APPENDICES

Appendix 1. Development of the guideline

1.1 Background
The Queensland Health framework for development, review and evaluation of clinical practice guidelines has been utilized by the HACC/MASS Continence Project team in writing this guideline.

1.2 Clinical expert development panel

**Project Team 2008**
- Gayle Leggat – Executive Officer, Medical Aids Subsidy Scheme, Queensland Health
- John Vasil – Acting Executive Officer, Medical Aids Subsidy Scheme, Queensland Health
- Penny Penrose – Service Manager, Medical Aids Subsidy Scheme, Queensland Health
- Christine Leech – Senior Project Officer, HACC/MASS Continence Project, Medical Aids Subsidy Scheme, Queensland Health
- Audrey Burgin – Continence Nurse Advisor, HACC/MASS Continence Project, Medical Aids Subsidy Scheme, Queensland Health
- Annette Smith – Executive Support Officer, HACC/MASS Continence Project, Medical Aids Subsidy Scheme, Queensland Health

**Additional Members**
- Carole Cragg – Consumer Representative, Older Women’s Network, Brisbane
- Frances Golding – Pharmacist, Queen Elizabeth II Jubilee Hospital, Queensland Health
- Kay Josephs – Clinical Nurse Consultant, Continence Nurse Advisor, Blue Care, Brisbane
- Heather Miller – Principal Continence Clinical Advisor, Medical Aids Subsidy Scheme, Queensland Health
- Alyssa Tait – Continence Physiotherapist

There was no conflict of interest from any panel members in regards to the development of this guideline.

1.2.1 Additional contributors - first edition, 2006
- Dr Geoff Hirst – Urologist, Urology department, Mater Health Services, Brisbane (LUTS in men and CISC section)
- Dr Nick Oliver – Consultant Physician/Geriatrician, Toowoomba
- Yvette Sullivan – Urological Advanced Practice Nurse and Continence Advisor, Mater Health Services, Brisbane (ICSC section)
1.3 **External reviewers - first edition, 2006**

- Associate Professor David Fonda – Geriatrician, Cabrini Medical Centre, Melbourne, Member of the International Continence Society
- Dr Jean Hay Smith – Lecturer in Rehabilitation, Rehabilitation Teaching and Research Unit, Wellington School of Medicine and Health Sciences, University of Otago, Dunedin, New Zealand
- Professor Marianne Wallis, Chair, Clinical Nursing Research, Griffith University and Gold Coast Health Service District
- Australian Physiotherapy Association Continence and Women’s Health Special Interest Group (Queensland) (Pelvic floor section)
- Judith Thompson – Physiotherapist (Pelvic floor section)
- Women’s Health and Continence Network South East Queensland Hospitals (Physiotherapy interest group) (Pelvic floor section)

1.4 **Updating the guideline**

It is envisaged that the guideline will be updated every two years. Some aspects may be considered obsolete two years after printing according to best practice guidelines.
Appendix 2. Clinical practice guideline development methods

2.1 Criteria for considering studies for clinical practice guideline review

**Types of studies**

The types of studies included:
- Current systematic reviews
- Randomised controlled trials
- Quasi-randomised controlled trials.

Other studies have been included in narrative format, and thus have not been systematically reviewed. Good practice points and points of interest have been made based on these studies, while practice recommendations are made in sections that have been critically reviewed. Similarly, the guideline has drawn on expert opinion to provide additional insight into current practices in Queensland, and these also provide the basis for some good practice points and points of interest. The reader is encouraged to read section two of this guideline for further detail regarding literature reviews and quality of evidence.

**Types of participants**

Studies used incorporated community-dwelling, older people.

**Types of interventions**

Continence intervention strategies included and excluded in this guideline are indicated in Table 17.

### Table 17: Continence management strategies included/excluded in this guideline

<table>
<thead>
<tr>
<th>Included</th>
<th>Excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prompted voiding</td>
<td>Timed voiding – not a community-based intervention</td>
</tr>
<tr>
<td>Habit retraining</td>
<td>Neuromuscular stimulation/ neuromodulation</td>
</tr>
<tr>
<td>Bladder retraining</td>
<td>Biofeedback – EMG, pressure</td>
</tr>
<tr>
<td>Pelvic floor muscle exercises</td>
<td>Conservative interventions listed in the left-hand column where protocols were not community-based</td>
</tr>
<tr>
<td>Conservative interventions for voiding dysfunction</td>
<td></td>
</tr>
<tr>
<td>Conservative interventions for males with prostate disease</td>
<td></td>
</tr>
</tbody>
</table>

**Literature search strategy**

An initial search for relevant clinical practice guidelines was undertaken, both within the Clinicians Knowledge Network of the Queensland Health intranet site and on the worldwide web, including websites of the NHMRC, SIGN, NZGG, NGC, NICE, eGuidelines and
Appendix 2. Clinical practice guideline development methodology

Tripdatabase. No guidelines were found that obviated the need to develop this guideline. Relevant research articles were found by searching databases including the Cochrane Library, Medline 1966+, Medline 1996+, CINAHL and PsycINFO. EMBASE was not searched. The search strategy used complied with Queensland Health recommendations for literature searching for the development of clinical practice guidelines.

When relevant systematic reviews were located in the Cochrane library, the Cochrane search strategy for each review was directly reproduced and limited to years since publication (including the year of publication to ensure papers published later in that year were identified). These specific search strategies were outlined either in the body of the relevant Cochrane Review itself or on the website of the Cochrane Continence Group.

Specific search terms and strategies for particular sections are listed below.

**VOIDING DIFFICULTIES/CATHETERISATION**
- Medline 1966+: MESH term Urinary Retention, limited to diagnosis
- Medline 1966+: MESH term Urinary Retention, limited to prevention and control, rehabilitation, therapy, further limited to all adult 19+ and clinical trial
- Medline 1966+: void$ adj2 (difficult$ or problem$ or disorder$ or impair$ or control$ or dysfunction$).mp AND all RCT, not child$, not surg$, limit to clinical trial and middle aged+
- Medline 1966+: bladder adj1 stimulat$.mp, limit to middle aged++
- Medline 1966+: clean adj5 cateteri$ and (void$ adj2 (difficult$ or problem$ or disorder$ or impair$ or control$ or dysfunction$)).mp
- Medline 1966+: ((clean adj5 intermittent adj5 catheteri$) and ((resid$ adj5 urine) or void$).mp
- Medline 1966+, CINAHL: intermittent catheterisation and women
- Medline 1966+, CINAHL: intermittent catheterisation and women
- Medline 1966+: MESH term Bladder Neck Obstruction, limit review, limit English

**ADHERENCE**
- Medline 1966+, CINAHL, PsycINFO: (compliance or adherence) and (pelvic and exercise$) or (pelvic and muscle$)

### 2.2 Screening studies for eligibility

**Selection of trials**

One reviewer screened the abstracts of all publications obtained by the search strategy. For articles deemed eligible, the full article was obtained and assessed based on inclusion and exclusion criteria. Trials excluded were identified with reasons for exclusion given.

**Inclusion criteria application:**

Assessment of the quality of the included studies was performed. The reviewer was not blinded to author, institution or journal of publication.

The following criteria were used to judge inclusion and exclusion of trials (Cochrane, 2003).

A. Adequate measures taken to conceal allocations such as central randomisation; serially numbered, opaque, sealed envelopes; or other description that contains convincing elements of adequate concealment.

B. Uncertain concealed trials, in which the authors either did not report the allocation concealment, or they reported an approach that did not fall into one of the categories in C.

C. Inadequately concealed trials, in which the method of allocation was not concealed, such as alternation methods or use of case record numbers (quasi-randomisation).

Studies were eligible if classified in categories ‘A’ or ‘B’. Studies which fell into category ‘C’ were excluded.
2.3 Rating the evidence

Critical appraisal

To ensure that variation was not caused by systematic errors in the design of the study, the
two independent reviewers assessed the methodological quality of the selected trials. The
appraisal utilised an evidence template, (table 18), which incorporates a rating scale derived
including some specific items relating to continence outcome measures.

