• Training of Australian health care providers in pessary management for women with pelvic organ prolapse: outcomes of a novel program
  Neumann PB, Scammell AE, Burnett AM, Thompson JA, & Briffa NK

• The standardisation of terminology of lower urinary tract function in children and adolescents: Update report from the Standardisation Committee of the International Children’s Continence Society
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Editorial

Welcome to 2015 to our readership and members of the Continence Foundation of Australia and the New Zealand Continence Association. The Editorial Committee is looking forward to again bringing you an informative journal for 2015.

I personally, and the Editorial Committee as a whole, wish to thank those members of the committee who have retired (for now) including long-time editorial committee member Winsome St John who was instrumental in redeveloping the journal to a full peer review journal from 2004 and expanding the journal’s reach via bibliographic databases. Johan Gani has also retired and we thank him for his input and assistance over the past two years.

We welcome those of our editorial committee who have renominated: Clara Shek, Pauline Chiarelli, Jenny Kruger, Debbie Rigby, Shona McKenzie Margaret Sherburn, Vincent Tse and Prof Kate Moore. We welcome our new editorial committee members Joan Ostaszkiewicz and Wendy Bower who each brings a wealth of knowledge from the disciplines of nursing and physiotherapy respectively.

We encourage all who submitted abstracts to the well-attended joint meeting of CFA, UGSA and ICCS in Cairns in 2014, to consider publishing full papers in the journal.

We ask readers and members to please remember the journal when you have carried out research or evaluations and are looking to publish those results and please encourage your colleagues to consider submitting manuscripts to the journal. We welcome submissions from experienced and novice researchers, particularly for any material relevant to Australia and New Zealand.

Best wishes to you all and I hope to meet those who can attend the CFA meeting in Melbourne in November and the education days to be held in Auckland this year.

Mark Weatherall
Editor Australian and New Zealand Continence Journal
President New Zealand Continence Association
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Training of Australian health care providers in pessary management for women with pelvic organ prolapse: outcomes of a novel program

Abstract
In a novel program, experienced women's health practitioners (physiotherapists, nurses and medical practitioners) were trained in the clinical use of pessaries as a conservative management option for women with pelvic organ prolapse. The health practitioners were invited to complete a survey after the training course to find how many had started to provide pessary care in their clinical practice and what barriers they had encountered. Of the 98 training course participants, 79 (82%) were continence and women's health physiotherapists, 15 (15%) were nurses and 4 (4%) medical practitioners. There was a 42% response rate to the survey questionnaire, which identified that 29% of respondents had started fitting pessaries within the first year of the training course. This potentially increases access to pessary care for women seeking conservative management of their prolapse symptoms. A range of barriers was encountered. Ongoing research should facilitate an acceptance of the extension of women's health physiotherapy and nursing scope of practice to include the provision of pessary care in the Australian health care setting.

Keywords: Pessary, pelvic organ prolapse, physiotherapist, nurse, advanced scope practice.

Introduction
Support pessaries are recommended by the 5th International Consultation on Incontinence for the conservative management of pelvic organ prolapse (POP) (Level of Recommendation B)¹. Two national surveys, one of urogynaecologists in the United States (USA)² and the other of consultants in the United Kingdom (UK)³, suggest that the majority of their respondents use pessaries but receive “little or no training” in their use and have “limited experience” with pessary selection and fitting. Perhaps, not surprisingly, a USA survey of Medicare recipients found, that of 34,784 women identified with POP, only 11.6% were treated with a pessary⁴. The prescribing patterns of Australian gynaecologists and their use of pessaries is unknown. A discussion about the role of specialist nurses providing pessary care has recently been published⁵ and there are several reports of dedicated nurse-led clinics in Canada⁶,⁷ and the USA⁸. To date there have been no published reports on physiotherapists providing pessary care. In Australia, continence and women's health (C&WH) physiotherapists are often first-contact practitioners, providing conservative management for women with POP in the form of lifestyle advice and pelvic floor muscle training (PFMT), for which there is now Level 1A evidence⁹. The results of a trial of PFMT and concomitant pessary use are not yet reported¹⁰ but may provide empirical support to the strong biological rationale for the use of pessaries. Physiotherapists are trained to perform internal vaginal assessments and can perform POP-Q testing with good reliability¹¹ and so could potentially provide pessary-related care. Advancing the scope of physiotherapy practice to provide pessary-related care in addition to PFMT would enable women to receive comprehensive and timely care for their POP. We found no published reports of pessary training courses in...
Australia for any women’s health care providers or clinical practice guidelines (CPG) for pessary fitting.

In the absence of any published guidelines and before starting a training program, a CPG\(^1\) was developed to address the need for an evidence-based approach to pessary management. The CPG was developed with the support of the International Centre for Allied Health Evidence (iCAHE) at the University of South Australia, a group experienced in CPG development. To develop the CPG, a systematic review of the current literature was performed and extensive consultation undertaken with a multidisciplinary expert working party, consisting of a urogynaecologist, two gynaecologists, general medical practitioners (GPs), experienced continence nurses and C&WH physiotherapists. A CPG was published\(^2\) with the accompanying Management Pathway Algorithm\(^3\), providing a basis for multidisciplinary training in pessary care. Recent research suggests that teaching women pessary self-care, that is, how to remove, wash and re-insert their own pessary, is acceptable to women and reduces the risk of complications,\(^1,14\) so this aspect of pessary care was included in the CPG.

The CPG was subsequently accepted by the Royal College of General Practitioners, and nursing and physiotherapy professional bodies but is not yet endorsed by the Royal Australian College of Obstetrics & Gynaecology due to concerns about the quality control of the training program. Subsequently, the CPG was accepted by the National Health & Medical Research Council of Australia and is available through their guideline portal as well as the websites of the Continence Foundation of Australia (CFA) and iCAHE.

Three one-day courses, based on the CPG, were held to teach experienced health professionals the theory and practical skills needed to prescribe vaginal pessaries for women with POP. The training courses were open to medical practitioners as well as appropriately trained nurses and physiotherapists. We report here information collected from participants on registration and from feedback forms distributed after the course. We aimed to evaluate the change in clinical practice among the different health professionals after training in pessary management, any reports of safety issues or complications, and any barriers encountered to their provision of pessary care in clinical practice.

Method

Health professionals attending one of three one-day pessary training courses held in Adelaide (2010 and 2012) and Melbourne (2011) were asked to provide registration information about their clinical experience in the management of POP including any prior experience with prescribing and fitting pessaries. Questionnaires to evaluate changes in practice following the workshops were sent to all participants three, six and 12 months after the training course (Appendix 1). Participants had three opportunities to provide feedback. Responses were sought from participants about the number and type of pessaries fitted since the workshop, their level of confidence in pessary fitting, any serious complications associated with fitting and details of any barriers they may have encountered in implementing pessary management in their clinical practice. Where participants responded on more than one occasion, the responses were amalgamated.

The pessary training course

Courses were advertised through the CFA website and newsletter, the Australian Physiotherapy Association (APA) electronic news media and by word-of-mouth. Registration was open to medical practitioners, nurses and C&WH physiotherapists with experience in managing women with POP, who wished to develop their skills to work in advanced scope roles, prescribing pessaries for the management of POP.

The course curriculum included an overview of pelvic floor anatomy, the aetiology of POP, its assessment and management, evidence-based training on the theory of prescription and fitting of pessaries based on the CPG\(^2\), including self-care, possible complications and patient follow-up. In addition, participants received practical training on how to fit pessaries. In groups of three, participants learned to fit pessaries in live female models, with supervision from a gynaecologist or other health professional experienced in pessary care. The groups rotated through four ‘stations’ to broaden their experience.

Data analysis

The profession and employment location of course participants and survey respondents, use and intention to use pessaries, and barriers to pessary use are summarised by simple tabulation and proportions.

Results

Ninety-eight health professionals attended the three pessary workshops. Workshop participants included medical practitioners (two gynaecology registrars, one urologist, one geriatrician), continence nurses and C&WH physiotherapists from both the public and private sectors. Five participants reported previous experience with pessary fitting (two nurses, one physiotherapist, two medical practitioners). Details of the profession and employment status of course participants and respondents to the post-course questionnaires are shown in Table 1.

