Urinary incontinence in women:

the management of urinary incontinence in women

NICE guideline

Draft for consultation, February 2013

If you wish to comment on this version of the guideline, please be aware that all the supporting information and evidence for the 2013 recommendations is contained in the full version of the 2013 guideline. Evidence for the 2006 recommendations is in the full version of the 2006 guideline.

Contents

Introduction

Urinary incontinence (UI) is a common symptom that can affect women of all ages, with a wide range of severity and nature. While rarely life-threatening, incontinence may seriously influence the physical, psychological and social wellbeing of affected individuals. The impact on the families and carers of women with UI may be profound, and the resource implications for the health service considerable.

UI is defined by the International Continence Society as 'the complaint of any involuntary leakage of urine'. UI may occur as a result of a number of abnormalities of function of the lower urinary tract or as a result of other illnesses, which tend to cause leakage in different situations.

- Stress UI is involuntary urine leakage on effort or exertion or on sneezing or coughing.
- Urge UI is involuntary urine leakage accompanied or immediately preceded by urgency (a sudden compelling desire to urinate that is difficult to defer).
- Mixed UI is involuntary urine leakage associated with both urgency and exertion, effort, sneezing or coughing.

Overactive bladder syndrome (OAB) is defined as urgency that occurs with or without urge UI and usually with frequency and nocturia. OAB that occurs with urge UI is known as 'OAB wet'. OAB that occurs without urge UI is known as 'OAB dry'. These combinations of symptoms are suggestive of the urodynamic finding of detrusor overactivity, but can be the result of other forms of urethrovesical dysfunction.

Since the publication of the 2006 guideline, new methods of managing urinary incontinence have become available on the NHS. Botulinum toxin A and sacral nerve stimulation are also now more commonly used for treating OAB symptoms. Synthetic tape procedures have become increasing popular for treating stress urinary incontinence, and there have been reported

improvements in their effectiveness and advances in the types of procedure offered since 2006. Updated guidance is needed to reflect these changes.

New recommendations for 2013 sit alongside the original recommendations from the 2006 guideline. It is important to emphasise that all of the 2006 recommendations are just as relevant and important now as they were when they were originally published.

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

This guideline recommends some drugs for indications for which they do not have a UK marketing authorisation at the date of publication, if there is good evidence to support that use. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. The patient (or those with authority to give consent on their behalf) should provide informed consent, which should be documented. See the General Medical Council's Good practice in prescribing medicines – guidance for doctors for further information. Where recommendations have been made for the use of drugs outside their licensed indications ('off-label use'), these drugs are marked with a footnote in the recommendations.

Patient-centred care

This guideline offers best practice advice on the care of women with urinary incontinence.

Patients and healthcare professionals have rights and responsibilities as set out in the NHS Constitution for England – all NICE guidance is written to reflect these. Treatment and care should take into account individual needs and preferences. Patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If someone does not have the capacity to make decisions, healthcare professionals should follow the Department of Health's advice on consent, the code of practice that accompanies the Mental Capacity Act and the supplementary code of practice on deprivation of liberty safeguards. In Wales, healthcare professionals should follow advice on consent from the Welsh Government.

NICE has produced guidance on the components of good patient experience in adult NHS services. All healthcare professionals should follow the recommendations in Patient experience in adult NHS services.

Strength of recommendations

Some recommendations can be made with more certainty than others. The Guideline Development Group makes a recommendation based on the trade-off between the benefits and harms of an intervention, taking into account the quality of the underpinning evidence. For some interventions, the Guideline Development Group is confident that, given the information it has looked at, most patients would choose the intervention. The wording used in the recommendations in this guideline denotes the certainty with which the recommendation is made (the strength of the recommendation).

For all recommendations, NICE expects that there is discussion with the patient about the risks and benefits of the interventions, and their values and preferences. This discussion aims to help them to reach a fully informed decision (see also 'Patient-centred care').

Interventions that must (or must not) be used

We usually use 'must' or 'must not' only if there is a legal duty to apply the recommendation. Occasionally we use 'must' (or 'must not') if the consequences of not following the recommendation could be extremely serious or potentially life threatening.

Interventions that should (or should not) be used – a 'strong' recommendation

We use 'offer' (and similar words such as 'refer' or 'advise') when we are confident that, for the vast majority of patients, an intervention will do more good than harm, and be cost effective. We use similar forms of words (for example, 'Do not offer…') when we are confident that an intervention will not be of benefit for most patients.

Interventions that could be used

We use 'consider' when we are confident that an intervention will do more good than harm for most patients, and be cost effective, but other options may be similarly cost effective. The choice of intervention, and whether or not to have the intervention at all, is more likely to depend on the patient's values

and preferences than for a strong recommendation, and so the healthcare professional should spend more time considering and discussing the options with the patient.

Recommendation wording in guideline updates

NICE began using this approach to denote the strength of recommendations in guidelines that started development after publication of the 2009 version of 'The guidelines manual' (January 2009). This does not apply to any recommendations shaded in grey and ending **[2006]** (see 'Update information' box below for details about how recommendations are labelled). In particular, recommendations labelled **[2006]** using the word 'consider' should not necessarily be assumed to be 'weak' recommendations.

Update information

This guidance is a partial update of NICE clinical guideline 40 (published October 2006) and will replace it.

New recommendations have been added on managing urinary incontinence in women.

You are invited to comment on the new and updated recommendations in this guideline. These are marked as **[2013]** if the evidence has been reviewed but no change has been made to the recommendation, or **[new 2013]** if the evidence has been reviewed and the recommendation has been added or updated.

You are also invited to comment on recommendations that NICE proposes to delete from the 2006 guideline, because either the evidence has been reviewed and the recommendations have been updated, or NICE has updated other relevant guidance and has replaced the original recommendations. Appendix A sets out these recommendations and includes details of replacement recommendations. Where there is no replacement recommendation, an explanation for the proposed deletion is given.

Where recommendations are shaded in grey and end **[2006]**, the evidence has not been reviewed since the original guideline. We will not be able to accept comments on these recommendations. Yellow shading in these recommendations indicates where wording changes have been made for the purposes of clarification only.

Where recommendations are shaded in grey and end **[2006, amended 2013]**, the evidence has not been reviewed but changes have been made to the recommendation wording that change the meaning (for example, because of equalities duties or a change in the availability of drugs, or incorporated guidance has been updated). These changes are marked with yellow shading, and a footnote has been added to the recommendation explaining the reason for the change. We will not be able to accept comments on these

recommendations.

Changes to recommendations labelled **[2006, amended 2013]** or **[2006]** are described in appendix A for information.

The original NICE guideline and supporting documents are available here.

Key priorities for implementation

The following recommendations have been identified as priorities for implementation.