This template is derived from the following documents:

- Queensland Health/Medeserv on-line EBP program
- TWS-2011 Evidence Table for Intervention (Treatment) question
- TWS-2008 Critical Appraisal of Therapy Studies User Guide
- Scottish Intercollegiate Guidelines Network – SIGN 50: A guideline developer’s
  handbook (SIGN, 2005)
- Methodology Checklist 2: Randomised Controlled Trials
- Notes on the use of Methodology Checklist 2

Table 18: Evidence template

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rating scale from evidence template</th>
<th>Limitation rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclusion/exclusion criteria</td>
<td>Were the inclusion and exclusion criteria clearly defined?</td>
<td>If ‘1’ – serious</td>
</tr>
<tr>
<td></td>
<td>3 = Clearly defined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 = Poorly defined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 = Not defined</td>
<td></td>
</tr>
<tr>
<td>Randomisation</td>
<td>Were the patients allocated to the interventions by generation of a random sequence?</td>
<td>If ‘1 or 2’ - serious</td>
</tr>
<tr>
<td></td>
<td>3 = Adequately – computer generated random numbers or random number tables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 = Inadequately – use of alternation, case record numbers, birth dates or week days.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 = Not mentioned or unclear</td>
<td></td>
</tr>
<tr>
<td>Allocation concealment</td>
<td>Was the assigned treatment adequately concealed prior to allocation?</td>
<td>If ‘1’ – very serious</td>
</tr>
<tr>
<td></td>
<td>3 = Method did not allow disclosure of assignment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 = Small but possible chance of disclosure of assignment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 = Not mentioned or unclear</td>
<td></td>
</tr>
<tr>
<td>Were the treatment and control group</td>
<td>Were the treatment and control group comparable at entry?</td>
<td>If ‘1’ – and only if it affects conservativeness - serious</td>
</tr>
<tr>
<td>comparable at entry?</td>
<td>3 = Good comparability of groups, or confounding adjusted for in analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 = Confounding small; mentioned but not adjusted for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 = Large potential for confounding, or not discussed</td>
<td></td>
</tr>
<tr>
<td>Criteria</td>
<td>Rating scale from evidence template</td>
<td>Limitation rating</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Allocation concealment (cont)</td>
<td>Were the subjects blind to assignment status after allocation? 3 = Effective action taken to blind subjects 2 = Small or moderate chance of unblinding of subjects 1 = Not possible, or not mentioned (unless double-blind), or possible, but not done</td>
<td>Deemed to have no effect on study quality, or effect on study quality not deemed to be significant</td>
</tr>
<tr>
<td></td>
<td>Were the treatment providers blind to assignment status? 3 = Effective action taken to blind treatment providers 2 = Small or moderate chance of unblinding of treatment providers 1 = Not possible, or not mentioned, or possible, but not done</td>
<td>Deemed to have no effect on study quality as above</td>
</tr>
<tr>
<td></td>
<td>Was the duration of surveillance clinically appropriate? 3 = 1 year or more 2 = Less than 1 year 1 = Not defined</td>
<td>Relevant to ‘directness’ area – see GRADE criteria</td>
</tr>
<tr>
<td></td>
<td>Were the outcomes of patients who withdrew described and included in the analysis (intention to treat)? 3 = Intention to treat analysis based on all cases randomised possible or carried out 2 = States number and reasons for withdrawal but intention to treat analysis not possible/not performed 1 = Inadequate detail</td>
<td>If ‘1’ – due to inadequate detail – serious If drop outs not included • 15% to 30% - serious limitation • &gt; 30% very serious limitation If drop outs had conditions considered to be significant confounding factors = very serious limitation</td>
</tr>
<tr>
<td></td>
<td>Was a power calculation performed, and were adequate subjects retained? 3 = Power calculation performed and adequate numbers obtained/retained 2 = Power calculation not performed but inadequate numbers not likely to adversely affect validity 1 = Power calculation not performed and inadequate numbers likely to adversely affect validity</td>
<td>Uncertain implications, therefore not rated as a serious or very serious implication but considered in the context of the other limitations</td>
</tr>
<tr>
<td>Criteria</td>
<td>Rating scale from evidence template</td>
<td>Limitation rating</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>
| Allocation concealment (cont) | C - Were the outcome assessors blinded to treatment status?  
3 = Effective action taken to blind assessors  
2 = Small or moderate chance of unblinding of assessors  
1 = Not mentioned or not possible | If ‘1’ = serious limitation |
| Were the continence outcome measurement tools used clearly defined? | 3 = Clearly defined  
2 = Poorly defined  
1 = Not defined | Deemed not to be a limitation to study as long as there was superficial validity |
| Were the continence outcome measurement tools reliable and valid? | 3 = Independently validated and reliable tool  
2 = Unclear on reliability and validity  
1 = Not validated |

### 2.4 Condensed studies (Cochrane guidelines)

(Gillespie, Gillespie, Robertson et al., 2005; Green & Higgins, 2004; Khan, Kunz, Kleijnen et al., 2003)

<table>
<thead>
<tr>
<th>Methods</th>
<th>Participants</th>
<th>Intervention</th>
<th>Outcomes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of trial</td>
<td>Setting</td>
<td>a. Description of intervention delivered</td>
<td>Length of follow up</td>
<td>Any additional information</td>
</tr>
<tr>
<td>Method of randomisation</td>
<td>Number</td>
<td>b. Control or description of alternative intervention</td>
<td>Outcome measures</td>
<td></td>
</tr>
<tr>
<td>Losses</td>
<td>Subject description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to treat</td>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusion criteria</td>
<td>Exclusion criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Allocation Concealment:** A, B or C

### Synthesis of studies

The studies in each of the topic areas were then synthesised using the considered judgement process outlined in the following document.
2.5 Considered judgment on quality of evidence

- STUDY VOLUME, DESIGN AND QUALITY (high, moderate, low, very low)

Limitations to Study Quality (S = serious limitation, VS = very serious limitation)

- CONSISTENCY
- DIRECTNESS (able to generalise to target audience)

- CLINICAL IMPACT (eg magnitude of effect, relative benefit over other management options, resource implications)

<table>
<thead>
<tr>
<th>Study</th>
<th>Applicability to HACC population</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Grading system for design**

The considered judgment process developed from these documents considered four major aspects of the available evidence:
- Study volume, design and quality (information from evidence table)
- Consistency
- Directness
- Clinical impact

The Considered Judgment and Recommendations (CJR) document was developed using the following documents/resources:
  - Section 6: Forming guideline recommendations
  - Annex D: Synthesising evidence and making recommendations

The completed CJR document for each topic area (toileting programs for cognitively impaired, bladder training, pelvic floor muscle exercises, combined approaches and post-prostate surgery incontinence), owing to their size, is not included within the guideline.
2.6 Formulation of recommendations

2.6.1 Explanation of the grades of recommendation (GRADE)

The GRADE grading system was selected to rate levels of evidence and grade recommendations for this guideline. This was a deliberate departure from the first guideline, ‘First Steps in the Management of Urinary Incontinence in Community-Dwelling Older People; A clinical practice Guideline 2007’, (MASS 2007), where the Scottish Intercollegiate Group Network (SIGN) grading system was used. There were a number of reasons for this, summarised as follows:

- Although the evidence-based literature search uncovered numerous randomised controlled trials (RCTs) on the relevant areas, critical appraisal revealed numerous flaws in most of the RCTs, and therefore a high risk of bias in accepting the findings. Under the SIGN system, a body of evidence comprising RCTs with a high risk of bias is rated at the level 1-. However, a body of evidence rated as 1- is unable to be directly translated into a grade of recommendation (eg. A, B, C, D). Only evidence levels of 1++, 1+, 2++, 2+, 3 and 4 are included in the SIGN system for grading recommendations. It was therefore impossible to designate grades of recommendation using the SIGN system.

- The GRADE system is an emerging grading system. The system was seen by the project team and expert panel as having a number of clear advantages over many other commonly used grading systems. These include increased transparency of the processes of rating evidence and grading recommendations; consideration of various factors that affect quality of evidence, such as imprecise/sparse data, reporting bias and inconsistencies in the body of evidence; and explicit consideration of health benefits versus harms and costs.

- The GRADE system does not include a level for expert opinion. This results in greater transparency, with the authors of the guideline needing to explicitly state when a recommendation given is from expert opinion and without any supporting research evidence.

Point of Interest

The reader is referred to the following document for more information on the GRADE grading system and its advantages:


The overall quality of the evidence was then graded according to the GRADE methodology as follows in table 19.
Table 19: The grades of recommendation, assessment, development and evaluation (GRADE) grading system

<table>
<thead>
<tr>
<th>Domain</th>
<th>Quality of evidence</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Volume, Design and Quality</td>
<td>If serious limitation to overall quality</td>
<td>Reduce grade by 1</td>
</tr>
<tr>
<td></td>
<td>If very serious limitation to overall quality</td>
<td>Reduce grade by 2</td>
</tr>
<tr>
<td></td>
<td>If imprecise data</td>
<td>Reduce grade by 1</td>
</tr>
<tr>
<td>Consistency</td>
<td>If important inconsistency</td>
<td>Reduce grade by 1</td>
</tr>
<tr>
<td>Directness</td>
<td>Some uncertainty</td>
<td>Reduce grade by 1</td>
</tr>
<tr>
<td></td>
<td>Major uncertainty</td>
<td>Reduce grade by 2</td>
</tr>
<tr>
<td>Clinical Impact</td>
<td>Not included in GRADE methodology (part of SIGN methodology)</td>
<td>No effect on grade, but discussed in a narrative form and affects the recommendation given</td>
</tr>
</tbody>
</table>

Recommendations for practice were then formulated using a combination of the quality rating (grade) of evidence found for the intervention, and issues surrounding the likely clinical impact, including size of effect/clinical significance of effect; economic issues (eg. cost versus likely benefit); practicality (eg. availability of resources); and safety issues. These are summarised in Figure 8.

**Levels of evidence**

- **High**: Further research is unlikely to change our confidence in the estimate of effect.
- **Moderate**: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
- **Low**: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
- **Very low**: Any estimate of effect is very uncertain.