Forty-one attendees (42%) returned at least one post-workshop questionnaire and three of these respondents (one nurse,
one physiotherapist, one medical practitioner) had previously fitted a pessary. Data from the most current questionnaire regarding the number of pessaries fitted was used for analysis. The respondents were three nurses, 36 physiotherapists and two medical practitioners (Table 1). Eleven respondents (two nurses, seven physiotherapists, and two medical practitioners) representing 29% of those who had not previously fitted a pessary, started to prescribe and fit them after the workshop. Survey respondents reported no serious adverse events or complications.

Five (14%) C&WH physiotherapist respondents were preparing to start using pessaries and were in the process of setting up facilities for pessary care in their clinical practice at the time of returning the questionnaire.

Some clinicians encountered barriers to the prescription of pessary care at one of the three time points following the training course. Barriers included: time constraints, costs, suitable patients, confidence, support from medical colleagues and specific public sector issues, including lack of established protocols (Table 2).

**Discussion**

This paper reports on the outcomes of the first documented multidisciplinary training program for health professionals: continence nurses, C&WH physiotherapists and medical practitioners, to acquire the skills for prescribing and fitting support pessaries for women with POP. Of the respondents, 29% had started to use pessaries in their clinical practice in the following year. This is an encouraging result as it represents a greater availability of pessary care to women within the community. Providing pessary care is an extension of the scope of practice of nurses and physiotherapists, which will take time to develop and brings with it the requirement for negotiation and redefinition of roles within the health care team15.

Training on the courses was based on the CPG and accompanying management pathway algorithm12, which details a clinical pathway starting with patient screening and involving appropriate medical practitioners in a shared care model/team approach. The management algorithm provides interdisciplinary pathways, to address patient and practitioner safety issues. Both theoretical and practical training were provided by gynaecologists and other health professionals experienced in pessary fitting, while the participants were women’s health practitioners, already experienced in the management of women with POP. Included in the training was advice that should be given to patients regarding how to care for the pessary and use of the pessary, particularly during provocative physical activities or in the presence of physical illness such as a chest infection. The involvement in self-care anecdotally gave women a sense of greater control as well as potentially decreasing the incidence of complications11.

Our results show that 29% of the respondents had started prescribing and fitting pessaries over the following year. Some of the participants subsequently reported that they did not attend the training course with the intention of going on to fit pessaries but to be ‘up to date’ with the latest evidence on how pessaries could be used in clinical practice to supplement PFMT. As we did not anticipate this, there was no question about the intention of course participants with respect to pessary fitting, which possibly negatively impacted our ‘success rate’. Others, while not prescribing pessaries, reported that the training course gave them confidence to provide advice to women about the role of pessaries in POP management and to help women to manage pessary self-care when the pessary was fitted by a gynaecologist. Subsequent informal feedback indicated that other participants have incorporated pessary care into their clinical practice since this survey. For example, one C&WH physiotherapist had commenced a pessary clinic as part of a GP-run, multidisciplinary “Well Women” clinic, in collaboration with local GPs and a gynaecologist.

The survey results indicate that a small number of participants lacked confidence, particularly with respect to fitting less routine pessaries such as the ‘Gellhorn’ pessary. The need for

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**Table 1: Training course participants and questionnaire respondents by profession and employment status in either the public hospital and community or private sectors**

<table>
<thead>
<tr>
<th>Participants</th>
<th>N (%)</th>
<th>Participant employment: hospital &amp; community/private N (%)</th>
<th>Respondents N (%)</th>
<th>Responder employment: hospital &amp; community/private N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;WH physiotherapists</td>
<td>79 (81)</td>
<td>25 (33)/54 (67)</td>
<td>36 (46)</td>
<td>25 (32)/54 (68)</td>
</tr>
<tr>
<td>Continence nurses</td>
<td>15 (15)</td>
<td>14 (93)/1 (7)</td>
<td>3 (20)</td>
<td>3 (100)/0 (0)</td>
</tr>
<tr>
<td>Medical practitioners</td>
<td>4 (4)</td>
<td>3 (75)/1 (25)</td>
<td>2 (50)</td>
<td>2 (100)/0 (0)</td>
</tr>
</tbody>
</table>
Hydrophilic catheters are coated with a hydrophilic polymer that reacts with water to create a smooth, slippery coating on the surface of the catheter. Compared to uncoated catheters, hydrophilic catheters have been shown to reduce the incidence of urinary tract infections.1

more supervised training should be addressed in the planning of future courses, although the logistics of providing enough suitable ‘live models’ is a limiting factor. An alternative to this would be to have qualified mentors, such as local gynaecologists, to provide supervision with actual patients or other professional development opportunities, such as face-to-face or electronic meetings.

In order to address the issues of patient safety and the need for accountability of health professionals using pessaries, a national pessary database should be established to report basic data including complications from pessary use. This database has the potential to be a rich source of data and strong support for it was expressed by course participants.

These measures may provide some reassurance to health care practitioners that nurses and physiotherapists can provide safe and appropriate pessary care. This enables women with POP to receive health care in the context of holistic and accessible conservative management.

The respondents reported issues around scope of practice in the public sector. Physiotherapists are established as providers of care in a number of health care settings including emergency departments\textsuperscript{16}. Pessary fitting by health providers other than gynaecologists is an extension of their scope of practice, which requires ongoing discussion and evaluation. It is possible that future research will also establish the cost-effectiveness of having trained nurses and C&WH physiotherapists providing holistic conservative management for women with POP, that is, lifestyle advice, PFMT and pessary prescription, fitting and supervision.

GPs, as the coordinators of patient management, would benefit from education about conservative first-line management of POP involving PFMT and the prescribing and management of pessaries. Women are also not well informed about pessaries and may then not receive appropriate advice about them from GPs. For example, women may be told by their GP that pessaries are for old women and not suitable for an active younger woman. Research into the benefits of pessaries for younger women who wish to remain physically active but wish to avoid surgery is urgently needed. This is the age group commonly seen by C&WH physiotherapists.

One of the limitations of this study was the 42% response rate to the course evaluation questionnaires. We assumed that those who failed to return their questionnaires were not fitting pessaries, so that the numbers we have reported possibly reflect the actual number of clinicians now fitting pessaries.

**Conclusion**

Physiotherapists, nurses and medical practitioners were trained to prescribe and fit pessaries in an innovative program, extending the scope of practice for the C&WH physiotherapists and nurses. Following the training program, 29% of respondents subsequently incorporated pessary care into their clinical practice, increasing access to pessary care for women seeking conservative management of their prolapse symptoms. A range of barriers were encountered. High standards of training, interdisciplinary dialogue and education are needed to establish pessary care by physiotherapists and nurses within the Australian health care setting.
References


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Appendix 1:

Appendix 1

Pessary Workshop

Post workshop questionnaire

We wish to evaluate the effect of this workshop on your clinical practice. This questionnaire is an important component of the workshop so thank you for completing and returning it. Your response will also assist in the planning of future workshops.

Name (required):
____________________________________________________________

1. Profession

☐ Continence nurse advisor ☐ C&WH Physiotherapist ☐ Other – please specify

2. Approximately how many women with POP have you treated since the workshop?

☐ 0 ☐ 1 - 10 ☐ 10+

3. Have you started using any parts of the POPQ system in your clinical practice?

☐ Yes, all ☐ Yes, parts of it ☐ No

4. Have you started using validated questionnaires to evaluate POP symptoms, bother/ QOL?

☐ Yes ☐ No ☐ Sometimes

5. Have you prescribed and fitted any pessaries in your management of women with POP since the workshop?

☐ No ☐ Yes. If yes, how many pessaries have you fitted?_________

6. What type and number of pessaries have you prescribed/fitted?

☐ Ring ☐ Gellhorn ☐ Cube

☐ Other (please specify)

7. Do you feel confident in your pessary prescription?

☐ Yes ☐ No. If not, can you elaborate:

8. Do you feel confident in your pessary fitting?

☐ Yes ☐ No. If not, can you elaborate:

9. What have been the barriers to you using pessaries in your clinical practice?

______________________________________________________________

10. Have you been aware of any adverse outcomes or events for your patients associated with you prescribing and fitting pessaries?

☐ No ☐ Yes. If yes, please elaborate:

Thank you for completing and returning this questionnaire.
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Like many active women, Linda’s life was always busy with family, travelling for work and juggling social commitments. After encountering some serious health complications and undergoing a major operation a decade ago, Linda’s lifestyle changed substantially and led to her becoming reliant on intermittent catheters to manage her urinary incontinence.

