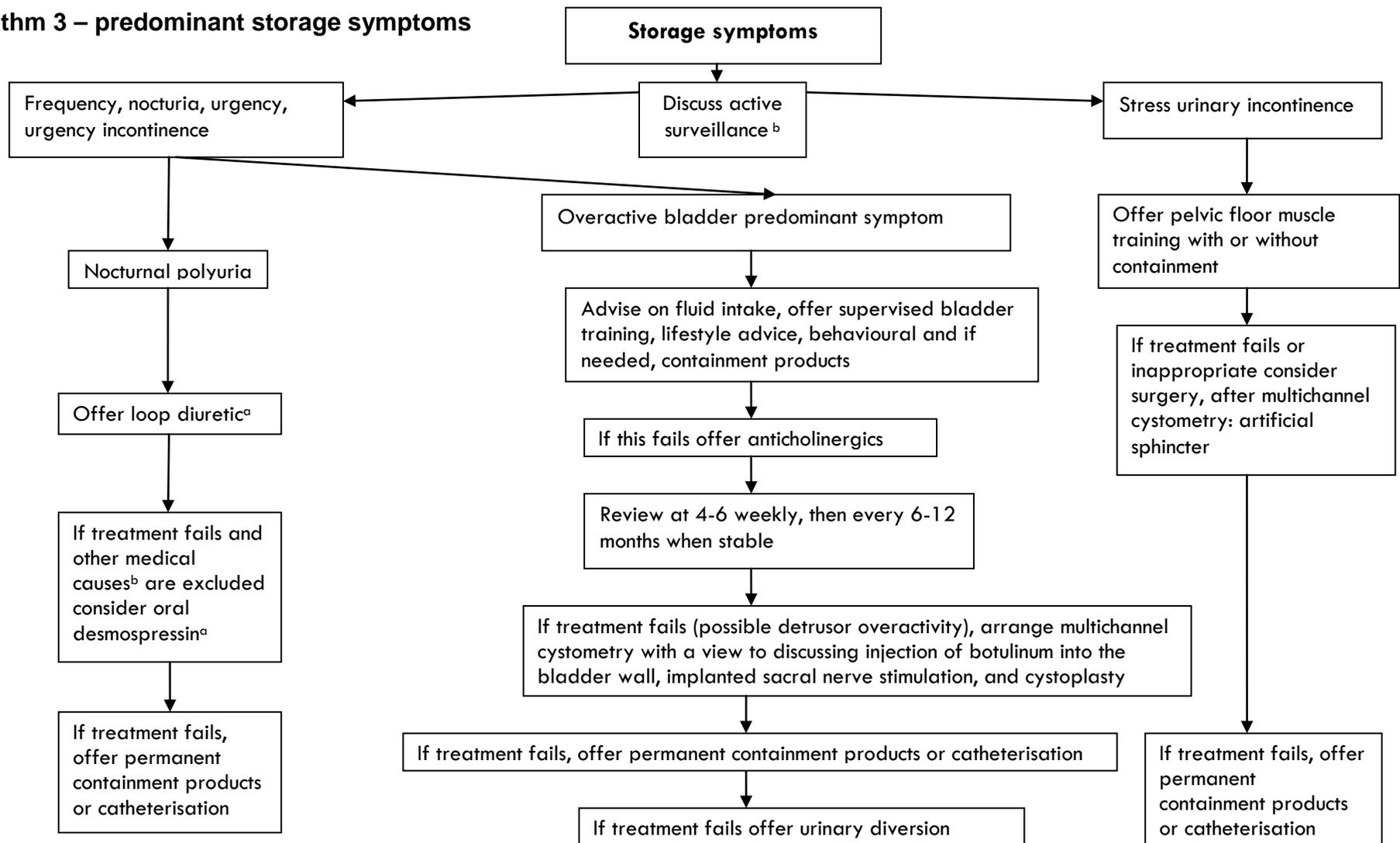
Algorithm 1 – diagnosis



Algorithm 2 – chronic urinary retention (specialist care)



Algorithm 3 – predominant storage symptoms



^a At the time of publication (May 2010) desmopressin and loop diuretics did not have UK marketing authorisations for this indication. Informed consent should be obtained and documented. Consult the summary of product characteristics for the contraindications and precautions.

^b Medical conditions that can cause nocturnal polyuria symptoms include diabetes mellitus, diabetes insipidus, adrenal insufficiency, hypercalcaemia, liver failure, polyuric renal failure, chronic heart failure, obstructive apnoea, dependent oedema, pyelonephritis, chronic venous stasis, and sickle cell anaemia. Medications that can cause nocturnal polyuria symptoms include calcium channel blockers, diuretics, and selective serotonin reuptake inhibitor (SSRI) antidepressants.

Algorithm 4 – predominant voiding symptoms