History-taking and physical examination

- At the initial clinical assessment, the woman's urinary incontinence (UI) should be categorised as stress UI (SUI), mixed UI, or urgency UI/overactive bladder (OAB). Initial treatment should be started on this basis. In mixed UI, treatment should be directed towards the predominant symptom. **[2006] [1.1.1]**

Assessment of pelvic floor muscles

- Routine digital assessment to confirm pelvic floor muscle contraction should be undertaken before the use of supervised pelvic floor muscle training for the treatment of UI. **[2006, amended 2013] [1.1.4]**

Bladder diaries

- Bladder diaries should be used in the initial assessment of women with UI or OAB. Women should be encouraged to complete a minimum of 3 days of the diary covering variations in their usual activities, such as both working and leisure days. **[2006] [1.1.17]**

Percutaneous posterior tibial nerve stimulation

- Do not routinely offer percutaneous posterior tibial nerve stimulation (PTNS) for OAB. Only consider PTNS if antimuscarinic drug treatment has not worked adequately and the woman does not want botulinum toxin A (BoNT-A) or sacral nerve stimulation (SNS). **[new 2013] [1.5.4]**

Absorbent products, urinals and toileting aids

- Absorbent products, hand held urinals and toileting aids should not be considered as a treatment for UI. They should be used only as:
  - a coping strategy pending definitive treatment
  - an adjunct to ongoing therapy

- long-term management of UI only after treatment options have been explored. **[2006] [1.6.1]**

General principles when using antimuscarinic drugs

- Before antimuscarinic drug treatment starts, discuss with women:
  - the likelihood of success and associated common adverse effects, **and**
  - the frequency and route of administration, **and**
  - that some adverse effects such as dry mouth and constipation may indicate that treatment is working, **and**
  - that they may not see the full benefits until they have been taking the treatment for 4 weeks. **[new 2013] [1.7.2]**

Choosing antimuscarinic drugs

- Offer the following choices first to women with OAB or mixed UI:
  - oxybutynin (immediate release), **or**
  - tolterodine (immediate release), **or**
  - propiverine (immediate release). **[new 2013] [1.7.8]**
- If the first-line treatment for OAB or mixed UI is not well tolerated, offer one of the following as a second-line antimuscarinic drug treatment:
  - trospium (immediate release), or
  - oxybutynin (extended release), or
  - darifenacin, or
  - an alternative immediate release drug (from recommendation 1.7.8). **[new 2013] [1.7.9]**

The multidisciplinary team

- Offer invasive therapy for OAB and SUI symptoms only after a clinical review by the MDT. **[new 2013] [1.8.2]**

Surgical approaches for SUI

- When offering a surgical procedure discuss with the woman the risks and benefits of the different treatment options for SUI using the information in appendix B. **[new 2013] [1.10.1]**

1 Recommendations

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.

1.1 Assessment and investigation

History-taking and physical examination

1.1.1 At the initial clinical assessment, the woman's urinary incontinence (UI) should be categorised as stress UI (SUI), mixed UI, or urgency UI/overactive bladder (OAB). Initial treatment should be started on this basis. In mixed UI, treatment should be directed towards the predominant symptom. **[2006]**

1.1.2 If stress incontinence is the predominant symptom in mixed UI, discuss with the woman the benefit of conservative management including antimuscarinic drugs before offering surgery. **[new 2013]**

1.1.3 The clinical assessment should seek to identify relevant predisposing and precipitating factors and other diagnoses that may require referral for additional investigation and treatment. **[2006]**

Assessment of pelvic floor muscles

1.1.4 Routine digital assessment to confirm pelvic floor muscle contraction should be undertaken before the use of supervised pelvic floor muscle training for the treatment of UI. **[2006, amended 2013]**

Assessment of prolapse

1.1.5 Women with UI who have symptomatic prolapse that is visible at or below the vaginal introitus should be referred to a specialist. **[2006]**

Urine testing

1.1.6 A urine dipstick test should be undertaken in all women presenting with UI to detect the presence of blood, glucose, protein, leucocytes and nitrites in the urine. **[2006]**

1.1.7 Women with symptoms of urinary tract infection (UTI) whose urine tests positive for both leucocytes and nitrites should have a midstream urine specimen sent for culture and analysis of antibiotic

sensitivities. An appropriate course of antibiotic treatment should be prescribed pending culture results. **[2006]**

1.1.8 Women with symptoms of UTI whose urine tests negative for either leucocytes or nitrites should have a midstream urine specimen sent for culture and analysis of antibiotic sensitivities. The healthcare professional should consider the prescription of antibiotics pending culture results. **[2006]**

1.1.9 Women who do not have symptoms of UTI, but whose urine tests positive for both leucocytes and nitrites, should not be offered antibiotics without the results of midstream urine culture. **[2006]**

1.1.10 Women who do not have symptoms of UTI and whose urine tests negative for either leucocytes or nitrites are unlikely to have UTI and should not have a urine sample sent for culture. **[2006]**

Assessment of residual urine

1.1.11 The measurement of post-void residual volume by bladder scan or catheterisation should be performed in women with symptoms suggestive of voiding dysfunction or recurrent UTI. **[2006]**

1.1.12 A bladder scan should be used in preference to catheterisation on the grounds of acceptability and lower incidence of adverse events. **[2006]**

1.1.13 Women who are found to have a palpable bladder on bimanual or abdominal examination after voiding should be referred to a specialist. **[2006]**

Referral

1.1.14 Women with UI who have any of the following should receive an urgent referral[1]:

- microscopic haematuria in women aged 50 years and older
- visible haematuria
- recurrent or persisting UTI associated with haematuria in women aged 40 years and older
- suspected malignant mass arising from the urinary tract. **[2006]**

1.1.15 In women with UI, further indications for consideration for referral to a specialist service include:

- persisting bladder or urethral pain
- clinically benign pelvic masses
- associated faecal incontinence
- suspected neurological disease
- symptoms of voiding difficulty
- suspected urogenital fistulae
- previous continence surgery
- previous pelvic cancer surgery
- previous pelvic radiation therapy[2]. **[2006]**

[1] NICE's 'Referral guidelines for suspected cancer' (http://guidance.nice.org.uk/CG27) define urgent referral as the patient being seen within the national target for urgent referrals (currently 2 weeks).

[2] For further indications for consideration for referral, see recommendations 1.1.5 and 1.1.13.

Symptom scoring and quality-of-life assessment

1.1.16 The following incontinence-specific quality-of-life scales are recommended when therapies are being evaluated: ICIQ, BFLUTS, I-QOL, SUIQQ, UISS, SEAPI-QMM, ISI and KHQ[3]. **[2006]**

Bladder diaries

1.1.17 Bladder diaries should be used in the initial assessment of women with UI or OAB. Women should be encouraged to complete a minimum of 3 days of the diary covering variations in their usual activities, such as both working and leisure days. **[2006]**

Pad testing

1.1.18 Pad tests are not recommended in the routine assessment of women with UI. **[2006]**

Urodynamic testing

1.1.19 Do not perform multi-channel cystometry, ambulatory urodynamics or videourodynamics before starting conservative treatment. **[2006, amended 2013]**

1.1.20 After undertaking a detailed clinical history and examination, perform multi-channel filling and voiding cystometry before surgery in women who have:

- symptoms of OAB leading to a clinical suspicion of detrusor overactivity, **or**
- symptoms suggestive of voiding dysfunction **or** anterior compartment prolapse, **or**
- had previous surgery for stress incontinence. **[2006, amended 2013]**

[3] See full guideline for details.