**Categories of recommendations**

- Do
- Probably do
- Don’t do
- Probably don’t do

**Figure 8: Levels of evidence and recommendations for practice**
Appendix 3. Teaching the technique of clean intermittent self-catheterisation

3.1 Teaching the technique – male and female

Many people learn intermittent catheterisation in a single session or visit. However, people with disabilities may take considerably longer to find a position and a method that is reliable. Some women with limited movements in the hand and wrist may find a more rigid catheter easier to manipulate or may benefit from using an aid to assist insertion (Williams, 2005).

There is not one single recommended technique nor material for intermittent catheters, as both depend greatly on individual anatomy, social and economic circumstances (Cottenden, Bliss, Fader et al., 2005).

The International Continence Society recommends cleaning of the meatal region before a catheter is introduced (Cottenden, Bliss, Fader et al., 2005). However, other sources suggest washing the genitals only if necessary (Getliffe & Dolman, 2007). For men, this means cleansing the tip of the penis, and pulling back the foreskin to clean around the glans if uncircumcised (Getliffe & Dolman, 2007). One Brisbane based urology advanced practice nurse suggests that there is no indication for swabbing the urethral meatus when performing CISC, unless a discharge or vaginal infection is present (Sullivan, 2006). Some women produce excessive vaginal secretions and this may lead to discussion about cleaning techniques. However, most bacteria lie in the first 1.25cm of the urethra, and external swabbing will not address this (Williams, 2005).

Performance of intermittent catheterisation, including identification of the most comfortable position, should be followed by observation of client’s technique (Getliffe & Dolman, 2007).

Follow up visits are recommended every 1–2 weeks initially to check technique and provide education, then as required (NHS Quality Improvement Scotland, 2004).

**Techniques common for both males and females**

When the client voids, obtain a specimen of urine for a reagent strip test (Williams, 2005).

Wash and dry hands immediately before catheterising and after adjusting clothing. Check the funnel end of catheter is towards the container or toilet so spillage of urine is avoided (Getliffe & Dolman, 2007).

The catheter may be kept in place until the urine flow stops. Then pull out gently and slowly while gentle Valsalva or bladder expression is done in order to completely empty residual urine. When done properly, the residual urine should be a maximum of 6mL. Bending forward slightly or using gentle pressure on the abdomen just above the pubic bone can help complete emptying (Getliffe & Dolman, 2003).

The end of the catheter may be blocked to prevent backflow of urine or air into the bladder (Cottenden, Bliss, Fader et al., 2005). This technique is only considered necessary if the patient experiences pain during catheter removal. This is thought to be as a result of a vacuum effect on the mucosal lining of the bladder into the open end of the catheter (Hirst, 2006).

Once the technique is mastered, send the client away with adequate number of catheters, written details for obtaining supplies, a simple instruction sheet, diagram, a list of possible difficulties and what to do, and contact number if necessary (Getliffe & Dolman, 2003; Williams, 2005).
3.2 Problems with insertion and removal

If the client is unable to insert the catheter, leave for a few minutes and try again. Dipping the catheter in water may increase lubrication.

If the client is unable to remove the catheter, leave it for a few minutes, relax and let go, give a gentle cough and withdraw it (Getliffe & Dolman, 2007). However, hydrophilic catheters can be left in place for a short time only to prevent suction by the urethral mucosa which may make removal difficult (Cottenden, Bliss, Fader et al., 2005).

If urethral bleeding occurs, it may be helpful to prevent the bladder filling above 450mL, to prevent enlargement of the surface capillaries in the bladder (Getliffe & Dolman, 2007).

**Table 20: Positions for teaching clean intermittent self catheterisation**

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>On bed with head raised for touch technique</td>
<td>Lying supine on the bed (the clinician may find that beds are not always available and may have to improvise)</td>
</tr>
<tr>
<td>Lying supine on bed with knees apart</td>
<td>Standing over a toilet</td>
</tr>
<tr>
<td>Sitting on toilet or bidet, using a foot stool to push pelvis back</td>
<td>Sitting on toilet or chair</td>
</tr>
<tr>
<td>Squatting against the wall</td>
<td></td>
</tr>
<tr>
<td>Sitting in an empty bath</td>
<td>Containers that can be used for urine receptacle include:</td>
</tr>
</tbody>
</table>
| Sitting on a chair, with feet up on toilet seat (avoids need to transfer from wheelchair to toilet and back again) | - Toilet  
- Plastic bag  
- Urinal bottle  
- Milk carton  
- Plastic juice bottle  
- Bucket |
| Standing with one leg raised on the toilet or bath |                                                        |
| Sitting back to front facing the cistern    |                                                        |
| Sitting on the edge of a chair              |                                                        |
| Sitting on a footstool with legs spread apart (useful for women who are overweight or have large breasts) |                                                        |

(Getliffe & Dolman, 2003; Sullivan, 2006; Williams, 2005)
Appendix 4. Toileting programs in clients with cognitive impairment

4.1 Comparison of prompted voiding and habit retraining

Various toileting programs are used in clinical practice with clients who have cognitive impairment, and these programs have been categorised in the literature into three main subtypes:

1. Prompted voiding (Eustice, Roe, & Paterson, 2004)
2. Habit retraining (Ostaskiewicz, Johnston, & Roe, 2004a)
3. Timed voiding (Ostaskiewicz, Johnston, & Roe, 2004b).

Timed voiding is a fixed voiding schedule that remains unchanged over the course of the treatment. The goal is to prevent incontinence by providing regular opportunities for bladder emptying prior to exceeding bladder capacity. Research on timed voiding has been restricted to older clients in residential care, and therefore has not been considered in this guideline. However, it has applicability for use in community settings with incontinent women who have infrequent or irregular voiding patterns, and men who are independent in their voiding function (Wilson, Hay-Smith, Nygaard et al., 2005).

Prompted voiding and habit retraining have been investigated in both community-dwelling and residential care populations, and aim to avoid incontinence episodes. Prompted voiding aims to teach clients to initiate toileting through requests for help, and therefore entails a greater degree of client participation than habit retraining (Eustice, Roe, & Paterson, 2000). In habit retraining, involuntary bladder emptying is pre-empted by developing a toileting schedule based on the client’s individual toileting pattern (Ostaskiewicz, Johnston, & Roe, 2004a). This may involve either increasing or decreasing voiding intervals.

Key features of these two toileting programs are outlined below in table 21 (Ostaskiewicz, Johnston, & Roe, 2004a).

<table>
<thead>
<tr>
<th>Prompted voiding</th>
<th>Habit retraining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be used in clients with cognitive impairment</td>
<td>Can be used in clients with cognitive impairment</td>
</tr>
<tr>
<td>Requires a greater degree of participation by the client</td>
<td>Requires a lesser degree of participation by the client</td>
</tr>
<tr>
<td>Requires significant contribution from the carer to assist the client to the toilet (if required)</td>
<td>Requires significant contribution from the carer to assist the client to the toilet (if required)</td>
</tr>
<tr>
<td>Regular prompts, reminders and contingent reinforcement</td>
<td>Individualised toileting schedule based on the client’s toileting pattern. Attempts to alter the voiding pattern are not made</td>
</tr>
<tr>
<td>Education to caregiver, encouragement and support</td>
<td>Education to caregiver, encouragement and support</td>
</tr>
</tbody>
</table>

Table 21: Comparison of features of prompted voiding and habit retraining

Link to Section 10.2
4.2 Promoting continence using prompted voiding technique

Promoted voiding is a technique that involves the identification of the incontinent person’s natural voiding pattern and, with assistance of a carer, allows the individual to respond appropriately to the urge to void. It involves use of a scheduled voiding regimen, typically every two hours, and is used to teach clients to initiate their own toileting through requests for help and positive reinforcement from caregivers when they do so (Wilson, Hay-Smith, Nygaard et al., 2005). It should be offered to decrease daytime urinary incontinence in nursing home residents, and homebound older adults who have a carer committed to implementing the program (Fonda, DuBeau, Harari et al., 2005).

Promoted voiding is suitable for clients with functional or cognitive impairment. It is not suitable for clients with transient incontinence, urinary retention, or aggressive, uncooperative behaviour.

The toileting schedule is developed in conjunction with the carer to enable the needs of the carer to also be considered. The carer is also made aware of normal age-related changes that may impact on maintaining continence. Maximum effect may not be determined until at least three weeks into the program.

Objectives

The objectives of prompted voiding are:

- Attempt to duplicate the individuals voiding pattern
- Decrease the number and severity of incontinent episodes
- Increase self-initiated toileting
- Improve quality of life for client and carer
- Prevent the complications associated with incontinence
- Keep intervals between voids as long as possible without incontinence
- Reduce carer strain and burden.

Baseline assessment

The baseline assessment should be conducted in accordance with the information on assessment in section four of this guideline. Evaluate baseline assessment to determine if prompted voiding is appropriate.