“As a young woman, this really changed the way I looked at my life — and initially, not for the best. Mentally, having to deal with the process of catheterising regularly was a big challenge. I found myself deciding not to travel long distances or visit certain places because of my concerns around cleanliness and the potential for contracting urinary tract infections.”

Linda recently began using Hollister Advance Plus — an innovative and easy to use ‘touch free’ pre-lubricated catheter system.

“Advance Plus has removed many of my concerns about hygiene and health. I worry less about carrying around bulky catheter kits and finding clean restrooms — and can focus more on my lifestyle and freedom that this product offers me instead.”

Having worked with and cared for Linda for a protracted period of time, Debra McCormack, Continence Nurse at Gold Coast University Hospital, confirms that Linda’s concerns around health, cleanliness and privacy are universal amongst many patients who use catheters.

“Ease of use is critical to the general wellness of patients when it comes to using catheters regularly. Advance Plus intermittent catheters are an easy-to-use, intuitive product. Educating patients to catheterise with this system is simple, as the closed catheter system allows there to be less of an intense focus on their carrying around multiple products and looking for clean, private bathrooms.”

A key focus for Debra and other healthcare professionals who work in urology and continence education is helping their patients perfect their catheterisation technique, as patients can initially find this process both uncomfortable and confronting. “Infection control is a major issue — Advance Plus is a fully contained system which removes the concerns around ‘touching’ that patients have — particularly if they are prone to urinary tract infections, or simply can’t get to a clean restroom in which to catheterise.”

Linda, who is in her 40’s and hails from Queensland, has used both traditional catheters and the Advance Plus closed-system catheter. “Being pre-lubricated and totally hygienic, I prefer to use Advance Plus catheters. Before using this product, I really restricted my lifestyle — I based my movements and activities around when and where I could use a catheter safely and comfortably. I am very prone to urinary tract infections, and so feel a natural caution about using a catheter outside of my home. Few public restrooms are hygienic, and I can’t risk getting infections continually. Advance Plus helps me live a more active and engaged life by easing my worries about hygiene and privacy — it’s simple to use, requires no touching and is discreet.”

Debra is pleased that her patients can return to living full lives with the help of a product like Advance Plus. “When patients first start self-catheterising, they can feel really stigmatised and excluded from a society that literally has no idea of the complexity of their daily healthcare. The process around using traditional catheters not only takes a lot of time from one’s day — it is multi-step and requires immaculate hygiene, which the real world rarely offers!”

“Using catheters is something I’ll have to do for the rest of my life...Advance Plus makes this process easier and safer for me.”

Advance Plus is an ideal solution for those who feel restricted by their reliance upon traditional catheters by giving patients the confidence to enjoy an active lifestyle with a reduced focus on their medical concerns. As Linda says, “Using catheters is something I’ll have to do for the rest of my life. It has had a big impact on me, because of the many steps required to catheterise properly. Advance Plus makes this process easier and safer for me — I’m grateful that Advanced Plus exists because it has changed the way I think about myself and my life.”

The views expressed herein are those of the user and nurse only.
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The standardisation of terminology of lower urinary tract function in children and adolescents: Update report from the Standardisation Committee of the International Children’s Continence Society

Abstract

The impact of the original International Children’s Continence Society (ICCS) terminology document on lower urinary tract (LUT) function resulted in the global establishment of uniformity and clarity in the characterization of LUT function and dysfunction in children across multiple healthcare disciplines. The present document serves as a stand-alone terminology update reflecting refinement and current advancement of knowledge on paediatric LUT function. A variety of worldwide experts from multiple disciplines within the ICCS leadership who care for children with LUT dysfunction were assembled as part of the standardization committee. A critical review of the previous ICCS terminology document and the current literature was performed. Additionally, contributions and feedback from the multidisciplinary ICCS membership were solicited. Following a review of the literature over the last 7 years, the ICCS experts assembled a new terminology document reflecting current understanding of bladder function and LUT dysfunction in children using the resources from the literature review, expert opinion and ICCS member feedback. The present ICCS terminology document provides a current and consensus update to the evolving terminology and understanding of LUT function in children.

Keywords: Terminology, consensus, child, urinary bladder/physiology, urination disorders.

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Introduction

The standardization of terminology for paediatric bladder and bowel function is critical in providing a platform for optimal understanding, communication and treatment across multiple health care providers who care for children and adolescents with LUT dysfunction. Terminology that is applicable internationally is particularly pertinent due to the global prevalence of paediatric LUT dysfunction and the numerous specialists who treat these children and adolescents.

LUT dysfunction is a broad term that encompasses subsets of LUT dysfunction with different manifestations. The heterogeneity of symptoms is at times overlapping and at other times unique to the subsets of LUT dysfunction. Universally accepted terminology of paediatric LUT dysfunction is thus imperative to reduce confusion among providers. Standardized terms are also critical for comparing research and study outcomes to optimally promote investigative understanding of paediatric LUT dysfunction.

The ICCS is a unique organization whose members comprise multiple disciplines and specialties from almost every continent that care for children with bladder and bowel incontinence. Thus, the ICCS is uniquely positioned to provide guidance in the standardization of terminology for bladder and bowel dysfunction (BBD) in children and adolescents.

Over the last decade, the second report from the Standardization Committee of the ICCS1 has propagated definitions and established standardized terminology that allowed for clarity of communication. The impact of the ICCS-proposed terminology on the body of literature of paediatric LUT function has been evaluated2. The importance of paediatric urinary incontinence is supported by the finding of a 49% increase in publications from 2002–2005 to 2007–2010 (55 to 82 per year) that focus on paediatric LUT function. Additionally, there was approximately a fourfold increase in the likelihood of usage of ICCS recommended terminologies post-ICCS guideline publication (OR: 4.19, 95% CI: 3.04–5.78, P < 0.001). It is noteworthy that there was no significant geographical variation in adopting ICCS terminology. Despite this significant impact of the global usage of ICCS terminology, approximately 25% of studies published between 2007 and 2010 contained obsolete terminologies3. Similar to the dynamic flux of knowledge and understanding within medicine, the terminology for paediatric bladder and bowel function is dynamic.

This document on ICCS terminology for paediatric bladder and bowel function serves as a stand-alone terminology update reflecting refinement and advancement of knowledge on these systems.

Adherence to the updated terminology is followed at all ICCS courses and workshops and it is encouraged that all investigators and clinicians who publish on this topic utilize the ICCS recommended terminology. To delineate manuscripts and publications that follow the ICCS guidelines regarding terminology we recommend future manuscripts include the text “Terminology adheres to standards recommended by the ICCS except where specifically noted”.

Materials and methods

A variety of worldwide experts from multiple disciplines who care for children with LUT dysfunction were assembled. The standardization committee consisted of active members and leaders of the ICCS that have extensively published on several facets of BBD and all of the ICCS documents published in the last four years.

Healthcare disciplines included urology, nephrology, gastroenterology, general and developmental paediatrics, physical therapy, psychology and psychiatry. The standardization committee emanated from North and South America, Europe, the Middle East, Africa, Australia and Asia. A critical review of the original ICCS terminology document and the current literature was performed.

Additionally, input from the multidisciplinary ICCS membership was solicited.

This terminology document represents the third published standardization on terminology for LUT function and enhances previous ICCS documents1,5. Recognition and reference to the terminology on LUT function by the International Continence Society (ICS)4 as well as the joint terminology for female pelvic floor dysfunction by the International Urogynecological Association (IUGA) and ICS5 were employed to be current and inclusive of other global organizations and disciplines that also deal with continence. Additionally, terms and definitions employed by the new Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)6,7 were considered and the ICD-10 medical classification list from the World Health Organization8 was referenced.

This update is not intended to serve as a guideline for clinical treatment. There are numerous previous ICCS documents outlining treatment for specific LUT and associated co-morbid conditions9-16. This terminology update follows the prior ICCS terminology outline of establishing syntax to properly convey symptoms of LUT dysfunction and to affirm terminology for investigative tools, signs, conditions and treatment parameters as they pertain to LUT function and dysfunction. The reader is referred to the prior ICCS communications for a comprehensive description of the pathophysiology. We have updated the
relevance of age to bladder and bowel function and discuss the commonality of bowel emptying issues with bladder function. We recognize that we are an organization whose primary expertise is in urinary continence and bladder function but equally acknowledge a close relationship between bowel and bladder function.

Thus, the importance of bowel related terms in relation to bladder function is emphasized.