1.1.21 Do not perform multi-channel filling and voiding cystometry in the small group of women where pure SUI is diagnosed based on a detailed clinical history and examination. **[2006, amended 2013]**

1.1.22 Consider ambulatory urodynamics or videourodynamics if the diagnosis is unclear after conventional urodynamics. **[2006, amended 2013]**

Other tests of urethral competence

1.1.23 The Q-tip, Bonney, Marshall and Fluid-Bridge tests are not recommended in the assessment of women with UI. **[2006]**

Cystoscopy

1.1.24 Cystoscopy is not recommended in the initial assessment of women with UI alone. **[2006]**

Imaging

1.1.25 Imaging (magnetic resonance imaging, computed tomography, X-ray) is not recommended for the routine assessment of women with UI. Ultrasound is not recommended other than for the assessment of residual urine volume. **[2006]**

1.2 Lifestyle interventions

Caffeine

1.2.1 A trial of caffeine reduction is recommended for the treatment of women with OAB. **[2006]**

Fluid intake

1.2.2 Consider advising modification of high or low fluid intake in women with UI or OAB. **[2006]**

Weight

1.2.3 Women with UI or OAB who have a body mass index greater than 30 should be advised to lose weight. **[2006]**

1.3 Physical therapies

Pelvic floor muscle training

1.3.1 A trial of supervised pelvic floor muscle training of at least 3 months' duration should be offered as first-line treatment to women with stress or mixed UI. **[2006]**

1.3.2 Pelvic floor muscle training programmes should comprise at least eight contractions performed three times per day. **[2006]**

1.3.3 Perineometry or pelvic floor electromyography as biofeedback should not be used as a routine part of pelvic floor muscle training. **[2006]**

1.3.4 If pelvic floor muscle training is beneficial, an exercise programme should be continued. **[2006]**

Therapeutic stimulation

1.3.5 Electrical stimulation should not routinely be used in the treatment of women with OAB. **[2006]**

1.3.6 Electrical stimulation should not routinely be used in combination with pelvic floor muscle training. **[2006]**

1.3.7 Electrical stimulation and/or biofeedback should be considered in women who cannot actively contract pelvic floor muscles in order to aid motivation and adherence to therapy. **[2006]**

1.4 Behavioural therapies

Bladder training

1.4.1 Bladder training lasting for a minimum of 6 weeks should be offered as first-line treatment to women with urgency or mixed UI. **[2006]**

Multicomponent behavioural therapy

1.4.2 If women do not achieve satisfactory benefit from bladder training programmes, the combination of an antimuscarinic agent with

bladder training should be considered if frequency is a troublesome symptom. **[2006]**

1.5 Neuromodulation

Within this guideline neuromodulation covers transcutaneous electrical nerve stimulation (TENS) [surface electrodes placed above the sacrum], transcutaneous posterior tibial nerve stimulation [surface electrodes placed above the posterior tibial nerve] and percutaneous posterior tibial nerve stimulation (PTNS) [needles inserted close to the posterior tibial nerve].

Transcutaneous electrical nerve stimulation

1.5.1 Do not offer transcutaneous electrical nerve stimulation (TENS) to treat OAB in women. **[new 2013]**

Transcutaneous posterior tibial nerve stimulation

1.5.2 Explain that there is insufficient evidence to recommend the use of transcutaneous posterior tibial nerve stimulation to treat OAB. **[new 2013]**

1.5.3 Do not offer transcutaneous posterior tibial nerve stimulation for OAB. **[new 2013]**

Percutaneous posterior tibial nerve stimulation

1.5.4 Do not routinely offer percutaneous posterior tibial nerve stimulation (PTNS) for OAB. Only consider PTNS if antimuscarinic drug treatment has not worked adequately and the woman does not want botulinum toxin A (BoNT-A) or sacral nerve stimulation (SNS). **[new 2013]**

1.6 Non-therapeutic interventions

Absorbent products, urinals and toileting aids

1.6.1 Absorbent products, hand held urinals and toileting aids should not be considered as a treatment for UI. They should be used only as:

- a coping strategy pending definitive treatment

- an adjunct to ongoing therapy
- long-term management of UI only after treatment options have been explored. **[2006]**

Catheters

1.6.2 Bladder catheterisation (intermittent or indwelling urethral or suprapubic) should be considered for women in whom persistent urinary retention is causing incontinence, symptomatic infections, or renal dysfunction, and in whom this cannot otherwise be corrected. Healthcare professionals should be aware, and explain to women, that the use of indwelling catheters in urgency UI may not result in continence. **[2006]**

Intermittent urethral catheters

1.6.3 Intermittent urethral catheterisation should be used for women with urinary retention who can be taught to self-catheterise or who have a carer who can perform the technique. **[2006]**

Indwelling urethral catheters

1.6.4 Careful consideration should be given to the impact of long-term indwelling urethral catheterisation. The practicalities, benefits and risks should be discussed with the patient or, if appropriate, her carer. Indications for the use of long-term indwelling urethral catheters for women with UI include:

- chronic urinary retention in women who are unable to manage intermittent self-catheterisation
- skin wounds, pressure ulcers or irritations that are being contaminated by urine
- distress or disruption caused by bed and clothing changes
- where a woman expresses a preference for this form of management. **[2006]**

Indwelling suprapubic catheters

1.6.5 Indwelling suprapubic catheters should be considered as an alternative to long-term urethral catheters. Healthcare professionals should be aware, and explain to women, that they may be associated with lower rates of symptomatic UTI, 'bypassing', and urethral complications than indwelling urethral catheters. **[2006]**

Products to prevent leakage

1.6.6 Intravaginal and intraurethral devices are not recommended for the routine management of UI in women. Women should not be advised to consider such devices other than for occasional use when necessary to prevent leakage, for example during physical exercise. **[2006]**

Complementary therapies

1.6.7 Complementary therapies are not recommended for the treatment of UI or OAB. **[2006]**

Preventive use of conservative therapies

1.6.8 Pelvic floor muscle training should be offered to women in their first pregnancy as a preventive strategy for UI. **[2006]**

Women who choose not to have further treatment

1.6.9 If a woman chooses not to have further treatment for urinary incontinence:

- offer her advice about managing urinary symptoms, **and**
- explain that if she changes her mind at a later date she can book a review appointment to discuss past tests and interventions and reconsider her treatment options. **[new 2013]**

1.7 Pharmaceutical treatment

General principles when using antimuscarinic drugs

1.7.1 When offering antimuscarinic drugs to treat OAB always take account of:

- the woman's coexisting conditions (for example, poor bladder emptying)
- use of other existing medication affecting the total anticholinergic load
- risk of adverse effects. **[new 2013]**

1.7.2 Before antimuscarinic drug treatment starts, discuss with women:

- the likelihood of success and associated common adverse effects, **and**
- the frequency and route of administration, **and**
- that some adverse effects such as dry mouth and constipation may indicate that treatment is working, **and**
- that they may not see the full benefits until they have been taking the treatment for 4 weeks. **[new 2013]**

1.7.3 Prescribe the lowest recommended dose when starting a new antimuscarinic drug treatment. **[new 2013]**

1.7.4 If a woman's antimuscarinic drug treatment is effective and well tolerated, do not change the dose or drug. **[new 2013]**

Choosing antimuscarinic drugs

1.7.5 Flavoxate, propantheline and imipramine should not be used for the treatment of UI or OAB in women. **[2006]**

1.7.6 Do not offer oxybutynin (immediate release) to frail older women[4]. **[new 2013]**

1.7.7 Do not offer the following to treat OAB or mixed UI:

- solifenacin, **or**
- propiverine (extended release), **or**
- fesoterodine, **or**
- trospium (extended release), **or**
- tolterodine (extended release). **[new 2013]**

1.7.8 Offer the following choices first to women with OAB or mixed UI:

- oxybutynin (immediate release), **or**
- tolterodine (immediate release), **or**
- propiverine (immediate release). **[new 2013]**

1.7.9 If the first-line treatment for OAB or mixed UI is not well tolerated, offer one of the following as a second-line antimuscarinic drug treatment:

- trospium (immediate release), **or**
- oxybutynin (extended release), **or**

[4] The GDG defined 'frail older women' as those with multiple comorbidities, functional impairments such as walking or dressing difficulties and any degree of cognitive impairment.