Management strategies

The management strategies for prompted voiding are:

- Dietary and fluid modification
  * Reduce intake of bladder irritants
  * Ensure an adequate and consistent fluid intake
- Treatment/management of constipation and promotion of good bowel function
- Environmental modification (eg leaving bathroom light on, picture on toilet door)
- Pharmacological therapy - either modification of current medication regime (if causing side effects contributing to incontinence), or additional pharmacological therapy (topical/oral) as appropriate
- If client suffers from enuresis encourage client to lie down with elevated legs in the afternoon; observe for signs of lower leg oedema and manage as appropriate
- Prompted voiding program.
**Implementation of prompted voiding program**

To implement a prompted voiding program:
- Initiate an individualised prompted voiding program based on client’s voiding pattern as determined by bladder diary
- Toilet within 30 minutes of the scheduled session
- Toilet immediately after self-initiated requests
- Toilet if client displays signs of restlessness or agitation
- Prompt client to toilet at appropriate times according to their voiding pattern
  - Ask if they would like to use the toilet
  - If response is yes, provide assistance as required
  - If response is no, encourage client to use toilet
- Use language that client understands for key words such as toilet and urine
- Give positive reinforcement to client for dryness and toileting success
- Use a bladder diary to record results of prompted voiding sessions including:
  - Client-initiated toileting
  - Prompts by carer and client’s response to prompts
  - Incontinent episodes
  - Pad changes.

**Evaluation of program**

Program evaluation may include a weekly review of the bladder diary by the supervising health professional, adjustment of the toileting schedule as necessary, an assessment of carer satisfaction and carer strain, and appropriate support to the carer as required.

**Barriers**

Barriers may include difficulty in determining accuracy of baseline data, lack of a motivated carer and good support mechanism, and a persistent resistance to toileting.

**4.3 Promoting continence using habit retraining technique**

Habit retraining involves the identification of an incontinent person’s natural voiding pattern from their completed bladder diary. An individualised toileting schedule is then developed which pre-empts involuntary bladder emptying, by toileting at a time interval that is shorter than the patient’s normal voiding pattern, and preceding the time period when incontinent episodes are expected. Thus the voiding interval may lengthen or shorten throughout the day depending on the patient’s voiding pattern. It requires assistance of a caregiver to initiate the toileting episode (Wilson, Hay-Smith, Nygaard et al., 2005). A Cochrane review (2004) found insufficient evidence on which to judge the impact of habit retraining on urinary incontinence. The review found that caregivers find it difficult to maintain voiding records and to implement the toileting program (Ostaskiewicz, Johnston, & Roe, 2004a).
Appendix 5. Instituting bladder training in cognitively-intact clients

Bladder training is a type of toileting program that is used in clients who are cognitively intact. It has also been referred to as ‘bladder retraining’ or ‘bladder drill’. Bladder training aims to increase the interval between voids and is a widely used treatment. It involves a scheduled voiding regimen with gradually progressive voiding intervals (Wilson, Hay-Smith, Nygaard et al., 2005).

In early studies, which have been excluded from this guideline, bladder training was implemented as an inpatient procedure. It consisted of a very strict program where female patients with urodynamically-proven, ideopathic detrusor overactivity were restricted in their voiding patterns. Patients were instructed to void at strict one-and-a-half hour intervals, progressively increasing to four-hourly over a period of one to two weeks.

It is now uncommon for bladder training to be implemented on an inpatient basis. Community based clients can benefit from instruction on how to implement their own bladder training program at home, and from guidance on how to progress this program.

5.1 Indications for bladder training

Research studies support the efficacy of bladder training, either alone or in combination with pelvic floor muscle exercises, for older male and female clients. Although there is only a low level of evidence for the benefit of bladder training, it is recommended as being useful for cognitively intact community dwelling older people who do not have a neurogenic component to their incontinence, who have stress, urge and mixed urinary incontinence. The main indications for such a program are the presence of urgency and/or frequency and/or urge incontinence.

The goal of bladder training is to correct faulty habit patterns of frequent urination (if present), improve control over bladder urgency, prolong voiding intervals, increase bladder capacity, reduce incontinent episodes and restore client confidence in controlling bladder function (Wilson, Hay-Smith, Nygaard et al., 2005).

Nocturia in isolation is not an indication for a bladder training program. However, if nocturia presents in conjunction with other symptoms, further investigations are required to rule out specific medical conditions. If other conditions are ruled out and the cause of the nocturia is assumed to be reduced voided volumes due to decreased functional bladder capacity, bladder training is appropriate.

5.2 Components of a bladder training program

Components of a bladder training program include:

- Client education is an important feature and should include the purpose of the program, the importance of adherence to the program, and proposed framework. Education in good bladder habits, appropriate fluid intake, limitation of caffeinated and alcoholic beverages, appropriate toilet positioning, avoidance of ‘convenience voids’, the function of the normal bladder and the process of storage, is also recommended.

- Completion of a bladder diary helps to identify an appropriate initial voiding pattern and frequency. A goal is set to increase this interval by a small amount thereby decreasing the frequency.
• Teaching of Urge Deferment Strategies (Getliffe & Dolman, 2003).

Urge deferment strategies shown to improve efficacy of bladder training include:

• Mental distraction
• Use of a voluntary pelvic floor muscle contraction when the urge is felt so as to inhibit the urge
• Relaxation: slow, relaxed breathing; unhurried movements
• Contraction of the buttock muscles (‘buttock squeezing’)
• Curling of the toes or alternate curling and lifting of the toes or pointing and pulling up of the foot
• Perineal pressure, either with the hand or by sitting on something firm, such as the edge of a chair or a rolled towel
• Stopping and standing still when the urge is felt, using all the techniques above, and moving only once the urge is under control.

Support and reassurance for the client regarding the program can include:

• Reassurance that an initial increase in leakage episodes is not a sign of failure
• Motivational techniques to improve adherence
• Use of the bladder diary to monitor changes in both voiding frequency and episodes of leakage or urgency, as an outcome measure for the clinician and an educational/motivational tool for the client.

Progression of the program involves gradually increasing the period from initial urge/urgency to the actual void, thereby lengthening the time between voids and decreasing the overall frequency (Getliffe & Dolman, 2007).

There is no single method for setting the parameters of a bladder training program. They should be based on the findings of assessment (history, symptoms and bladder diary). The initial voiding interval from urge to void should be just slightly longer than that recorded on the bladder diary, and be gradually increased over a course of a number of weeks. Research studies that have demonstrated efficacy of a bladder training program have used the following general guidelines (Dougherty, Dwyer, Pendergast et al., 2002; Fantl, Wyman, McClish et al., 1991; Wyman, Fantl, McClish et al., 1998):

• Six weeks of bladder training
• Initial voiding interval 30-60 minutes depending on daytime voiding interval
• Voiding intervals progressed by 30 minutes each week
• If the client showed a decrease in the number of incontinent episodes and tolerated the schedule without interruptions, the aim is to achieve a 2.5-3 hour interval between voids
• If the client is concurrently taking anticholinergic medication, close liaison should occur with the general medical practitioner to co-ordinate reduction of the dose as the client progresses with the program.
Appendix 6. Client instructions for a home pad weigh test

For clinical interpretation and considered research for this test refer to the Continence Outcomes Measurement Suite (COMS) final report (Thomas, Nay, Moore et al., 2006).

1. Wear disposable pads for 24/48/72 hours. Use only one brand, type and size of pad for the whole period. Use at least a medium size pad, nothing smaller.

2. When the pad becomes wet, remove it and place it in the snap-lock bags provided. Do not wrap the pad in anything.

3. Make sure the bag is sealed each time you put a used pad in it.

4. Bring the snap-lock bags containing the pads worn to the next appointment.

5. The bag of pads will be weighed when you bring it in. This will tell us how much urine you lost over the specified time period.

6. Bring a dry, unused pad to the appointment so that it can also be weighed. After it is weighed, it will be returned to you.

Type of Pad Used (Brand and Size): ________________________
**Appendix 7. Kings Health Quality of Life Questionnaire**

**PART ONE**

1. **How would you describe your health at present?**
   Please tick one answer.
   - Very good
   - Good
   - Fair
   - Poor
   - Very poor

2. **How much do you think your bladder problem affects your life?**
   Please tick one answer.
   - Not a lot
   - A little
   - Moderately
   - A lot

**PART TWO**

Below are some daily activities that can be affected by bladder problems. How much does your bladder problem affect you?

We would like you to answer every question. Simply tick the box that applies to you.

<table>
<thead>
<tr>
<th>3. ROLE LIMITATIONS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your bladder problem affect your...</td>
<td>Not at all</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A lot</td>
</tr>
<tr>
<td>A. household tasks (cleaning, shopping etc)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. job, or your normal daily activities outside the home?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 4. PHYSICAL/SOCIAL LIMITATIONS | | | | |
| Does your bladder problem... | | | | |
| A. affect your physical activities (eg. going for a walk, running, sport, gym)? | | | | |
| B. affect your ability to travel? | | | | |
| C. limit your social life? | | | | |
| D. limit your ability to see and visit friends? | | | | |

<table>
<thead>
<tr>
<th>5. PERSONAL RELATIONSHIPS</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your bladder problem...</td>
<td>N/A</td>
<td>Not at all</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A lot</td>
</tr>
<tr>
<td>A. affect your relationship with your partner?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. affect your sex life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. affect your family life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 6. EMOTIONS
Does your bladder problem make you...