Terminology
Bladder and bowel dysfunction (BBD)
Due to the aforementioned relationship between the bladder and bowel, concomitant bladder and bowel disturbances have been labelled as BBD. We discourage using the term dysfunctional elimination syndrome (DES) as this connotes a particular abnormality or condition. We recommend BBD as a more descriptive comprehensive term of a combined bladder and bowel disturbance that does not explain pathogenesis but rather encompasses this parallel dysfunction. BBD is an umbrella term that can be subcategorized into LUT dysfunction and bowel dysfunction. (Figure 1).

When the term dysfunction or disorder is used, it represents clinical significance and relevance. In a research document or reference, authors should specify and provide support for using the term BBD. In the absence of any co-morbid bowel dysfunction, the term LUT dysfunction alone suffices.

Symptomatic terms
Symptoms are classified according to their relation to the storage and/or voiding phase of bladder function. Although a symptom may occur only once or rarely, this does not necessarily make it a condition. Symptoms are variable and duration of a symptom may alter the perception of its relevance. Nevertheless, duration of time is beneficial in characterizing symptoms.

Terminology used for LUT symptoms will focus on descriptive rather than quantitative language, as quantitative data to define symptomatic terms is lacking. Age of the child is particularly relevant when applying terminology for paediatric bladder function. Our reference point for LUT symptoms is ≥ 5 years of age as this age is used by the DSM-5 and the International Classification of Diseases-10 (ICD-10) to characterize urinary incontinence disorders8,9. For functional bowel dysfunction the minimum age is 4.0 years. We recognize the variability and maturational aspect of LUT function10 and fully acknowledge there are children who have voluntary control over LUT function < 5 years of age; therefore, this terminology document may be selectively applicable to younger cohorts of children. Other influences impacting bladder function and continence include the developmental level of the child11 as well as any behavioural disorders12.

Storage symptoms
Increased or decreased voiding frequency. Voiding frequency is variable and is influenced by age13 as well as by diuresis and fluid intake14, more so than bladder capacity. Normative data in population surveys are mixed. In a small, cross-sectional analysis of healthy school-aged children, approximately 95% of 7 - 15 year old children will void between three to eight times per day15; population surveys in larger sample sizes report that most seven year olds will void between three to seven times daily16 whereas in another large population survey most children between 3 - 12 years of age void five to six times per day17.

Based on the large surveys and the previous terminology document1, the panel continues to propose the definition of increased daytime urinary frequency in those children who void ≥8x per day and decreased daytime urinary frequency for the ones who void ≤3x per day. Voiding frequency may not be fully appreciated unless a formal voiding frequency/volume chart or voiding diary is collected.

Incontinence. Urinary incontinence means involuntary leakage of urine; it can be continuous or intermittent. The subdivisions of incontinence include continuous incontinence, intermittent incontinence, daytime incontinence and enuresis. (Figure 2).

Continuous incontinence refers to constant urine leakage (day and night time) usually associated with congenital malformations (i.e., ectopic ureter, extrophy variant), functional loss of the external urethral sphincter function (e.g. external sphincterotomy) or iatrogenic causes (e.g. vesicovaginal fistula). Intermittent incontinence is the leakage of urine in discrete amounts. Intermittent incontinence that occurs while awake is termed daytime incontinence. When intermittent incontinence occurs exclusively during sleeping periods, it is termed enuresis. Enuresis should not be used to refer to daytime incontinence. Combined intermittent incontinence during ‘awake’ periods and while sleeping is termed daytime incontinence and enuresis. For subdivisions of enuresis and daytime incontinence, the reader is
referred to the sections on Conditions/Diagnosis (Enuresis) and LUT symptoms below.

**Urgency.** Urgency refers to the sudden and unexpected experience of an immediate and compelling need to void. The term is not applicable before the attainment of bladder control. The symptom of urgency is often a sign of bladder overactivity.

**Nocturia.** Nocturia is the complaint that the child has to wake at night to void. Nocturia is common among school children and is not necessarily indicative of LUT dysfunction or a pathologic condition. Unlike enuresis, nocturia does not result in incontinence. Note that nocturia does not apply to children who wake up for reasons other than a need to void, e.g. children who wake up after an enuretic episode.

**Voiding Symptoms**

**Hesitancy.** Hesitancy denotes difficulty in initiating voiding when the child is ready to void.

**Straining.** Straining means the child complains of needing to make an intense effort to increase intraabdominal pressure (e.g. Valsalva) in order to initiate and maintain voiding.

**Weak Stream.** This term describes an observed stream or uroflow that is weak.

**Intermittency.** Intermittency implies micturition that is not continuous but rather has several discrete stop and start spurts.

**Dysuria.** Dysuria is the complaint of burning or discomfort during micturition. The timing of dysuria may be noted during voiding. Dysuria at the start of voiding suggests a urethral source of pain whereas dysuria at the completion of voiding suggests a bladder.

**Other Symptoms**

**Holding Manoeuvres.** These are observable strategies used to postpone voiding or suppress urgency that may be associated with bladder overactivity. The child may or may not be fully aware of the purpose of these manoeuvres, but they are usually obvious to caregivers. Common behaviours include standing on tiptoes, forcefully crossing the legs, grabbing or pushing on the genitals or abdomen and placing pressure on the perineum (e.g. squatting with the heel pressed into the perineum or sitting on the edge of a chair).

**Feeling of incomplete emptying.** This refers to the complaint that the bladder does not feel empty after voiding and may result in the need to return to the toilet to void again.

**Urinary retention.** This refers to the sensation of an inability to void despite persistent effort in the presence of a fully, distended bladder. Duration of time is particularly beneficial in characterizing retention.

**Post micturition dribble.** This term is used when the child describes involuntary leakage of urine immediately after voiding has finished. This symptom may be associated with vaginal reflux in girls or syringocoele in boys (see below).

**Spraying (splitting) of the urinary stream.** This refers to the complaint that urine passes as a spray or a split rather than a single discrete stream. It usually implies a mechanical obstruction at or just below the meatus (e.g. meatal stenosis).

**Genital and LUT pain**

**Bladder pain.** Complaint of suprapubic pain or pressure or discomfort related to the bladder.

**Urethral pain.** Complaint of pain felt in the urethra

**Genital pain.** This refers to pain in the genitals. In girls, vaginal pain and vaginal itching are commonly seen with localized irritation from incontinence. Penile pain and episodic priapism may be seen in young boys as symptoms associated with a full bladder, constipation or the result of urine trapping inside a phimotic foreskin.

**Tools of investigation**

A thorough history and physical examination are the hallmark diagnostic tools for evaluation of children and adolescents with LUT dysfunction. During the evaluation, it is advisable to observe the child for holding manoeuvres, expressions of urgency or any behavioral issues. Specific tools that aid the evaluation have been published in the ICCS guideline on diagnostic evaluation of children with daytime incontinence. These tools and their relevant terminology will be briefly reviewed and categorized into invasive and non-invasive urodynamics.
Non-invasive urodynamics

Diaries

Bladder diary. The objective recording and documentation of bladder function involves collecting a diary. A complete bladder diary consists of a seven-night recording of incontinence episodes and night time urine volume measurements to evaluate enuresis, and a 48-hour daytime frequency and volume chart (not necessarily recorded on two consecutive days) to evaluate for LUT dysfunction. Details can be found on the ICCS website (http://www.i-c-c-s.org) and guidelines on evaluation for enuresis and LUT dysfunction. Mobile device applications (apps) may also facilitate bladder diary recordings.

Bowel diary. The close relationship between bladder and bowel function requires screening of both systems to rule out BBD. The work up for bowel dysfunction in the context of BBD is outlined in the ICCS guideline on the management of functional constipation in children with LUT symptoms. A seven-day bowel diary utilizing the Bristol Stool Form Scale is preferable. The diagnosis of functional constipation in children is controversial; the Rome-III criteria are the most commonly accepted guideline for diagnosis.

Questionnaires

Questionnaires have emerged as useful adjuncts in the evaluation of LUT function. This need is largely based on the symptomatic nature of LUT dysfunction and the importance of objectively translating subjective complaints into semi-quantitative data. The scoring of questionnaires allows providers to gauge the extent of the dysfunction and provides a method of monitoring outcomes during treatment. Two types of questionnaires exist — measurements of LUT function and psychological screening.

LUT function questionnaires

Although several questionnaires have emerged as assessment tools, two stand out as they have been tested across cultures, validated and undergone test and re-testing for reliability. They are:

- Dysfunctional Voiding Symptom Score (DVSS): The DVSS questionnaire quantifies severity of LUTS.
- Paediatric Urinary Incontinence Quality of Life Score (PIN-Q): The PIN-Q measures the emotional impact that urinary incontinence has on a child.