- darifenacin, **or**
- an alternative immediate release drug (from recommendation 1.7.8). **[new 2013]**

1.7.10 Offer a transdermal antimuscarinic only to women unable to tolerate oral medication. **[new 2013]**

Reviewing antimuscarinic drug treatment

1.7.11 Offer a face-to-face or telephone review 4 weeks after the start of each new antimuscarinic drug treatment. Ask the woman if she is satisfied with the therapy and:

- if improvement is optimal, continue treatment, **or**
- if there is no or suboptimal improvement or intolerable adverse effects change the dose, or try an alternative antimuscarinic drug, and review again 4 weeks later. **[new 2013]**

1.7.12 Offer review before 4 weeks if the adverse events are intolerable. **[new 2013]**

1.7.13 Consider referral if the woman does not want to try another antimuscarinic drug, but would like to have specialist treatment. **[new 2013]**

1.7.14 Consider a further face-to-face or telephone review if a woman's condition stops responding optimally to treatment after an initial successful 4 week review. **[new 2013]**

1.7.15 Review women who remain on long-term drug treatment for UI or OAB annually in primary care (or every 6 months for women over 75). **[new 2013]**

1.7.16 If antimuscarinic drug treatment is not successful, discuss the options for further management (non-therapeutic interventions and invasive therapy) with the woman:

- If she would like to think about invasive therapy, arrange urodynamic investigation to determine whether detrusor overactivity is present.
- If she does not wish to explore invasive therapy see recommendation 1.6.9. **[new 2013]**

Desmopressin

1.7.17 The use of desmopressin may be considered specifically to reduce nocturia in women with UI or OAB who find it a troublesome symptom. Use particular caution in people with cystic fibrosis and avoid in those over 65 years of age or with cardiovascular disease or hypertension. **[2006, amended 2013]**

Duloxetine

1.7.18 Duloxetine is not recommended as a first-line treatment for women with predominant stress UI. Duloxetine should not routinely be used as a second-line treatment for women with stress UI, although it

may be offered as second-line therapy if women prefer pharmacological to surgical treatment or are not suitable for surgical treatment. If duloxetine is prescribed, women should be counselled about its adverse effects. **[2006]**

Oestrogens

1.7.19 Systemic hormone replacement therapy is not recommended for the treatment of UI. **[2006]**

1.7.20 Intravaginal oestrogens are recommended for the treatment of OAB symptoms in postmenopausal women with vaginal atrophy. **[2006]**

1.8 The multidisciplinary team

1.8.1 The multidisciplinary team (MDT) for urinary incontinence should be drawn from community and secondary or tertiary care and include as a minimum:

- a specialist surgeon
- a specialist nurse
- a specialist physiotherapist. **[new 2013]**

1.8.2 Offer invasive therapy for OAB and SUI symptoms only after a clinical review by the MDT. **[new 2013]**

1.8.3 Discuss the recommendations made by the MDT at the clinical review with the woman. **[new 2013]**

1.8.4 Any woman wishing to consider surgical treatment for UI should be informed about the benefits and risks of surgical and non-surgical options. Counselling should include consideration of the woman's child-bearing wishes. **[2006]**

1.9 Invasive procedures for OAB

Botulinum toxin A

1.9.1 After MDT review, offer bladder wall injection with BoNT-A[5] to women with proven detrusor overactivity that has not responded to conservative management (including antimuscarinic drug therapy). **[new 2013]**

1.9.2 Use 200 units when offering BoNT-A. **[new 2013]**

1.9.3 Discuss the risks and benefits of treatment with BoNT-A with women before seeking informed consent, covering:

- the likelihood of being symptom free or having a large reduction in symptoms
- the risk of clean intermittent catheterisation and the potential for it to be required for variable lengths of time after the effect of the injections have worn off
- the absence of evidence on long-term risks, duration of effect, and the number of injections required for optimum treatment

[5] At the time of consultation (February 2013), botulinum toxin type A did not have a UK marketing authorisation for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. The patient should provide informed consent, which should be documented. See the General Medical Council's Good practice in prescribing medicines – guidance for doctors for further information.

- the risk of adverse effects including an increased risk of urinary tract infection. **[new 2013]**

1.9.4 Start treatment with BoNT-A only if women:

- have been trained in clean intermittent catheterisation and have performed the technique successfully, **and**
- are able and willing to perform clean intermittent catheterisation on a regular basis for as long as required. **[new 2013]**

1.9.5 Offer specialist follow-up at 4 to 6 months to women having treatment for OAB with BoNT-A or sooner if symptoms return. **[new 2013]**

1.9.6 Tell women how to self-refer for prompt specialist review if symptoms return following a BoNT-A procedure. Offer repeat treatment as necessary. **[new 2013]**

1.9.7 Do not offer botulinum toxin B to women with proven detrusor overactivity. **[2013]**

Sacral nerve stimulation

1.9.8 Offer sacral nerve stimulation (SNS) to women after MDT review if:

- their OAB has not responded to conservative management including antimuscarinic drugs, **and**
- they are unable to perform clean intermittent catheterisation. **[new 2013]**

1.9.9 Consider SNS after MDT review if a woman's OAB has not responded to conservative management (including antimuscarinic drugs) and BoNT-A. **[new 2013]**

1.9.10 Discuss the long-term implications of SNS with women including:

- the need for peripheral nerve evaluation test stimulation and probability of the test's success

- the risk of failure
- the long-term commitment
- the need for surgical revision
- the adverse effects. **[new 2013]**

1.9.11 Tell women how to self-refer for prompt specialist review if symptoms return following an SNS procedure. Offer repeat treatment as necessary. **[new 2013]**

Augmentation cystoplasty

1.9.12 Augmentation cystoplasty for the management of idiopathic detrusor overactivity should be restricted to women who have not responded to conservative treatments and who are willing and able to self-catheterise. Preoperative counselling for the woman or her carer should include common and serious complications: bowel disturbance, metabolic acidosis, mucus production and/or retention in the bladder, UTI and urinary retention. The small risk of malignancy occurring in the augmented bladder should also be discussed. Provide life-long follow-up. **[2006, amended 2013]**

Urinary diversion

1.9.13 Urinary diversion should be considered for a woman with OAB only when conservative treatments have failed, and if BoNT-A, sacral nerve stimulation and augmentation cystoplasty are not appropriate or are unacceptable to her. Provide life-long follow-up. **[2006, amended 2013]**

1.10 Surgical approaches for SUI

1.10.1 When offering a surgical procedure discuss with the woman the risks and benefits of the different treatment options for SUI using the information in appendix B. **[new 2013]**

1.10.2 If conservative treatment for SUI has failed, offer:

- synthetic mid-urethral tape (see recommendations 1.10.3–7) **or**

- open colposuspension (see recommendation 1.10.8), **or**
- autologous rectus fascial sling (see recommendation 1.10.9). **[new 2013]**

Synthetic tapes

1.10.3 When offering a mid-urethral tape procedure, surgeons should:

- use one of the following procedures and devices for which there is current high quality evidence of efficacy and safety[6]:
  - TVT or Advantage for a 'bottom-up' retropubic approach
  - TVTO for an 'inside-out' transobturator approach
  - Obtape, Monarc or Obtryx Halo for an 'outside-in' transobturator approach
- only use a device that they have been trained to use (see recommendations in section 1.11)
- use type 1 macroporous polypropylene tape
- consider using a tape coloured for high visibility, for ease of insertion and revision. **[new 2013]**

[6] The guideline only recommends the use of tapes with proven efficacy based on robust randomised controlled trial evidence. However technological advances are frequent, therefore the choice of tape should include devices that are shown in future clinical trials to have equal or improved efficacy at equal or lower cost.