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. feel depressed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. feel anxious or nervous?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. feel bad about yourself?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 7. SLEEP/ENERGY
Does your bladder problem...

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. affect your sleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. make you feel worn out and tired?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 8. DO YOU DO ANY OF THE FOLLOWING? IF SO, HOW MUCH?

A. Wear pads to keep dry?
B. Be careful how much fluid you drink?
C. Change your underclothes because they get wet?
D. Worry in case you smell?

**PART THREE**

We would like to know what your bladder problems are and how much they affect you. From the list below, choose only those problems that you have at present. Leave out those that don’t apply to you.

<table>
<thead>
<tr>
<th>HOW MUCH DO THEY AFFECT YOU AT PRESENT?</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY: going to the toilet very often</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOCTURIA: getting up at night to pass urine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URGENCY: a strong and difficult to control desire to pass urine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URGE INCONTINENCE: urinary leakage associated with a strong desire to pass urine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRESS INCONTINENCE: urinary leakage associated with physical activity, eg. coughing, running</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOCTURNAL ENURESIS: wetting the bed at night</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERCOURSE INCONTINENCE: urinary leakage with sexual intercourse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATERWORKS INFECTIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLADDER PAIN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(Kelleher, Cardozo, Khullar et al., 1997)*
TO CALCULATE SCORES OF THE KINGS HEALTH QUALITY OF LIFE QUESTIONNAIRE

PART ONE

1. General health perception

| Very good = 1 | Good = 2 | Fair = 3 | Poor = 4 | Very poor = 5 |

Score = ((Score to question 1 − 1)/4) x 100

2. Incontinence impact

| Not at all = 1 | A little = 2 | Moderately = 3 | A lot = 4 |

Score = ((Score to question 2 − 1)/3) x 100

PART TWO

Individual scores as recorded at the top of each column of possible responses

3. Role limitations

Score = (((Scores to questions 3A + 3B) -2)/6) x 100

4. Physical limitations

Score = (((Scores to questions 4A + 4B) - 2)/6) x 100

5. Social limitations

If 5C ≥ 1, Score = (((Scores to questions 4C + 4D + 5C) - 3)/9) x 100
If 5C = 0, Score = (((Scores to questions 4C + 4D) - 2)/6) x 100

6. Personal relationships

If 5A + 5B ≥ 2, Score = (((Scores to questions 5A + 5B) -2)/6) x 100
If 5A + 5B = 1, Score = (((Scores to questions 5A + 5B) - 1)/3) x 100
If 5A + 5B = 0, treat as a missing value

7. Emotions

Score = (((Score to questions 6A + 6B + 6C) - 3)/9) x 100

8. Sleep/energy

Score = (((Scores to questions 7A + 7B) - 2)/6) x 100

9. Severity measures

Score = (((Scores to questions 8A + 8B + 8C + 8D) - 4)/12) x 100

PART THREE

| Omitted = 1 | A little = 2 | Moderately = 3 | A lot = 4 |
Appendix 8. Urogenital Distress Inventory (UDI) – Short Form

Name: ________________________________   Score: ___ / 24

1. Do you experience frequent urination? (Please circle)
   Yes  No (Skip to 2)

   If yes, how much does it bother you?
   Not at all  Slightly  Moderately  Greatly

2. Do you experience urine leakage related to the feeling of urgency?
   Yes  No (Skip to 3)

   If yes, how much does it bother you?
   Not at all  Slightly  Moderately  Greatly

3. Do you experience urine leakage related to physical activity?
   Yes  No (Skip to 4)

   If yes, how much does it bother you?
   Not at all  Slightly  Moderately  Greatly

4. Do you experience small amounts of urine leakage (drops)?
   Yes  No (Skip to 5)

   If yes, how much does it bother you?
   Not at all  Slightly  Moderately  Greatly

5. Do you experience difficulty emptying your bladder?
   Yes  No (Skip to 6)

   If yes, how much does it bother you?
   Not at all  Slightly  Moderately  Greatly

6. Do you experience pain or discomfort in the lower abdominal or genital area?
   Yes  No

   If yes, how much does it bother you?
   Not at all  Slightly  Moderately  Greatly

Scoring
Not at all  =  0
Slightly  =  1
Moderately  =  2
Greatly  =  3

Yes  =  1
No  =  2

Maximum Score: 24   Minimum Score: 0
Appendix 9. Incontinence Impact Questionnaire – Short Form IIQ-7

Some people find that accidental urine loss may affect their activities, relationships and feelings. The questions below refer to areas in your life that may have been influenced or changed by your problem. For each question, circle the response that best describes how much your activities, relationships and feelings are being affected by urine leakage.

<table>
<thead>
<tr>
<th>Has urine leakage affected your...</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Greatly</th>
</tr>
</thead>
<tbody>
<tr>
<td>ability to do household chores (cooking, housecleaning, laundry)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>physical recreation such as walking, swimming, or other exercise?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>entertainment activities (movies, concerts, etc.)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ability to travel by car or bus more than 30 minutes from home?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>participation in social activities outside your home?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>emotional health (nervousness, depression, etc.)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>feeling frustrated?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Items 1 and 2 = physical activity  
Items 3 and 4 = travel  
Item 5 = social/relationships  
Items 6 and 7 = emotional health

Scoring: Score items as per numbers circled. The average score of items responded to is calculated. The average, which ranges from 0 to 3, is multiplied by 33 1/3 to put scores on a scale of 0 to 100 (Uebersax, Wyman, Shumaker et al., 1995).
Many people leak urine some of the time. Please answer the following questions, thinking about how you have been, on average, over the PAST FOUR WEEKS.

1. **How often do you leak urine? (Tick one box)**
   - 0 Never
   - 1 About once a week or less often
   - 2 Two or three times a week
   - 3 About once a day
   - 4 Several times a day
   - 5 All the time

2. **How much urine do you usually leak (whether you wear protection or not)?**
   - 0 none
   - 2 a small amount
   - 4 a moderate amount
   - 6 a large amount

3. **Overall, how much does leaking urine interfere with your everyday life?**
   Please circle a number between 0 (not at all) and 10 (a great deal)

   0 1 2 3 4 5 6 7 8 9 10
   not at all a great deal

   **ICIQ score: sum scores 1+2+3 =**

4. **When does urine leak? (Please tick all that apply to you.)**
   - Never – urine does not leak
   -Leaks before you can get to the toilet
   - Leaks when you cough or sneeze
   - Leaks when you are asleep
   - Leaks when you are physically active/exercising
   - Leaks when you have finished urinating and are dressed
   - Leaks for no obvious reason
   - Leaks all the time

   Abrams, Andersson, Brubaker et al, 2005)
Appendix 11. International Continence Society Male – Short Form Questionnaire (ICSmaleSF)

Please answer each question, thinking about the symptoms you have experienced in the last month. Please tick one box for each question.

You will see that some questions ask how often you have a symptom:
- Occasionally = less than one third of the time
- Sometimes = between one and two thirds of the time
- Most of the time = more than two thirds of the time

<table>
<thead>
<tr>
<th>V1. Is there a delay before you can start to urinate?</th>
<th>Never</th>
<th>Occasionally</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2. Do you have to strain to continue urinating?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V3. Do you stop and start more than once while you urinate?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V4. How often do you feel that your bladder has not emptied properly after you have urinated?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V5. Would you say that the strength of your urinary stream is</td>
<td>Normal</td>
<td>Occasionally reduced</td>
<td>Sometimes reduced</td>
<td>Reduced most of the time</td>
<td>Reduced all of the time</td>
</tr>
</tbody>
</table>

**ICSmaleVS: sum scores V1 – V5 =**

<table>
<thead>
<tr>
<th>11. Do you have to rush to the toilet to urinate?</th>
<th>Never</th>
<th>Occasionally</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Does urine leak before you can get to the toilet?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Does urine leak when you cough or sneeze?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Do you ever leak for no obvious reason and without feeling that you want to go?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Do you leak urine when you are asleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. How often have you had a slight wetting of your pants a few minutes after you had finished urinating and had dressed yourself?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ICSmaleIS: sum scores I11 – I16 =**
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Hourly</th>
<th>Every 2 hours</th>
<th>Every 3 hours</th>
<th>Every 4 hours or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you pass urine during the day?</td>
<td>None</td>
<td>One</td>
<td>Two</td>
<td>Three</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nocturia</th>
<th>None</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the night, how many times do you have to get up to urinate, on average?</td>
<td>Not at all</td>
<td>A little</td>
<td>Somewhat</td>
<td>A lot</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality of Life</th>
<th>Not at all</th>
<th>A little</th>
<th>Somewhat</th>
<th>A lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, how much do your urinary symptoms interfere with your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Donovan, Peters, Abrams et al., 2000)
## Appendix 12. Overactive Bladder Questionnaire – Short Form (OAB-q short form)

### During the past 4 weeks, how bothered have you been by......

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>A great deal</th>
<th>A very great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. An uncomfortable urge to urinate?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. A sudden urge to urinate with little or no warning?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Accidental loss of small amounts of urine?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Night-time urination?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Waking up at night because you had to urinate?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Urine loss associated with a strong desire to urinate?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### During the past 4 weeks, how often have your bladder symptoms......