Both tools are complementary and provide a clinically appropriate picture of LUTS and impact on quality of life.

Psychological Screening

The high rate of comorbid clinical behavioural disorders associated with BBD is well documented and reviewed in detail in the ICCS document on psychological and psychiatric issues in urinary and faecal incontinence. The Child Behavior Checklist (CBCL) is a widely used parental questionnaire by psychiatrists and psychologists that contains 113 empirically derived behavioural items. The CBCL has been translated into several languages. Any validated, normed broadband behavioural questionnaire can be used i.e. Strengths and Difficulties Questionnaire (SDQ) of the Behavior Assessment for Children.

Short Screening Instrument for Psychological Problems in Enuresis (SSIPPE)

The SSIPPE is a brief instrument derived from the CBCL and recommended initially if any psychological problem associated with paediatric LUT dysfunction or BBD exists.

Urine Flow Measurement

Uroflow studies consist of measuring the rate, volume voided, voiding time and examining the pattern during urination into an uroflowmetre. To obtain an uroflow, a child must obviously be toilet trained. Additionally, it is important:

1. the volume of voided urine is adequate as curves change when voided volume is < 50% of expected bladder capacity for age
2. to obtain more than 1 curve to improve accuracy, reliability and interpretation of the test.

Uroflowmetry may be done with or without electromyography (EMG) testing of the perineal muscles. The advantage of combining EMG with uroflowmetry is the ability to appreciate synergy or dyssynergy between the bladder and the pelvic floor.

Flow rate. Maximum flow rate (Qmax) is the most relevant quantitative variable when assessing bladder outflow. Sharp peaks in the curve are usually artifacts, so maximum flow rate should be registered only when a peak level has a duration of ≥ 2 seconds. In studies of normal children and adults, a linear correlation has been found between maximum flow and the square root of voided volume. If the square of the maximum flow rate ([ml/s]) equals or exceeds the voided volume (ml), the recorded maximum flow is most probably normal.

Flow curve shape. The shape of the flow curve is paramount when analyzing the flow pattern. The precise shape is determined by detrusor contractility and influenced by abdominal straining, coordination with the bladder outlet musculature and any distal anatomic obstruction. Five types of flow patterns are seen. (Figure 3). Each specific pattern is no guarantee of an underlying diagnostic abnormality but rather serves as a guide to the existence of a specific condition.

Bell-shaped curve. The urinary flow curve of a healthy child is bell-shaped regardless of gender, age and voided volume.

Tower-shaped curve. This is a sudden, high-amplitude curve of short duration that suggests an overactive bladder produced by an explosive voiding contraction.

Staccato-shaped curve. This flow pattern is irregular and fluctuating throughout voiding but the flow is continuous, never reaching zero during voiding. This pattern suggests incoordination of the bladder and the sphincter with intermittent sphincter overactivity during voiding (i.e. dysfunctional voiding). It will be seen as sharp peaks and troughs in the flow curve. To qualify for a staccato label, the fluctuations should be larger than the square root of the maximum flow rate.

Interrupted-shaped curve. This flow will display discrete peaks with spikes similar to a staccato-shaped curve but unlike the latter pattern, there will be segments where zero flow with complete cessation between these peaks exists. This flow pattern suggests an underactive bladder; each peak represents abdominal muscle straining creating the main force for urine evacuation. In between each strain, the flow ceases. It is possible this flow pattern can be seen with incoordination between the bladder and external urethral sphincter.

Plateau-shaped curve. This is a flattened, low-amplitude prolonged flow curve that is suggestive of bladder outlet obstruction (BOO). The BOO can be anatomical (e.g. posterior urethral valves or urethral stricture) or dynamic (e.g. continuous, tonic sphincter contraction). Flow electromyography (EMG) may differentiate between BOO subtypes. A plateau-shaped curve may be seen with an underactive bladder during a long continuous abdominal strain. Abdominal pressure monitoring during the uroflow can help delineate an underactive bladder condition.
Pelvic Ultrasound

Pelvic ultrasound is a key tool in the evaluation of pediatric LUT function\textsuperscript{10}. Ultrasonographic bladder scan machines calculates bladder volume, and thus are useful in measuring pre- and post-void residual (PVR) or as a B-mode sonographic probe that provides anatomical details of the LUT and adjacent rectum.

Post-void residual. PVR measurements in neurologically intact children are highly variable. Recently investigation of 1,128 healthy Taiwanese children between four and 12 years of age with a bell-shaped uroflow pattern and a voided volume of >50 ml support the following normative 95th percentile values for an abnormally elevated PVR\textsuperscript{34}:

- **Children 4 - 6 years old**: Single PVR >30 ml or >21% of bladder capacity (BC) where BC is determined as voided volume (VV) ÷ PVR and expressed as percent of the expected bladder capacity (EBC= [age (yrs) + 1] x 30 ml\textsuperscript{1}). It is recommended that a repeat PVR be performed with dual measurements, a repetitive PVR >20 ml or >10% BC is considered significantly elevated.
- **Children 7 - 12 years old**: A single PVR >20 ml or 15% BC, or repetitive PVR >10 ml or 6% BC is considered elevated.

Standard conditions should be applied to measuring PVR: the bladder should not be under-distended (<50%) nor over-distended (>115%) in relation to the EBC; PVR must be obtained immediately after voiding (<5 minutes). Further validation is needed for the above nomograms in similar cohorts across cultures.

Bladder wall thickness

In daily clinical practice a thickened bladder wall alerts the clinician to longstanding problems with urine storage and emptying\textsuperscript{10}. Bladder wall thickness can be measured with a full and empty bladder. However, normal values do not exist. Bladder wall thickness depends on degree of bladder filling. It is likely that bladder wall thickness correlates with LUT dysfunction\textsuperscript{35}.

Rectal distension

There is insufficient evidence that the transverse diameter of the rectum can be used solely as a predictor of constipation and fecal impaction\textsuperscript{14}. In non-constipated and constipated children, a diameter >30 mm on pelvic ultrasound correlated with a finding of rectal impaction on a digital rectal examination\textsuperscript{16}.

Invasive urodynamics

Urodynamic studies are not routinely used to evaluate LUT function in neurologically intact children\textsuperscript{10} but are employed regularly in children suspected of having a neuropathic bladder\textsuperscript{15}. A future ICCS document will detail paediatric urodynamic guidelines.

Urodynamic (cystometric) techniques. Urodynamic studies investigate filling and emptying phases of bladder function. In the paediatric setting, there should be specific adaptations regarding staff training, environment, child and parental support so the entire examination is child-friendly. If bladder dynamics are measured via a suprapubic catheter, a delay of time is recommended between catheter insertion and urodynamic recording. If a transurethral catheter is used, catheter size needs to be as small as possible to avoid outflow obstruction.

Cystometry is used to describe the urodynamic investigation during the filling phase of the micturition cycle. Before filling is started, the bladder must be emptied completely. The filling phase begins with the flow of fluid into the bladder and ceases when instillation ends. Several parameters during this phase should be identified in the clinical report that includes the filling rate, temperature of the infusate and the final volume instilled. The filling rate should be close to physiologic filling approaching 5-10% of EBC. Fluid temperature should be between 25 and 37°C and the volume of instilled fluid should not exceed an amount that causes pain or results in prolonged passive detrusor pressures >40 cm H₂O.

Natural fill (ambulatory) cystometry provides the most physiologic simulation of bladder filling; the time and volumes should be identified during the evaluation.

Bladder storage function should be described in terms of bladder sensation, detrusor activity, bladder compliance and bladder capacity.

Bladder sensation during filling cystometry. Bladder sensation is subjective in infants and toddlers but less so in older children and adolescents. Physical cues (e.g. holding maneuvers) will be the signs in younger children who cannot express the sensation or a desire to void.

Reduced bladder sensation is defined as diminished awareness throughout bladder filling, and absent bladder sensation as no bladder sensation whatsoever. Both can be observed in children with an underactive detrusor, a neuropathic bladder or a co-morbidity of diabetes mellitus.

Detrusor function during filling cystometry. Normal detrusor function allows bladder filling with little or no change in pressure, and without involuntary detrusor contractions despite provocation such as coughing or positional changes. In infants and children any detrusor activity observed before voiding is considered pathological.