1.10.4 If women are offered a procedure involving the transobturator approach, make them aware of the lack of long-term outcome data**. [new 2013]**

1.10.5 Refer women to an alternative surgeon if their chosen procedure is not available from the consulting surgeon. **[new 2013]**

1.10.6 Use 'top-down' retropubic tape procedures only as part of a clinical trial. Refer to single-incision sub-urethral short tape insertion for stress urinary incontinence (NICE interventional procedure guidance 262) for guidance on single incision procedures. **[new 2013]**

1.10.7 Offer a follow-up appointment, (including vaginal examination) to all women who have had continence surgery within 6 months. **[new 2013]**

Colposuspension

1.10.8 Laparoscopic colposuspension is not recommended as a routine procedure for the treatment of stress UI in women. The procedure should be performed only by an experienced laparoscopic surgeon working in a multidisciplinary team with expertise in the assessment and treatment of UI. **[2006]**

Biological slings

1.10.9 Anterior colporrhaphy, needle suspensions, paravaginal defect repair and the Marshall–Marchetti–Krantz procedure are not recommended for the treatment of stress UI. **[2006]**

Intramural bulking agents

1.10.10 Consider intramural bulking agents (silicone, carbon-coated zirconium beads or hyaluronic acid/dextran copolymer) for the management of stress UI if conservative management has failed. Women should be made aware that:

- repeat injections may be required to achieve efficacy

- efficacy diminishes with time
- efficacy is inferior to that of retropubic suspension or sling.**[2006, amended 2013]**

1.10.11 Autologous fat and polytetrafluoroethylene used as intramural bulking agents are not recommended for the treatment of stress UI. **[2006]**

Artificial urinary sphincter

1.10.12 In view of the associated morbidity, the use of an artificial urinary sphincter should be considered for the management of stress UI in women only if previous surgery has failed. Life-long follow-up is recommended. **[2006]**

Considerations following unsuccessful invasive SUI procedures

1.10.13 The MDT should review all patients whose invasive SUI procedure has failed. **[new 2013]**

1.10.14 Women whose primary surgical procedure for SUI has failed and who wish to consider further treatment should:

- be referred to tertiary care for assessment by a specialised multidisciplinary team, **and**
- have repeat urodynamic testing including additional tests such as imaging and urethral function studies. **[new 2013]**

1.10.15 If a woman does not want continued invasive SUI procedures, offer advice as described in recommendation 1.6.9. **[new 2013]**

1.11 Maintaining and measuring expertise and standards for practice

1.11.1 Surgery for UI should be undertaken only by surgeons who have received appropriate training in the management of UI and associated disorders or who work within a multidisciplinary team with this training, and who regularly carry out surgery for UI in women (see recommendation 1.10.3). **[2006]**

1.11.2 Training should be sufficient to develop the knowledge and generic skills documented below. Knowledge should include the:

- specific indications for surgery
- required preparation for surgery including preoperative investigations
- outcomes and complications of proposed procedure
- anatomy relevant to procedure
- steps involved in procedure
- alternative management options
- likely postoperative progress.

Generic skills should include:

- the ability to explain procedures and possible outcomes to patients and family and to obtain informed consent
- the necessary hand–eye dexterity to complete the procedure safely and efficiently, with appropriate use of assistance
- the ability to communicate with and manage the operative team effectively
- the ability to prioritise interventions
- the ability to recognise when to ask for advice from others
- a commitment to multidisciplinary team working. **[2006]**

1.11.3 Training should include competence in cystourethroscopy. **[2006]**

1.11.4 Operative competence of surgeons undertaking surgical procedures to treat UI or OAB in women should be formally assessed by trainers through a structured process. **[2006]**

1.11.5 Surgeons who are already carrying out procedures for UI should be able to demonstrate that their training, experience and current practice equates to the standards laid out for newly trained surgeons. **[2006]**

1.11.6 Surgery for UI or OAB in women should be undertaken only by surgeons who carry out a sufficient case load to maintain their skills. An annual workload of at least 20 cases of each primary procedure for stress UI is recommended. Surgeons undertaking fewer than five cases of any procedure annually should do so only with the support of their clinical governance committee; otherwise referral pathways should be in place within clinical networks. **[2006]**

1.11.7 There should be a nominated clinical lead within each surgical unit with responsibility for continence and prolapse surgery. The clinical lead should work within the context of an integrated continence service. **[2006]**

1.11.8 A national audit of continence surgery should be undertaken. **[2006]**

1.11.9 Surgeons undertaking continence surgery should maintain careful audit data and submit their outcomes to national registries such as those held by the British Society of Urogynaecology (BSUG) and British Association of Urological Surgeons Section of Female and Reconstructive Urology (BAUS-SFRU). **[2006]**

2 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.

2.1 Pelvic floor muscle training

What is the effectiveness of different pelvic floor muscle training regimens in the management of women with overactive bladder (OAB) symptoms and to whom should it be offered?

Why this is important

For many women with urinary incontinence symptoms, management of their condition will take place predominantly in primary and community care. Pelvic floor muscle training may be their only experience of therapeutic intervention. It is not currently known whether different pelvic floor muscle training regimens have an impact on treatment outcomes. It is also not known whether other factors also have an impact on its effectiveness. These factors include the way that the training is offered, the technique that is taught, the intensity and frequency of training, and the length of time that pelvic floor muscle training is continued. Since pelvic floor muscle training is widely used in clinical practice, robust evaluation is required to identify whether these or other factors have an important impact on patient centred outcomes.

2.2 Neuromodulation

What is the comparative effectiveness and cost-effectiveness of transcutaneous electrical nerve stimulation (TENS) of the sacral nerve roots, and transcutaneous and percutaneous posterior tibial nerve stimulation for the treatment of OAB?

Why this is important

TENS can be applied either over the sacrum or over the posterior tibial nerve to modulate the sacral nerve supply to the bladder. The treatment uses surface electrodes which the patient can carry out in their own home.

Percutaneous posterior tibial nerve stimulation involves the introduction of a needle in the region of the posterior tibial nerve near the ankle, and at present is carried out in clinics in secondary care. Currently it is offered widely as a conservative treatment for OAB without adequate evidence that it is effective. Although this is a relatively low cost treatment, both the equipment and staff time have a cost implication, and because it has been widely used in conservative management this has large resource consequences for the NHS. Robust evidence is required to establish whether it is a cost-effective option relative to other conservative therapies for all women or for a selected group of patients who are unsuitable for or have unsuccessful botulinum toxin A or antimuscarinic drug treatment.