<table>
<thead>
<tr>
<th></th>
<th>None of the time</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>A fair bit of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Caused you to plan “escape routes” to toilets in public places?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Made you feel like there is something wrong with you?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Interfered with your ability to get a good night’s rest?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Made you frustrated or annoyed about the number of times you need to go to the toilet?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Made you avoid activities away from toilets (eg. walks, running, hiking)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Awakened you during sleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Caused you to decrease your physical activities (exercising, sports, etc.)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Caused you to have problems with your partner or spouse?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Made you embarrassed while travelling with others because of needing to make a toilet stop?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Affected your relationships with family and friends?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Interfered with your getting the amount of sleep you need?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Caused you embarrassment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Caused you to locate the closest toilet as soon as you arrive at a place you have never been?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Scoring the OAB-q short form**

To calculate a symptom severity score, create a summed score from the listed items and use the formula below the table to transform the value. This will provide symptom scores where higher score values are indicative of greater symptom severity or bother and lower scores indicate minimal symptom severity.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum Item Values Part A</th>
<th>Lowest and Highest Possible Raw Scores</th>
<th>Possible Raw Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Severity</td>
<td>1 - 6</td>
<td>6, 36</td>
<td>30</td>
</tr>
</tbody>
</table>

Transformation for Symptom Severity raw scores ONLY:

Transformed Score = \frac{(Actual raw score – Lowest possible raw score)}{Possible raw score range} x 100

For the health related quality of life (HRQL) subscales (coping, sleep, and social), create summed scores of the listed items for each individual subscale. Use the formula below the table to transform all values. Higher scores will be indicative of better HRQL.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum Item Values Part B</th>
<th>Lowest and Highest Possible Raw Scores</th>
<th>Possible Raw Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total HRQL Score</td>
<td>1 - 13</td>
<td>13, 78</td>
<td>65</td>
</tr>
</tbody>
</table>

Formula for transformation of HRQL raw scores:

Transformed Score = \frac{(Highest possible score – Actual raw score)}{Possible raw score range} x 100

**Missing Items**

For the subscale analyses, if < 50% of the scale items are missing, the scale should be retained with the mean scale score of the items present used to impute a score for the missing items. If > 50% of the items are missing, no scale score should be calculated, the subscale score should be considered missing.
Appendix 13. Resource implications

Full implementation of the recommendations contained in this guideline requires adequate financial resources to provide sufficient staffing levels to enable timely secondary level continence assessment and management of community dwelling older people with urinary incontinence. Such staffing includes access to a trained continence clinician such as a continence advisor or continence physiotherapist with experience in management of pelvic floor dysfunction, and a full allied health team to address issues such as diet, mobility and access, medications, swallowing, carer support, etc.

Two items of equipment have been recommended for use within this guideline.
1. A bladder scanner provides a reliable, non-invasive means of assessing bladder volume, and should be viewed as a necessary item of equipment. A scanner is particularly useful for providing an objective assessment of pre and post void residual urine.

2. Electronic scales capable of measuring small changes in pad weight (in grams) are also recommended in services planning to use the objective home pad weigh test.

Other resources which should be routinely available to continence services are urinalysis reagent strips, sterile specimen jars, etc. As the reagent strips need to be kept cool, it is recommended that insulated carry bags and ice packs are available in services where clinicians need to travel to visit clients in their own homes.
### Table 22: Medications that can cause or aggravate urinary incontinence

NB. This table is intended for people with knowledge of medications. For further information or explanation, the reader is advised to consult a pharmacist.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Mechanism</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>α - adrenergic blockers</td>
<td>Urethral resistance; proximal urethral pressure; sphincter relaxation</td>
<td>Stress incontinence</td>
</tr>
<tr>
<td>eg prazosin, terazosin, phenoxybenzamine, tamsulosin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>α - adrenergic agonists</td>
<td>Stimulation of constriction of urethral sphincter → urethral resistance; proximal urethral pressure</td>
<td>Hesitancy, straining to void → urinary retention → overflow incontinence</td>
</tr>
<tr>
<td>eg pseudoephedrine, ephedrine, phenylpropanolamine, phenylephrine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACE-Inhibitors</td>
<td>Cough induced sphincter weakness</td>
<td>Stress incontinence</td>
</tr>
<tr>
<td>eg captopril, enalapril, fosinopril, lisinopril, perindopril</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>Urinary volume; diuretic effect, sedation, altered mental state, depressed central inhibition of micturition</td>
<td>Frequency, urgency, nocturia, confusion, sedation, immobility</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>Interferes with cholinergic innervation of detrusor → detrusor relaxation; force of detrusor contractions</td>
<td>Hesitancy, straining to void, urinary retention → overflow incontinence; constipation</td>
</tr>
<tr>
<td>eg antihistamines, disopyramide, tricyclic antidepressants, thioridazine, haloperidol, benztrpine, benzhexol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>β - adrenergic antagonists</td>
<td>Sphincter contraction</td>
<td>Hesitancy, straining to void, urinary retention → overflow incontinence</td>
</tr>
<tr>
<td>eg propranolol, atenolol, metoprolol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>β - adrenergic agonists</td>
<td>Sphincter relaxation</td>
<td>Stress incontinence</td>
</tr>
<tr>
<td>eg terbutaline, salbutamol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caffeine</td>
<td>Diuresis</td>
<td>Polyuria, frequency, urgency, confusion, delirium</td>
</tr>
<tr>
<td>Cholinergics</td>
<td>Detrusor activity (instability), urgency</td>
<td>Urge incontinence</td>
</tr>
<tr>
<td>eg bethanechol, cisapride</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetylcholinesterase inhibitors</td>
<td>Cholinergic effect, detrusor instability, frequency, urgency</td>
<td>Urge incontinence, overflow incontinence</td>
</tr>
<tr>
<td>eg donepezil, galantamine, rivastigmine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium channel blockers</td>
<td>Smooth muscle relaxation → detrusor relaxation, force of detrusor contractions; residual volume</td>
<td>Hesitancy, straining to void, urinary retention → overflow incontinence; constipation</td>
</tr>
<tr>
<td>eg verapamil, diltiazem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medications</td>
<td>Effects</td>
<td>Side effects</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Centrally-acting antihypertensives</strong>&lt;br&gt;eg methyldopa, reserpine, guanethidine</td>
<td>↑ - adrenergic receptor inhibition; ↓ proximal urethral pressure</td>
<td>Leakage</td>
</tr>
<tr>
<td><strong>Diuretics</strong>&lt;br&gt;eg frusemide, hydrochlorothiazide, indapamide</td>
<td>↑ Urine volume → stimulates contractions</td>
<td>Polyuria, frequency, urgency → exacerbates urge incontinence; confusion, delirium, constipation</td>
</tr>
<tr>
<td><strong>Muscle relaxants</strong>&lt;br&gt;Urethral sphincter relaxation</td>
<td></td>
<td>Polyuria, frequency, urgency</td>
</tr>
<tr>
<td><strong>Narcotics</strong>&lt;br&gt;eg morphine, oxycodone, tramadol</td>
<td>↓ bladder contractions; ↑ smooth muscle tone; ↓ response to voiding cues</td>
<td>Urinary retention; ↓ voluntary control to void; overflow, functional incontinence, constipation, confusion</td>
</tr>
<tr>
<td><strong>NSAIDs</strong>&lt;br&gt;eg indomethacin, diclofenac, piroxicam</td>
<td>↑ prostaglandin inhibition in bladder smooth muscle → ↓ force of detrusor contractions</td>
<td>↓ Detrusor contractions; urinary retention</td>
</tr>
<tr>
<td><strong>Tiaprofenic acid</strong>&lt;br&gt;Enhance detrusor activity; frequency, urgency</td>
<td></td>
<td>Urgency, cystitis-like symptoms</td>
</tr>
<tr>
<td><strong>Psychotropics</strong>&lt;br&gt;Constipation, confusion, sedation, parkinsonism</td>
<td></td>
<td>Overflow, functional, stress incontinence</td>
</tr>
<tr>
<td><strong>eg amisulpride, clozapine, haloperidol, olanzapine, quetiapine, risperidone</strong></td>
<td>Sedation, impaired mobility</td>
<td>Functional incontinence</td>
</tr>
<tr>
<td><strong>eg benzodiazepines</strong></td>
<td>Anticholinergic action, sedation, confusion, parkinsonism, impaired mobility</td>
<td>Overflow, functional incontinence</td>
</tr>
<tr>
<td><strong>eg chlorpromazine, pericyazine, thioridazine, trifluoperazine</strong></td>
<td>Polydipsia, nocturia</td>
<td>Polyuria, frequency, urgency → exacerbates urge incontinence; functional incontinence</td>
</tr>
<tr>
<td><strong>eg lithium</strong></td>
<td>Enhance detrusor activity (instability), sedation, impaired mobility</td>
<td>Urge, functional incontinence</td>
</tr>
<tr>
<td><strong>eg SSRIs (selective serotonin reuptake inhibitors), (paroxetine has some anticholinergic effects), moclobemide, venlafaxine</strong></td>
<td>Anticholinergic action, sedation, impaired mobility</td>
<td>Overflow, functional incontinence</td>
</tr>
<tr>
<td><strong>eg TCAs (tricyclic antidepressants – eg amitriptyline, imipramine, doxepin, dothiepin), and other antidepressants (eg. mianserin, mirtazapine, reboxetine)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 23: Medications with anticholinergic effects