Detrusor overactivity is the occurrence of involuntary detrusor contractions during filling cystometry. They may be spontaneous or provoked and produce a waveform of variable duration and
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amplitude. Contractions may be phasic or terminal. Symptoms of urgency and/or urgency incontinence may or may not occur. Similar to the latest IUGA/ICS terminology, if a relevant neurological cause is present, then neurogenic detrusor overactivity is noted, otherwise idiopathic detrusor overactivity is the preferred term.

**Bladder capacity during filling cystometry.** Cystometric capacity is the bladder volume at the end of filling cystometry, when “permission to void” is given during the urodynamics study. This endpoint and the level of the child’s bladder sensation at that time (“normal desire to void”) should be noted.

Maximum cystometric capacity is the bladder volume when the child is no longer able to delay micturition.

**Bladder compliance during filling cystometry.** Bladder compliance describes the relationship between changes in bladder volume and changes in detrusor pressure. Compliance is calculated by dividing the volume change (ΔV) by the change in detrusor pressure (ΔPdet) during that change in bladder volume (C = ΔV/ΔPdet).

Compliance is expressed as ml per cm H2O. Bladder compliance can be affected by several factors that should be standardized during the study such as the rate of filling and the reference points for compliance calculations. A faster filling rate is more provocative and should not exceed 5-10% of EBC or 20 ml/min. The starting point for compliance calculations is the detrusor pressure at the initiation of bladder filling and the corresponding bladder volume (usually zero). The end point for compliance calculations is the passive detrusor pressure (and corresponding bladder volume) at cystometric capacity or immediately before the start of any detrusor contraction that causes significant leakage (that causes the bladder volume to decrease).

In addition to the quantitative calculation, the shape of the filling curve is important; it provides insight into bladder compliance. Normally, detrusor pressure remains relatively stable throughout bladder filling resulting in a linear shaped curve. A non-linear shaped filling curve will be seen with rising detrusor pressure during filling. The change in shape of the compliance curve should be noted at the corresponding bladder volume and time of the study as change may occur early or later during bladder filling. The overall quantitative compliance may be similar in two studies but one study has a nonlinear curve during the onset of filling whereas another has a nonlinear curve that occurs toward the end of bladder filling.

**Urethral function during filling cystometry.** Urethral function is usually assessed in children by pelvic floor EMG with skin or (less commonly) needle electrodes. Urethral closure pressure is rarely measured. For centres using pressure measurements IUGA/ICS definitions are applicable. The occurrence of urethral leakage may differ when doing urodynamic studies in a supine as compared to an upright position; thus body position must be noted.

Incompetent urethral closure mechanism is leakage of urine occurring during activities that raise intra-abdominal pressure in the absence of a detrusor contraction.

Urethral relaxation incontinence is defined as leakage due to urethral relaxation in the absence of raised abdominal pressure or detrusor contraction.

Urodynamic stress incontinence is the involuntary leakage of urine during filling cystometry, associated with increased intra-abdominal pressure (e.g. coughing or sneezing), in the absence of a detrusor contraction. In children, urodynamic stress incontinence is a less common condition as compared to adult females.

**Leak point pressures.** There are two types of leak point pressure measurement; the terminology for paediatrics is identical to IUGA/ICS terminology. The pressure values at leakage should be measured at the moment it occurs.

Detrusor leak point pressure (detrusor LPP): This static test is the lowest value of detrusor pressure at which leakage is observed in the absence of increased abdominal pressure or a detrusor contraction. High detrusor LPP (e.g. >40 cmH2O) is associated with reduced bladder muscle compliance and poses risk for upper urinary tract deterioration. High detrusor LPP is commonly denoted in children with a neuropathic bladder, i.e. spina bifida or related neurological disorders. It should be noted that if a patient has little to no bladder neck or intrinsic sphincter function, then the DLPP is not an accurate reflection of detrusor compliance. Subsequently, bladder wall compliance is further assessed with manoeuvres to increase the outlet resistance. There is no data on correlation between detrusor LPP and upper tract damage in children with a non-neuropathic bladder.

Abdominal leak point pressure (abdominal LPP): This is a dynamic test that measures the lowest value of intentionally increased intravesical pressure that provokes urinary leakage in the absence of a detrusor contraction. Coughing or Valsalva are examples of inducing increased pressure. A low abdominal LPP is suggestive of poor urethral function. Abdominal LPP supplants the terms Valsalva or stress LPP.

**Voiding cystometry (Pressure flow studies)**

Voiding cystometry is the pressure-volume relationship of the bladder during micturition. Voiding cystometry can be evaluated in neurologically intact or near-intact infants and children but is
less frequently performed due to its invasive nature and resultant distress.

**Detrusor function during voiding.** Normal detrusor function is characterized by an initial (voluntary) relaxation of the external urethral sphincter/pelvic floor followed immediately by a continuous detrusor contraction that leads to complete bladder emptying within a normal time span, in the absence of obstruction.

Detrusor underactivity denotes a voiding contraction of reduced strength and/or duration, resulting in prolonged bladder emptying and/or a failure to achieve complete emptying within a normal time span. An acontractile detrusor is seen when no contraction whatsoever occurs during urodynamic testing; the term neurogenic acontractile detrusor should be used where a neurological cause exists.

There are selective times when pressure-flow studies are of clinical value in children in order to distinguish between two clinical conditions that will result in low flow on uroflowmetry - an underactive bladder versus BOO. With the former, there is detrusor underactivity whereas with BOO, the detrusor pressure is elevated. An underactive bladder may require abdominal straining to achieve complete micturition; consequently abdominal pressure may be elevated during voiding resulting in an interrupted uroflow curve.

**Urethral function during voiding cystometry.** Normal urethral function: The urethra opens and is continuously relaxed to allow micturition at a normal pressure and flow with no PVR.

Dysfunctional voiding is characterized by an intermittent and/or fluctuating flow rate due to intermittent contractions of the peri-urethral striated or levator ani muscles during voiding in neurologically normal children. An uroflow with EMG or a videourodynamic study is required to document dysfunctional voiding. The EMG is necessary to distinguish an interrupted or intermittent uroflow pattern secondary to an acontractile or underactive detrusor with abdominal voiding.

Detrusor sphincter dyssynergia (DSD) is incoordination between detrusor and external urethral sphincter muscles during voiding (i.e., detrusor contraction with contraction of the urethral and/or periurethral striated muscles). This is seen in neurological disorders on urodynamic evaluation and is characterized by increased EMG sphincter activity during a detrusor contraction and by either a “spinning-top” configuration of the proximal urethra or a narrowing of the external sphincter area on videocystourethrogram (VCUG) or videourodynamic. A “spinning-top” urethra may also be seen in neurologically intact children with incoordination of the external sphincter and bladder during voiding (i.e. dysfunctional voiding) on VCUG. Additionally, it should be noted that patients with OAB without dysfunctional voiding might exhibit a “spinning-top” urethral appearance due to habitual guarding or holding manoeuvres during increased bladder pressure or urgency.

**Four hour voiding observation**

Four hour voiding observation is a validated technique used to evaluate bladder function during infancy. This involves continuous observation of the freely moving infant with frequent ultrasound measurement of bladder filling and residual urine before and after each void. Voided volumes may also be calculated by weighing of diapers.

**Signs**

**Signs related to voided volume.** The term voided volume is used to characterize the volume of urine measured with micturition and is recorded on the voiding diary. Voided volume is non-invasive and reflective of real life. It is of utmost importance because it is easy to obtain and influences follow-up treatment.

Any other measure of bladder volume should explain the method used to obtain it e.g. ultrasound, urodynamic, cystographic or cystoscopic volume.

The term maximum voided volume (MVV) refers to the largest volume of voided urine measured on the frequency volume chart throughout a 24-hour cycle. It is variable if the first morning void is included. It is recommended that inclusion or exclusion of the first morning void be noted during investigation of the MVV. The term expected bladder capacity (EBC) is used as a reference or standard for comparison. The EBC is defined by the formula: (30 x [age in yrs + 1] ml)³⁷,³⁸. This EBC formula was recently validated when the first morning void was disregarded on the frequency volume chart.³⁴ The EBC is applicable for children aged between four and 12 years as it reaches a level of 390ml at 12 years. Finally, MVV, excluding the first morning void, is considered small or large if found to be < 65% or > 150% of EBC, respectively.