2.3 Botulinum toxin A

What is the long-term effectiveness, optimal dose and optimal frequency of repeat therapy of botulinum toxin A (BoNT-A) in women with OAB based on detrusor overactivity including risk of adverse events such as urinary infection?

Why is this important

There are currently no trials looking at long-term outcomes, optimal dose, optimal frequency and long-term adverse effects of BoNT-A for women with OAB. Further research into these outcomes would have an impact on future updates of key recommendations within the guideline and would impact on how resources are used within urinary incontinence services. Effective treatment with BoNT-A may require repeated injections to remain effective but the frequency of these is not reported in the current data. BoNT-A has the potential to cause incomplete bladder emptying resulting in the need for women to perform catheterisation indefinitely. This not only has financial implications but catheterisation and the morbidity associated with it will not always be acceptable to women. Additionally there are currently no data on whether repeated BoNT-A injections alter bladder function.

2.4 Sequence of invasive OAB procedures

What is the effectiveness and what is the optimum sequence of treatment with BoNT-A and sacral nerve stimulation (SNS) for the treatment of OAB after failed conservative (including drug) treatment?

Why is this important

It is not currently known which treatment option, either BoNT-A or SNS, is the most effective in the medium and long-term for women with OAB in whom initial treatment, including antimuscarinic drugs, has failed. The initial outlay for SNS is high but when successful it appears to be effective. BoNT-A also has a high failure rate but a lower outlay and it is not yet understood the cost threshold (in terms of treatment cycles or length of follow-up) at which BoNT-A is likely to be the less cost-effective option compared with SNS. Currently, funding for SNS is on an individual basis due to its high cost, leading to geographical inequalities in access. A head-to-head longitudinal study of these 2 treatments would determine both which should be offered first and at what point in the treatment pathway. Such studies have not been done. This evidence could reduce inequalities in access to treatment. In subsequent NICE guidance evidence would be available to inform recommendations on the treatment pathway and at which point in the treatment pathway for OAB each of these options should be offered. It would also provide more robust information to patients about the risk of adverse events and support women's choice about whether to proceed with treatment.

2.5 Predictors of tape failure

What are the effects of the following predictors on tape failure?

- Age per decade (outcome defined as recurrent stress urinary incontinence)
- Lower maximum urethral closure pressure (MUCP) (reference not stated)
- Secondary surgery versus primary surgery (patient reported outcome)
- Higher maximal flow rate

- Concurrent pelvic organ prolapse surgery
- Nocturia versus no nocturia (patient reported outcome)
- Urgency versus no urgency (patient reported outcome)
- Pad weight (per 10 g)
- Previous UI surgery versus no surgery
- Q-tip maximum straining less than 30 degrees, yes versus no
- Urge score (per 10 points)
- Urgency symptoms versus no urgency symptoms
- More than 20 procedures for each surgeon versus first 10 procedures for each surgeon (outcome 1)
- More than 20 procedures for each surgeon versus first 10 procedures for each surgeon (outcome 2)
- General anaesthesia versus local anaesthesia
- Body mass index over 35 versus 30 or less (patient reported outcome)
- MUCP 31 or more versus 30 or less (objective outcome)
- Primary surgery versus secondary surgery (objective outcome)
- Preoperative anticholinergic medication use versus no use

Why is this important

The factors identified for this research question are thought anecdotally by surgeons to have an impact on the outcome of tape surgery but there is little robust evidence in the literature. Certain patient factors such as younger age and increased weight are thought to produce a higher chance of recurrent symptoms. Similarly, the effect of previous incontinence surgery, concomitant prolapse surgery and the 'learning curve' of the surgeon are all thought to have adverse effects on outcome (including an increased chance of urgency incontinence). In addition there is little robust evidence regarding the effect of previous urgency incontinence, higher maximum flow rates, nocturia or pre-operative use of anticholinergics on the occurrence of post-operative urgency and bladder overactivity (DO). It would be useful to be able to individualise treatment by understanding these risks in more detail.

3 Other information

3.1 Scope and how this guideline was developed

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover.

How this guideline was developed

NICE commissioned the National Collaborating Centre for Women's and Children's Health to develop this guideline. The Centre established a Guideline Development Group (see section 4), which reviewed the evidence and developed the recommendations.

The methods and processes for developing NICE clinical guidelines are described in The guidelines manual.

3.2 Related NICE guidance

Details are correct at the time of consultation on the guideline (February 2013). Further information is available on the NICE website.

Published

- Urinary incontinence in neurological disease. NICE clinical guideline 148 (2012).
- Infection control. NICE clinical guideline 139 (2012).
- Patient experience in adult NHS services. NICE clinical guideline 138 (2012).
- Medicines adherence. NICE clinical guidance 76 (2011).
- Lower urinary tract symptoms. NICE clinical guideline 97 (2010).
- Faecal incontinence. NICE clinical guideline 49 (2007).
- Percutaneous posterior tibial nerve stimulation for overactive bladder syndrome. NICE interventional procedure guidance 362 (2010).

- Laparoscopic augmentation cystoplasty (including clam cystoplasty). NICE interventional procedure guidance 326 (2009).
- Single-incision sub-urethral short tape insertion for stress urinary incontinence in women. NICE interventional procedure guidance 262 (2008).
- Insertion of biological slings for stress urinary incontinence. NICE interventional procedure guidance 154 (2006).
- Intramural urethral bulking procedures for stress urinary incontinence. NICE interventional procedure guidance 138 (2005).
- Insertion of extraurethral (non-circumferential) retropubic adjustable compression devices for stress urinary incontinence in women. NICE interventional procedure guidance 133 (2005).
- Sacral nerve stimulation for urge incontinence and urgency-frequency. NICE interventional procedure guidance 64 (2004).

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Appendix A: Recommendations from NICE clinical guideline 40 (2006) that have been deleted or amended

Recommendations to be deleted

The table shows recommendations from 2006 that NICE proposes deleting in the 2013 update. The right-hand column gives the replacement recommendation, or explains the reason for the deletion if there is no replacement recommendation.

Recommendation in 2006 guideline	Comment
In women with UI who also have cognitive impairment, prompted and timed voiding toileting programmes are recommended as strategies for reducing leakage episodes (Recommendation [1.2.2.3] in 2006 guideline).	No recommendation
Immediate release non-proprietary oxybutynin should be offered to women with OAB or mixed UI as first-line antimuscarinic drug treatment, if bladder training has been ineffective. If immediate release oxybutynin is not well tolerated, darifenacin, solifenacin, tolterodine, trospium or an extended release or transdermal formulation of oxybutynin should be considered as alternatives. Women should be counselled about the adverse effects of antimuscarinic drugs. (Recommendation [1.2.4.1] in 2006 guideline).	Replaced by: 1.7.8 Offer the following choices first to women with OAB or mixed UI: • oxybutynin (immediate release), **or** • tolterodine (immediate release), **or** • propiverine (immediate release). [new 2013]
An early treatment review should be undertaken following any change in antimuscarinic drug therapy. (Recommendation [1.2.4.2] in 2006 guideline).	Replaced by: 1.7.11 Offer a face-to-face or telephone review 4 weeks after the start of each new antimuscarinic drug treatment. Ask the woman if she is satisfied with the therapy and: • if improvement is optimal, continue treatment **or** • if there is no or suboptimal improvement or intolerable adverse effects change the dose, or try an alternative antimuscarinic drug, and review again 4 weeks later. [new 2013]
Propiverine should be considered as an option to treat frequency of urination in women with OAB, but is not	No recommendation