<table>
<thead>
<tr>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amantadine, amitriptyline, atropine</td>
</tr>
<tr>
<td>Belladonna alkaloids, benzhexol, biperiden, brompheniramine</td>
</tr>
<tr>
<td>Chlorpheniramine, chlorpromazine, clomipramine, clozapine, cyclazine</td>
</tr>
<tr>
<td>Chlorpheniramine, chlorpromazine, clomipramine, clozapine, cyclizine</td>
</tr>
<tr>
<td>Clonidine, cyprine, cyclopiamine, cyclopentolate</td>
</tr>
<tr>
<td>Cyproheptadine</td>
</tr>
<tr>
<td>Glycopyrrolate</td>
</tr>
<tr>
<td>Homatropine, hyoscine (butylbromide or hydrobromide)</td>
</tr>
<tr>
<td>Imipramine, ipratropium (nebulised)</td>
</tr>
<tr>
<td>Mianserin</td>
</tr>
<tr>
<td>Nortriptyline</td>
</tr>
<tr>
<td>Orphenadrine, oxybutynin</td>
</tr>
<tr>
<td>Pericyazine, pheniramine, pimozide, pizotifen, promethazine, propantheline</td>
</tr>
<tr>
<td>Solifenacin</td>
</tr>
<tr>
<td>Tiotropium, tolterodine, trimeprazine, trimipramine, tripolidine, tropicamide</td>
</tr>
</tbody>
</table>


### Table 24: Medications for treatment of the overactive bladder

<table>
<thead>
<tr>
<th>Drug</th>
<th>Efficacy</th>
<th>Side Effects</th>
<th>Initial Dose</th>
<th>Max dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propantheline</td>
<td>++</td>
<td>+++</td>
<td>15mg 2 x day</td>
<td>30mg 3 x day</td>
</tr>
<tr>
<td>Imipramine</td>
<td>+</td>
<td>++</td>
<td>10mg night</td>
<td>20mg 3 x day</td>
</tr>
<tr>
<td>Oxybutinin</td>
<td>+++</td>
<td>++</td>
<td>2.5mg night</td>
<td>5mg 3 x day</td>
</tr>
<tr>
<td>Tolterodine</td>
<td>+++</td>
<td>+</td>
<td>1mg night</td>
<td>2mg 2 x day</td>
</tr>
<tr>
<td>Darifenacin</td>
<td>+++</td>
<td>+</td>
<td>7.5mg 1 x day</td>
<td>15mg 1 x day</td>
</tr>
<tr>
<td>Solifenacin</td>
<td>+++</td>
<td>+</td>
<td>5 mg 1 x day</td>
<td>10mg 1 x day</td>
</tr>
</tbody>
</table>

Note that, going down table, there is an increase in effectiveness and a corresponding decrease in side effects (Bird, 2004).
**Table 25: Medications for the treatment of urinary incontinence and possible side-effects**

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>Mechanism of Action</th>
<th>Type of Incontinence</th>
<th>Potential Adverse Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergic and Antispasmodics</td>
<td></td>
<td></td>
<td>Dry mouth, blurred vision, elevated intraocular pressure, delirium, constipation</td>
</tr>
<tr>
<td>Imipramine*</td>
<td>Increases bladder capacity</td>
<td>Urge or mixed with urge predominant</td>
<td></td>
</tr>
<tr>
<td>Oxybutinin</td>
<td>Diminishes involuntary bladder contractions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolterodine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propantheline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darifenacin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solifenacin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topical Oestrogens</td>
<td></td>
<td></td>
<td>Local irritation (topical), medical assessment required to ascertain risks associated with long term use, contraindications</td>
</tr>
<tr>
<td>Oestriol (Ovestin)</td>
<td>Strengthens periurethral tissues</td>
<td>Urge associated atrophic vaginitis Stress</td>
<td></td>
</tr>
<tr>
<td>Oestradiol (Vagifem)</td>
<td>Increases periurethral blood flow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alpha-adrenergic agonists</td>
<td></td>
<td></td>
<td>Headache, tachycardia, elevated blood pressure</td>
</tr>
<tr>
<td>Pseudoephedrine</td>
<td>Promotes urethral closure</td>
<td>Stress</td>
<td></td>
</tr>
<tr>
<td>Alpha-adrenergic antagonists</td>
<td></td>
<td></td>
<td>Postural hypotension</td>
</tr>
<tr>
<td>Prazosin</td>
<td>relaxes smooth muscle of urethra and prostatic capsule</td>
<td>Urge and related storage symptoms associated with benign prostatic enlargement</td>
<td></td>
</tr>
<tr>
<td>Tamsulosin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terazosin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serotonin and noradrenaline re-uptake inhibitor Duloxetine**</td>
<td>Causes increased contraction of urethral sphincters during urine storage</td>
<td>Stress</td>
<td>Nausea</td>
</tr>
</tbody>
</table>

*Imipramine may also cause postural hypotension and cardiac conduction disturbances

**Duloxetine available in Australia but not indicated for continence by the Therapeutic Goods Administration.

Based upon Kane, Ouslander, & Abrass, 2004.
Table 26: Medications potentially impairing continence in older women

<table>
<thead>
<tr>
<th>Class and Examples</th>
<th>Mechanism(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergics (antipsychotics; tricyclic antidepressants; diphenhydramine)</td>
<td>Impaired detrusor contractility, retention, delirium, constipation/faecal impaction</td>
</tr>
<tr>
<td>Loop diuretics (furosemide)</td>
<td>Anticholinergic actions, sedation, impaired mobility, rigidity, constipation/faecal impaction</td>
</tr>
<tr>
<td>Sedative/hypnotics (lorazepam, alprazolam)</td>
<td>Sedation, disorientation, delirium, impaired mobility, sleep alteration</td>
</tr>
<tr>
<td>Narcotic analgesics</td>
<td>Impaired detrusor contractility, retention, delirium, constipation/faecal impaction</td>
</tr>
<tr>
<td>α-adrenergic blockers</td>
<td>Stress incontinence</td>
</tr>
<tr>
<td>Calcium channel blockers</td>
<td>All: impaired detrusor contractility, retention</td>
</tr>
<tr>
<td></td>
<td>Nifedipine: nocturnal polyuria from pedal oedema</td>
</tr>
<tr>
<td>ACE inhibitors</td>
<td>Stress incontinence from cough</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Rapid diuresis, frequency, urgency, sedation, delirium, immobility</td>
</tr>
<tr>
<td>Anticonvulsants (gabapentin, pregabalin)</td>
<td>Nocturnal polyuria from pedal oedema</td>
</tr>
<tr>
<td>Thiazolidinediones (pioglitazone, rosiglitazone)</td>
<td>Nocturnal polyuria from pedal oedema</td>
</tr>
<tr>
<td>Nonsteroidal anti-inflammatory agents</td>
<td>Nocturnal polyuria from pedal oedema; may impair detrusor contractility</td>
</tr>
<tr>
<td>Cholinesterase inhibitors</td>
<td>Theoretical interference with antimuscarinic agents</td>
</tr>
</tbody>
</table>

### Table 27: Medications that may cause constipation

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioids</td>
<td>Morphine, Oxycodone, Codeine, Fentanyl, Buprenorphine</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>Belladonna, Hyoscine, Oxybutinin, Tolterodine, Darifenacin, Solifenacin</td>
</tr>
<tr>
<td>Tricyclic antidepressants</td>
<td>Amitriptyline; Nortriptyline, Impramine</td>
</tr>
<tr>
<td>Calcium Channel blockers(some)</td>
<td>Verapamil</td>
</tr>
<tr>
<td>Antiparkinsonian drugs</td>
<td>Amantadine, Benztropine</td>
</tr>
<tr>
<td>Sympathomimetics</td>
<td>Ephedrine, Terbutaline, Pseudoephedrine, Salbutamol</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>Chlorpromazine, Clozapine, Thioridazine</td>
</tr>
<tr>
<td>Diuretics</td>
<td>Frusemide, Indapamide, Hydrochlorothiazide</td>
</tr>
<tr>
<td>Antihistamines</td>
<td>Promethazine, Diphenhydramine, Dexchlorpheniramine</td>
</tr>
<tr>
<td>Iron Supplements</td>
<td>Ferrous sulphate</td>
</tr>
<tr>
<td>Calcium Supplements</td>
<td>Calcium carbonate</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>Phenytoin, Clonazepam</td>
</tr>
<tr>
<td>Antihypertensives (some)</td>
<td>Prazosin, Methyldopa, Propranolol</td>
</tr>
<tr>
<td>Anti-inflammatories</td>
<td>Ibuprofen, Diclofenac</td>
</tr>
<tr>
<td>Polystyrene resins</td>
<td>Resonium A, Calcium Resonium</td>
</tr>
<tr>
<td>Cholestyramine</td>
<td>Questran</td>
</tr>
<tr>
<td>Laxative abuse</td>
<td>All should be considered</td>
</tr>
<tr>
<td>Antidiarrhoeals</td>
<td>Loperamide, Diphenoxylate/Atropine</td>
</tr>
<tr>
<td>Antispasmodics</td>
<td>Dicyclomine, Hyoscine</td>
</tr>
</tbody>
</table>