**Signs related to urine output.** Normal urine output is difficult to define in childhood, due to great intra and inter-individual variation and to a lack of large-scale investigations. As the IUGA/ICS noted, the term polyuria is used to describe excessive excretion of urine resulting in profuse and frequent micturition. Polyuria is defined as voided urine volumes of > 40 ml/kg body weight during 24 hours or > 2.8 L/urine for a child or adolescent weighing ≥70 kg.

Nocturnal urine output excludes the last voiding before sleep but includes the first morning void. In enuretic children, urine voided during sleep is collected in diapers and the change in diaper weight is measured. Nocturnal polyuria is relevant in
children suffering from enuresis and is defined in this cohort as nocturnal urine output exceeding 130% of EBC for age. There is a need to investigate the quantitative threshold of this definition. In a recent population-based study of 148 healthy children with 1,977 overnight recordings, nocturnal polyuria was found when urine volume was greater than 20 x (age+9) in ml\(^2\). This latest formula may be applicable for a population based nocturnal polyuria, but its clinical usefulness has yet to be tested. Accordingly, nocturnal polyuria will result in nocturia or enuresis. However, due to the necessary arbitrariness of this definition, it is recommended for authors studying these conditions to report nocturnal urine output and EBC, or the ratios between them, rather than merely classifying the children as polyuric or non-polyuric.

**Conditions/Diagnosis**

Using the ICD-10 and DSM-V definitions and criteria\(^6,8\), the symptom of incontinence requires a minimum age of 5 years, a minimum of one episode per month and a minimum duration of three months to be termed a condition. Applying the criteria set forth by the DSM-5 and ICD-10, enuresis and daytime urinary incontinence is a significant condition if it occurs >1 episode per month and a frequency of 3 episodes over three months. We further propose to qualify the significance of enuresis as frequent (≥4 per week) or infrequent (<4 per week).

**Enuresis.** Enuresis is both a symptom and a condition of intermittent incontinence that occurs during periods of sleep.

**Subgroups**

There is ample evidence that enuretic children with concomitant symptoms of LUT dysfunction differ clinically, therapeutically and pathogenically from children without such daytime symptoms\(^11,16\). Enuresis without other LUT symptoms (nocturia excluded), and without bladder dysfunction, is defined as monosymptomatic enuresis. Children with enuresis and any LUT symptoms are said to have non-mono-symptomatic enuresis. Subgrouping of enuresis in this manner is essential and based on the current clinical situation. In patients with non-mono-symptomatic enuresis, the type of LUT dysfunction condition should be reported, because this information will influence the treatment and the reproducibility of the data. Once daytime LUT symptoms have abated, the enuresis switches from non-mono-symptomatic to mono-symptomatic.

If enuresis is subdivided according to its onset, secondary enuresis is reserved for those children who have had a previous dry period of >6 months\(^11\). Otherwise it is termed primary enuresis. A caveat for subtyping secondary enuresis is its association with behavioural co-morbidities that necessitate investigation.

**Daytime conditions**

The classification of daytime LUT conditions is more complex than enuresis due to the heterogeneity of symptoms of LUT dysfunction and the considerable overlap between conditions. Borderline cases are common; the rationale for grouping various symptom complexes into specific LUT dysfunction is often not adequately evidence-based.

To provide a framework to classify daytime LUT dysfunction, assessment and documentation should be based on the following parameters:

1. Incontinence (presence or absence, and symptom frequency)
2. Voiding frequency
3. Voiding urgency
4. Voided volumes
5. Fluid intake

This is more important than subgrouping the children into various recognized conditions listed below. Although the age of reference for symptoms and LUT conditions is ≥5 years\(^6,8\), these conditions including incontinence are applicable to the age of attained bladder control.

**Bladder and bowel dysfunction (BBD).** BBD is a combination of bladder and bowel disturbances. Severe BBD is characterized by LUT and bowel dysfunction seen in children with neurologic conditions who have no identifiable or recognizable neurologic abnormality. When severe BBD results in changes in the upper urinary tract (e.g. hydronephrosis and/or vesicoureteral reflux), it may be synonymous with the historical term ‘Hinman syndrome’.

**Overactive bladder (OAB).** Urinary urgency, usually accompanied by frequency and nocturia, with or without urinary incontinence, in the absence of urinary tract infection (UTI) or other obvious pathology. Children with OAB usually have detrusor overactivity, but this label can only be applied with cystometric evaluation (see above). Urgency incontinence is the complaint of involuntary loss of urine associated with urgency and is thus applicable to many children with OAB.

**Voiding postponement.** Children who habitually postpone micturition using holding manoeuvres suffer from voiding postponement. This behaviour derived by clinical history is often associated with a low micturition frequency, a feeling of urgency and possibly incontinence from a full bladder. Some children learn to simultaneously restrict fluids so as to reduce their incontinence. The rationale for delineating this entity lies in the observation that these children often suffer from psychological comorbidity or behavioral disturbances such as oppositional defiant disorder (ODD)\(^12\).
**Underactive bladder.** This clinical term is reserved for children who need to raise intra-abdominal pressure to initiate, maintain or complete voiding i.e. straining. The children may have low voiding frequency in the setting of adequate hydration but may also have frequency due to incomplete emptying with prompt refilling of the bladder. These children often produce an interrupted uroflow pattern and are usually found to have detrusor underactivity if examined with invasive urodynamics. Flow patterns may be plateau-shaped; pressure flow studies will distinguish it from bladder outlet obstruction.

**Dysfunctional voiding.** The child with dysfunctional voiding habitually contracts the urethral sphincter or pelvic floor during voiding and demonstrates a staccato pattern with or without an interrupted flow on repeat uroflow when EMG activity is concomitantly recorded. Note: This is a term associated with a neurologically intact patient.

**Bladder outlet obstruction (BOO).** BOO refers to an impediment of urine flow during voiding. It may be mechanical or functional, static or phasic and is characterized by increased detrusor pressure and a reduced urinary flow rate during pressure-flow studies.

**Stress incontinence.** Stress incontinence is the involuntary leakage of small amounts of urine with effort or physical exertion that increases intraabdominal pressure e.g. coughing or sneezing. During urodynamic investigation, leakage is confirmed in the absence of a detrusor contraction and termed urodynamic stress incontinence.

**Vaginal reflux.** Toilet-trained girls who consistently experience daytime incontinence in moderate amounts shortly after voiding and have no other LUT symptoms or night time incontinence have vaginal reflux. It is a consequence of voiding with adducted legs leading to urine entrapment inside the introitus. It may be associated with labial adhesions due to localized inflammation.

**Giggle incontinence.** Giggle incontinence is a rare condition in which extensive emptying or leakage occurs during or immediately after laughing. Bladder function is normal when there is no laughter.

**Extraordinary daytime only urinary frequency.** This applies to a toilet-trained child who has the frequent need to void that is associated with small micturition volumes solely during the day. The daytime voiding frequency is at least once per hour with an average voided volume of < 50% of EBC (typically 10-15%).
Incontinence is rare and nocturia is absent. Co-morbidities, i.e. polydipsia, diabetes mellitus, nephrogenic diabetes insipidus, daytime polyuria, UTI or viral syndrome, should be excluded.

**Bladder neck dysfunction.** Bladder neck dysfunction refers to impaired/delayed opening of the bladder neck resulting in reduced flow despite an adequate or elevated detrusor contraction. The prolonged opening time, i.e. the time between the start of a detrusor voiding contraction and the start of urination can be seen and measured on videourodynamics. Alternatively bladder neck dysfunction can be diagnosed non-invasively with a uroflow/EMG when a prolonged EMG lag time is noted, i.e. the time interval between the beginning of pelvic floor relaxation and the actual start of flow. The EMG lag time remains to be further defined and validated.

**Comorbidity**

It is not the task of the ICCS to suggest definitions and terminology for areas beyond the LUT. We do, however, find it useful to list comorbid conditions that are relevant and important, especially for researchers studying the LUT in children. These include the following:

- Constipation and fecal incontinence
- Urinary tract infection
- “Asymptomatic” bacteriuria
- Vescoureteral reflux
- Neuropsychiatric conditions (attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder etc.)
- Intellectual disabilities
- Disorders of sleep (sleep apneas, parasomnias)
- Obesity

Of special relevance are behavioral disorders, which affect 20–40% of children with enuresis and 30–40% with daytime incontinence. These include externalizing disorders (ADHD and ODD), and internalizing disorders (depressive and anxiety disorders).