recommended for the treatment of UI. (Recommendation [1.2.4.3] in 2006 guideline).	
Bladder wall injection with botulinum toxin A should be used in the treatment of idiopathic detrusor overactivity only in women who have not responded to conservative treatments and who are willing and able to self-catheterise. Women should be informed about the lack of long-term data. There should be special arrangements for audit or research. The use of botulinum toxin A for this indication is outside the UK marketing authorisation for the product. Informed consent to treatment should be obtained and documented. (Recommendation [1.3.2.4] in 2006 guideline).	Replaced by: 1.9.3 Discuss the risks and benefits of treatment with BoNT-A with women before seeking informed consent, covering: • the likelihood of being symptom free or having a large reduction in symptoms • the risk for clean intermittent catheterisation and the potential for it to be required for variable lengths of time after the effect of the injections have worn off • the absence of evidence on long-term risks, duration of effect, and the number of injections required for optimum treatment • the risk of adverse effects of treatment with BoNT-A including an increased risk of urinary tract infection. [new 2013]
Botulinum toxin B is not recommended for the treatment of women with idiopathic OAB. (Recommendation [1.3.2.5] in 2006 guideline).	Replaced by: 1.9.7 Do not offer botulinum toxin B to women with proven detrusor overactivity. [2013]
Sacral nerve stimulation is recommended for the treatment of UI due to detrusor overactivity in women who have not responded to conservative treatments. Women should be offered sacral nerve stimulation on the basis of their response to preliminary percutaneous nerve evaluation. Life-long follow-up is recommended. (Recommendation [1.3.2.1] in 2006 guideline).	Replaced by: 1.9.8 Offer sacral nerve stimulation (SNS) to women after MDT review if: • their OAB has not responded to conservative management including antimuscarinic drugs, **and** • they are unable to perform clean intermittent catheterisation. [new 2013]
Retropubic mid-urethral tape procedures using a 'bottom-up' approach with macroporous (type 1) polypropylene meshes are recommended as treatment options for stress UI if conservative management has failed. Open colposuspension and autologous rectus fascial sling are the recommended alternatives when clinically appropriate. (Recommendation [1.3.3.1] in 2006 guideline).	Replaced by: 1.10.2 If conservative treatment for SUI has failed, offer: • synthetic mid-urethral tape (see recommendations 1.10.3–7) or • open colposuspension (see recommendation 1.10.8), or • autologous rectus fascial sling (see recommendation 1.10.9). [new 2013]
Synthetic slings using a retropubic 'top-down' or a transobturator foramen approach are recommended as alternative treatment options for stress UI	Replaced by: 1.10.3 When offering a mid-urethral tape procedure, surgeons should:

if conservative management has failed, provided women are made aware of the lack of long-term outcome data. (Recommendation [1.3.3.2] in 2006 guideline).	• use one of the following procedures and devices for which there is current high quality evidence of efficacy and safety[7]: – TVT or Advantage for a 'bottom-up' retropubic approach – TVTO for an 'inside-out' transobturator approach – Obtape, Monarc or Obtryx Halo for an 'outside-in' transobturator approach • only use a device that they have been trained to use (see recommendations in section 1.11) • use type 1 macroporous polypropylene tape • consider using a tape coloured for high visibility, for ease of insertion and revision. [new 2013]
Synthetic slings using materials other than polypropylene that are not of a macroporous (type 1) construction are not recommended for the treatment of stress UI. (Recommendation [1.3.3.3] in 2006 guideline).	Replaced by: 1.10.3 When offering a mid-urethral tape procedure, surgeons should: • use one of the following procedures and devices for which there is current high quality evidence of efficacy and safety[8]: – TVT or Advantage for a 'bottom-up' retropubic approach – TVTO for an 'inside-out' transobturator approach – Obtape, Monarc or Obtryx Halo for an 'outside-in' transobturator approach • only use a device that they have been trained to use (see recommendations in section 1.11) • use type 1 macroporous polypropylene tape • consider using a tape coloured for high visibility, for ease of insertion and revision. [new 2013]

[7] The guideline only recommends the use of tapes with proven efficacy based on robust RCT evidence. However technological advances are frequent, therefore the choice of tape should include devices that are shown in future clinical trials to have equal or improved efficacy at equal or lower cost.

[8] The guideline only recommends the use of tapes with proven efficacy based on robust RCT evidence. However technological advances are frequent, therefore the choice of tape should include devices that are shown in future clinical trials to have equal or improved efficacy at equal or lower cost.

Amended recommendation wording (change to meaning)

Recommendations have been labelled **[2006, amended 2013]** if the evidence has not been reviewed but changes have been made (indicated by highlighted text) that change the meaning.

Recommendation in 2006 guideline	**Recommendation in current guideline**	**Reason for change**
Routine digital assessment of pelvic floor muscle contraction should be undertaken before the use of supervised pelvic floor muscle training for the treatment of UI. (Recommendation [1.1.2.1] in 2006 guideline)	Replaced by: 1.1.4 Routine digital assessment to confirm pelvic floor muscle contraction should be undertaken before the use of supervised pelvic floor muscle training for the treatment of UI. [2006, amended 2013]	"to confirm" has been made to improve clarity and implementation.
The use of multichannel cystometry, ambulatory urodynamics or videourodynamics is not recommended before starting conservative treatment. (Recommendation [1.10.1.1] in 2006 guideline)	Replaced by: 1.1.19 Do not perform multi-channel cystometry, ambulatory urodynamics or videourodynamics before starting conservative treatment. **[2006, amended 2013]**	'Do not perform' has been used to amend the action of the recommendation. This update has been made to improve clarity and implementation.
Multichannel filling and voiding cystometry is recommended in women before surgery for UI if: • there is clinical suspicion of detrusor overactivity, or • there has been previous surgery for stress incontinence or anterior compartment prolapse,or • there are symptoms suggestive of voiding dysfunction. • Ambulatory urodynamics or videourodynamics may also be considered in these circumstances. (Recommendation [1.1.10.2] in 2006 guideline)	Replaced by: 1.1.20 After undertaking a detailed clinical history and examination, perform multi-channel filling and voiding cystometry before surgery in women who have: • symptoms of OAB leading to a clinical suspicion of detrusor overactivity, **or** • symptoms suggestive of voiding dysfunction **or** anterior compartment prolapse, **or** • had previous surgery for stress incontinence. **[2006, amended 2013]** 1.1.22 Consider ambulatory urodynamics or videourodynamics if the diagnosis is unclear after conventional urodynamics. **[2006, amended 2013]**	The criteria for multi-channel filling and voiding cystometry has been updated to improve clarity and implementation. The recommendation for ambulatory urodynamics has additional text to clarify that this procedure should take place following unclear outcomes from an initial urodynamic assessment.
For the small group of	Replaced by:	Explanatory text was