*Based upon Ratnaike, Milton & Nigro, 2000; Woodward, 2002*

### Table 28: Medications that may cause diarrhoea

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular drugs</td>
<td>Methyldopa, Digoxin, Quinidine, Propanolol, Hydralazine, ACE inhibitors</td>
</tr>
<tr>
<td>Central nervous system drugs</td>
<td>Laxative abuse or overuse, Lactulose, Antacids (Magnesium salts), H2 antagonists, Proton pump inhibitors, Cholestyramine, Olsalazine, Misoprostol, Cisapride</td>
</tr>
<tr>
<td>Gastrointestinal drugs</td>
<td>Colchicine, Indomethacin, Auranofin, Naproxen, Phenylbutazone, Mefenamic acid</td>
</tr>
<tr>
<td>Musculoskeletal drugs</td>
<td>Anticholinergic agents, Levodopa, Alprozolam, Lithium, Fluoxetine, Donepezil, Galantamine</td>
</tr>
<tr>
<td>Endocrine system drugs</td>
<td>Oral hypoglycaemic agents, Clofibrate, Thyroxine</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Antibiotics Clindamycin, Amoxycillin (+/- Clavulanic acid), Ampicillin, Cephalosporins, Neomycin, Erythromycin, Antimetabolites 5-fluorouracil, Methotrexate Osmotic cathartics, Magnesium containing antacids, Lactulose, Sorbitol, Acarbose</td>
</tr>
</tbody>
</table>

*Ratnaike, Milton & Nigro, 2000*
References


References


References
References


MASS (Medical Aids Subsidy Scheme). (2007). First steps in the management of incontinence in community-dwelling older people. a clinical practice guideline for primary clinicians (registered nurses and allied health professionals) (Second ed.): HACC/MASS Continence Project, Queensland Health.


References


Index

A
Abdominal muscles........................................76-77
Adherence to treatment.................................80-91
Adrenergic agonists .......................................98, 135, 138
Adrenergic antagonists ................................101, 135, 138
Algorithm - clinical referral ..........................103-104
Algorithm - management of urinary incontinence in frail older people ......................105
Anal reflex ..................................................24, 27
Anticholinergics ........................................59, 100-102, 122, 136-140
Assessment .............................................19-32, 35, 42-43, 103-105

B
Benign prostatic hyperplasia (BPH)...............40-44
Bladder diary .............................................24-26, 28-29, 42, 47, 88-89
Bladder neck obstruction ................................34, 36-37
Bladder outlet obstruction (BOO) ..................34-35, 40-41, 44, 60, 101
Bladder overactivity .................................[see detrusor overactivity]
Bladder over-distension ................................30, 34, 37, 54, 58
Bladder scan/scanner ..................................24, 30-32, 35, 65, 69, 134
Bladder training .......................................64, 68-70, 102, 121-122
Bothersomeness .......................................[see quality of life]
Botulinum toxin .........................................100
Breathing ..................................................75-77, 82, 122

C
Catheters - indwelling ....................................60-63
Clean intermittent self catheterisation .............54-59, 116-117
Clinical expert development panel ...............106
Cognitive impairment .................................18, 22-23, 64-65, 118-120
Continence aids ........................................92-93
Cranberries .............................................56, 62, 101
Credé manoeuvre .......................................57-58

D
Dermatitis ......................................................93-96
Detrusor overactivity .................................16-17, 22, 25-26, 99-100
Detrusor sphincter dyssynergia .......................17, 21, 33
DIAPPERS ................................................10, 65, 69, 103-105
Double voiding ..........................................58, 105
Duloxetine ..............................................99, 138

E
Examination – abdominal ..............................24, 27
Examination – external genitalia ...................27, 103
Examination – neurological .........................24, 27, 103
Examination – rectal ..................................24, 27-28, 43, 103
Examination – sensory ................................27
Examination – vaginal ................................28, 67, 69, 103
External reviewers ......................................107

F
First Steps ..............................................8, 16, 19, 65, 69, 103
Flow rate ...............................................13, 33-34, 40, 43, 60
Frequency ............................................18, 25, 29, 33, 41-42, 64, 68, 121-122
Functional incontinence ..............................16, 136

G
Glossary of terms ........................................9
GRADE ..................................................47, 111, 113-115

H
Habit retraining .........................................64-66, 118, 120
Health promotion model ..............................87-88
Hesitancy ..................................................35-36, 40, 135

I
ICIQSF2 ..................................................49-50, 52, 129
ICSmaleSF ............................................42, 49-50, 52, 130-131
IIQSF7 ....................................................50-52, 128
Indigenous ...............................................51
Infravesical obstruction ..............................40-41, 43
Intermittent stream ....................................35

K
Kings health questionnaire .........................50-51, 124-126

L
Lower urinary tract symptoms (LUTS) ............18, 33-36

M
Medications .............................................34-35, 98-102, 105, 135-140
Mixed urinary incontinence .........................16, 25, 121
Index

N
Neurological disorders..........................17, 24, 27, 34, 37
Neuromodulation ...............................................................108
Nocturia 17-18, 25-26, 29, 33, 41-42, 64, 121, 135-136

O
OABqSF .................................................................49-50, 52, 133
Oestrogen ..............................................................17, 28, 98-99, 101-102
Outcome measures ..................................................47-53, 112
Overactive bladder syndrome ...............17, 49, 52, 102
Overflow incontinence ...............................16, 135-136

P
Pad test/s .................................................................48-49
Parasympathetic nerves .............................................13-14
Pelvic floor muscle (PFM) .................................................14, 27-28
Pelvic floor muscle assessment ..........................72-75
Perineal assessment tool .............................................94
Pharmacology/pharmacological management ............................................(see medications)
Polyuria ...............................................................21-22, 103, 135-136, 139
Pontine micturition centre (PMC) ............................................14-15, 21
Post micturition dribble ............................................18, 44, 79
Post void residual (PVR) ..............................................24, 27, 30-31, 33-37, 41, 65, 69, 100
Postural control ..........................................................75-76, 78
Prolapse ...............................................................28, 34, 36, 38, 72, 75, 103, 105
Prompted voiding ......................................................64-66, 118-122
Prostate .................................................................17, 40-42, 44-45, 70, 79

Q
Quality of life (QoL) ..........................................................23, 42, 47, 49-52, 124-126, 131, 133

R
Reassurance and advice ......................................43, 122
Red flags ...............................................................8, 65, 69, 103-104
Resource implications ..............................................67, 70, 113, 134
Respiratory muscles ...........................................................75
Reversible urinary incontinence ..........................8, 16, 65, 69

S
Sacral micturition centre (SMC) ..............................14-15
Sacral micturition reflex (SMR) ......................................................14
Self efficacy .................................................................83-88, 90
Serona Repens (Saw Palmetto) ....................................101
Sensory urgency .............................................................17
Skin care .................................................................94-97
Slow stream .................................................................36
Somatic nerves ...............................................................13-15
Sphincteric incompetence .............................................16, 18
Storage - physiology .......................................................15
Storage symptoms ..........................................................18, 37, 64, 138
Straining to void .......................................................18, 35-36, 57, 135
Supraspinal influence .....................................................14-15
Surgery - men .....17, 40-41, 45-46, 70, 79, 103, 105
Surgery - women ............................................................17, 37-38, 103, 105
Sym pathetic nerves ..........................................................13-15
Symptom score (IPSS) ..................................................42, 52
Terminal dribble ..............................(see post micturition dribble)
Trans theoretical model .............................................80-81
Toilet programs ......................................................64-66, 118-122

U
UDI .................................................................50-51, 127
Urinalysis ...............................................................19, 24, 28, 42, 63, 105, 134
Urinary incontinence - causes ..............................................16-17, 25
Urinary retention .............................................................21, 30, 33-35, 40, 58, 100-101, 135-136, 139
Urinary tract infection (UTI) ......................................................17, 28, 42, 60, 101, 103, 105
Urodynamics .............................................................25, 41, 43, 59, 63
Uroflowmetry .............................................................35, 43, 103
Urogenital distress inventory (UDI) .....................50-51, 127

V
Vaginal atrophy ..............................................................8, 27, 102-103, 105
Valsalva ...............................................................57-58, 116
Voiding dysfunction/symptoms ..........................................18, 33, 35-37, 64, 108
Voiding - physiology .....................................................13-14

W
Watchful Waiting ................................(see reassurance)