women with a clearly defined clinical diagnosis of pure stress UI, the use of multichannel cystometry is not routinely recommended. (Recommendation [1.1.10.3] in 2006 guideline)	1.1.21 Do not perform multi-channel filling and voiding cystometry in the small group of women where pure SUI is diagnosed based on a detailed clinical history and examination. **[2006, amended 2013]**	added to the recommendation on multichannel filling and voiding cystometry particularly because establishing a diagnosis of pure SUI requires a detailed clinical history and examination. This has been added to the recommendation to avoid women being offered surgical treatment for SUI without the identification of any symptoms of OAB
The use of desmopressin may be considered specifically to reduce nocturia in women with UI or OAB who find it a troublesome symptom. However, the use of desmopressin for nocturia in women with idiopathic UI is outside the UK marketing authorisation for the product. Informed consent to treatment should be obtained and documented. (Recommendation [1.2.4.5] in 2006 guideline)	Replaced by: 1.7.17 The use of desmopressin may be considered specifically to reduce nocturia in women with UI or OAB who find it a troublesome symptom. Use particular caution in people with cystic fibrosis and avoid in those over 65 years of age or with cardiovascular disease or hypertension. [2006, amended 2013]	The cautionary note for the use of desmopressin has been updated to reflect current clinical practice. The updated caution is taken from the current BNF indications for use.
Augmentation cystoplasty for the management of idiopathic detrusor overactivity should be restricted to women who have not responded to conservative treatments and who are willing and able to self-catheterise. Preoperative counselling should include common and serious complications: bowel disturbance, metabolic acidosis, mucus production and/or retention in the bladder, UTI and urinary retention. The small risk of malignancy occurring in the augmented bladder should also be discussed. Life-long follow-up is recommended.	Replaced by: 1.9.12 Augmentation cystoplasty for the management of idiopathic detrusor overactivity should be restricted to women who have not responded to conservative treatments and who are willing and able to self-catheterise. Preoperative counselling for the woman or her carer should include common and serious complications: bowel disturbance, metabolic acidosis, mucus production and/or retention in the bladder, UTI and urinary retention. The small risk of malignancy occurring in the augmented bladder should	"for the woman or her carer" has been added to the recommendation. This update has been made to reflect the equality of treatment of some women who would be required to catheterise. "Provide life-long follow-up" has been added to give a direct instruction and to match the recommendation for urinary diversion.

(Recommendation [1.3.2.2] in 2006 guideline).	also be discussed. Provide life-long follow-up. **[2006, amended 2013]**	
Urinary diversion should be considered for a woman with OAB only when conservative treatments have failed, and if sacral nerve stimulation and augmentation cystoplasty are not appropriate or are unacceptable to her. Life-long follow-up is recommended. (Recommendation [1.3.2.3] in 2006 guideline).	Replaced by: 1.9.13 Urinary diversion should be considered for a woman with OAB only when conservative treatments have failed, and if BoNT-A, sacral nerve stimulation and augmentation cystoplasty are not appropriate or are unacceptable to her. Provide life-long follow-up. **[2006, amended 2013]**	"Provide life-long follow-up" has been added to give a direct instruction and to match the recommendation for augmentation cystoplasty.
Intramural bulking agents (glutaraldehyde cross-linked collagen, silicone, carbon-coated zirconium beads or hyaluronic acid/dextran copolymer) should be considered for the management of stress UI if conservative management has failed. Women should be made aware that: • repeat injections may be required to achieve efficacy • efficacy diminishes with time • efficacy is inferior to that of retropubic suspension or sling. (Recommendation [1.3.3.4] in 2006 guideline).	1.10.10 Consider intramural bulking agents (silicone, carbon-coated zirconium beads or hyaluronic acid/dextran copolymer) for the management of stress UI if conservative management has failed. Women should be made aware that: • repeat injections may be required to achieve efficacy • efficacy diminishes with time efficacy is inferior to that of retropubic suspension or sling. [2006, amended 2013]	Glutaraldehyde cross-linked collagen has been removed from this recommendation. This update has been made as collagen for this procedure is no longer undertaken in the UK.

Changes to recommendation wording for clarification only (no change to meaning)

Recommendation numbers in current guideline	Comment
1.1.1, 1.4.1, 1.6.2	All instances of 'urge incontinence' have been changed to 'urgency. This is to reflect the current terminology. Where an abbreviation is used in the recommendation, the first instance also will have the full term spelt out.
1.1.15	Footnote added to cross reference related recommendations
1.11.1	Cross reference added to link to another relevant recommendations

Appendix B: Information to facilitate discussion of risks and benefits of treatments for women with stress urinary incontinence

Risks and benefits at <1 year				Risks and benefits at >1 year				
Procedure	**Continent < 1 year**	**Perioperative events – tissue injury***		**Continent > 1 year**	**Erosion**	**Retention**	**Voiding dysfunction**	**De novo overactive bladder symptoms**
Retropubic "bottom-up"	67% to 90% (24 studies)	3% to 6% (29 studies)	**2 years**	74% to 95% (7 studies)	0% to 4% (4 studies)	0% to 13% (4 studies)	0 % to 18% (1 study)	0% to 25% (4 studies)
			3 years	81% to 92% (5 studies)	0% (2 studies)	0% (1 study)	No studies	0% to 23% (2 studies)
			5 years	69 to 85% (4 studies)	0% to 1% (4 studies)	0% to 5% (2 studies)	0% to 1% (1 study)	0% to 18% (3 studies)
			7 years	70% to 85% (2 studies)	0% to 1% (2 studies)	No studies	No studies	0% to 17% (1 study)
			10 years	56% to 85% (2 studies)	No studies	No studies	No studies	0% to 17% (1 study)
Trans-obturator "outside-in"	60% to 75% (10 studies)	3% to 12% (14 studies)	**2 years**	80% (1 study)	0% (1 study)	0 to 4% (1 study)	No studies	0 to 7% (1 study)
			3 years	No studies	No studies	No studies	No studies	No studies
			5 years	No studies	No studies	No studies	No studies	No studies
			7 years	No studies	No studies	No studies	No studies	No studies
			10 years	No studies	No studies	No studies	No studies	No studies
Trans-obturator "inside-out"	62% to 73% (19 studies)	1% to 3% (14 studies)	**2 years**	87% (1 study)	No studies	No studies	No studies	No studies
			3 years	75% to 84% (2 studies)	0% to 1% (1 study)	No studies	No studies	No studies
			5 years	69% to 89% (2 studies	0% to 1% (2 studies)	No studies	No studies	0% (1 study)
			7 years	No studies	No studies	No studies	No studies	No studies
			10 years	No studies	No studies	No studies	No studies	No studies
Retropubic "top down"	81% (2 studies)	3% to 7% (3 studies)	**2 years**	No studies	No studies	No studies	No studies	No studies

			3 years	No studies	No studies	No studies	No studies	No studies
			5 years	No studies	No studies	No studies	No studies	No studies
			7 years	No studies	No studies	No studies	No studies	No studies
			10 years	No studies	No studies	No studies	No studies	No studies
Open colpo-suspension	53% to 94% (10 studies)	0% to 11% (6 studies)	**2 years**	70% to 86% (3 studies)	No studies	0 to 9% (1 study)	No studies	0 to 14% (1 study)
			3 years	89% (1 study)	No studies	No studies	No studies	No studies
			5 years	78% to 79% (2 studies)	No studies	No studies	0 % to 4% (1 study)	0% to 25% (1 study)
Autologous rectus fascial sling	93% (1 study)	No studies	**5 years**	No studies	0% to 3% (1 study)	No studies	No studies	0% to 16% (1 study)
* Tissue injury includes bladder perforation, vaginal wall perforation, urethral and bladder injury								