**Treatment**

**Definitions of treatment methods.** ICCS treatment guidelines have been published in documents defining various LUT conditions and comorbidities that include externalizing disorders (ADHD and ODD), and internalizing disorders (depressive and anxiety disorders). This document conveys definitions and guidelines regarding terminology alone.

We strongly advise not using terms such as “standard therapy” or “maintenance therapy” without defining the design of these treatments.

**Pharmacological therapy, surgical therapy.** These pertain to any therapy based on drugs or surgery.

**Neuromodulation.** This refers to therapy that reduces LUT symptoms or restores LUT function by the alteration and modulation of nerve activity through central and/or peripheral electrical stimulation or chemical agents to targeted sites.

**Alarm treatment.** Alarm treatment is therapy based on a device that gives a strong sensory signal—usually, but not necessarily, acoustic—immediately after an incontinence episode. It can be used during day- or nighttime, although the latter usage is more common.

**Urotherapy.** Urotherapy is conservative-based therapy and treatment of LUT dysfunction that rehabilitates the LUT and encompasses a very wide field of healthcare professionals. Urotherapy can be divided into standard therapy and specific interventions.

Urotherapy encompasses the following standard components:

1. Information and demystification. Explanation about normal LUT function and how the particular child deviates from normal.
2. Instruction in how to resolve LUT dysfunction; i.e. behavioural modification with regular voiding habits, proper voiding posture, avoidance of holding manoeuvres, regular bowel habits, etc.
3. Life-style advice. Encompasses balanced fluid intake and diet, diminished caffeine, regular bladder and bowel emptying patterns, etc.
4. Registration of symptoms and voiding habits, using bladder diaries or frequency-volume charts and potentially mobile apps.
5. Support and encouragement via regular follow-up with the caregiver

Specific interventions of urotherapy are defined similar to ICS guidelines that include various forms of pelvic floor muscle retraining (biofeedback), neuromodulation and intermittent catheterization. Additional interventions of urotherapy involve cognitive behavioural therapy (CBT) and psychotherapy.

Psychotherapy encompasses all non-surgical, non-pharmacological treatments aimed at comorbid behavioural and emotional disorders accompanying incontinence (but not aimed at enuresis or urinary incontinence themselves). These evidence based techniques are indicated following thorough psychological or psychiatric assessment and only if a behavioral disorder is present. They can be augmented by pharmacotherapy (stimulants in ADHD). The treatment of these comorbid emotional and behavioral disorders does not only alleviate suffering for the child and his/her family, but can increase compliance and adherence to urotherapy—leading to improved outcomes.
Definitions of treatment outcome

In the clinical scenario, the affected child and family are the ones who decide appropriate criteria for treatment success. In the research setting, however, a uniform standard is necessary, so that studies and treatment options can be compared.

Researchers should recognize three basic principles of treatment outcomes:

1. The symptom frequency during baseline and following treatment should each be documented.
2. The assessment of treatment response or outcome must be based on pre-treatment baseline registration of the frequency of symptoms.
3. The response during treatment should be noted as well as the response after cessation of treatment for a specified period of time. These responses may not be the same.

Initial success:

• No-response: <50% reduction
• Partial response: 50 to 99% reduction.
• Complete response: 100% reduction

Note: The term ‘Response’ (>90% reduction) has been dropped and rolled into the term ‘Partial response’ to simplify and strengthen the term ‘Complete response’.

Long-term success:

• Relapse: more than one symptom recurrence per month
• Continued success: no relapse in six months after interruption of treatment
• Complete success: no relapse in two years after interruption of treatment

References

6. Association A P. Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), pp. URL: http://www.dsm5.org (website has been reorganized to serve as a resource for clinicians, researchers, insurers, and patients. 2013).


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Australian news

Melbourne conference

Preparations for the 24th National Conference on Incontinence are progressing well, with a wide range of keynote speakers engaged to present at the conference, to be held at the Crown Conference Centre in Melbourne, 25–28 November 2015.

International speakers include Professor Mary Palmer from the Institute of Aging at the University of North Carolina, Dr Chantal Dumoulin from Montreal University, Dr Anne Pelletier Cameron from University of Michigan Hospitals, Professor Karel Everaert from Belgium’s Ghent University Hospital and Prof Mark Weatherall from the University of Otago, New Zealand.

The strong scientific program also boasts many national speakers who are world leaders in their field.

Abstracts are open until 1 May and are to be submitted to Mary Trezise on m.trezise@continence.org.au.

Applications and submission guidelines are available at www.continence.org.au/national-conference

Carer project

The new carer project, Carers count — support for continence management, is focusing on the development of a number of resources to support family and friend carers to access key information on incontinence. A new web page dedicated to carers will focus on the practicalities of incontinence care, with information on products, financial assistance, and relevant referrals including access to a continence nurse online.

Five short videos will focus on key topics identified by carers, such as skin care and catheter usage. Additional educational videos and presentations will be developed for Carer Advisory Service staff located within state carer associations and for delivery to carer support groups.

With the help of some of the state carer associations, existing continence resources for carers will also be reviewed and considered for reproduction.

Australian Bladder Foundation grants

The inaugural Australian Bladder Foundation (ABF) grant winners have been announced, with four of the 20 applicants proving successful.

The ABF commends all applicants for the high standard of submissions received and congratulates the following four 2014 grant recipients:

Patrina Caldwell — Using an intelligent agent to improve adherence to eHealth advice using eADVICE (electronic Advice and Diagnosis Via the Internet following Computerised Evaluation) for children with urinary incontinence.

Margaret Sherburn — Predictive validity of post-void residual volume of urine for ongoing voiding dysfunction in post-partum women.

Wendy Bower — TANGO study: Targeting the multifactorial aetiology of nocturia guides outcomes, and development of a measurement tool and quality care bundle to ensure every patient with co-existing nocturia receives evidence-based targeted intervention.

Justin Oliver-Daly — Better Bladder Care Project: Improving bladder management in postnatal women at Sunshine Hospital with ready and timely access to automated bladder scanners.

The annual grants round provides an opportunity for health professional working in, or with an interest in, continence management to apply for grants from the ABF.

The 2015 grants round will be announced mid-year. For updates and more details, go to continence.org.au

ACE

The Australian Continence Exchange (ACE) connects professionals with continence-related resources and education, with resources numbering well over 600 on the website. The last expert on ACE, Dr Joan Ostaszkiewicz, presented on incontinence and dementia in aged care. The short video was well received, with 151 views and six questions posted on the forum. The video and her responses are available online on the Ask the Expert forum.

The next expert is continence nurse advisor Merrill McPhee, who will speak on troubleshooting issues involving catheter usage. The online video will be available in March and viewers will again have the opportunity to ask questions on the forum. Go to continencexchange.org.au

Educational opportunities

The Continence Foundation’s national educational calendar is available online. The next Every Body’s Business forum, Continence Promotion: The Importance of the Midwife, will be held in Hobart on Friday 22 May. To book this or view other events, go to continence.org.au/events or phone 03 9347 2522.
TV campaign

The Continence Foundation has launched a new TV advertising campaign designed to appeal to women of various ages and life stages.

The 15-second and 30-second advertisements feature typical scenarios where women commonly experience incontinence (while lifting, exercising and laughing), promoting the message that bladder leakage — no matter how light — is not normal and encouraging viewers to phone the National Continence Helpline to address the issue so they can once again confidently undertake any of these activities.

The ads are airing nationally on Foxtel, GEM and WIN regional TV stations until the end of June. The ads will also appear as pre-roll videos on popular websites during this period, and in peak and off-peak programs on Channel 9 in both Sydney and Melbourne from April to the end of June.

Barry Cabill
CEO CFA

New Zealand news

We hope you are all rested after the Christmas break and excited about 2015. There has been interest in running our one-day 'Assessment and Treatment of Incontinence' again this year. We have booked the conference room at the Auckland domestic terminal as this makes it easy for attendees to fly in for the day as well as being accessible to Aucklanders. For a registration form, please email zoe@continence.org. We encourage you to talk to promote the day and the program is available on the website. We can repeat this in other areas if there is enough interest.

We are planning a specific men’s education day later in the year. Anna Lawrence, a urologist with subspeciality training in voiding dysfunction, neuro-urology and incontinence will be speaking. This promises to be a very interesting day. Please email Zoe to indicate your interest and you will be notified once all details are confirmed.

We are working with two organisations, the New Zealand Register of Exercise Professionals (REPs) and Exercise NZ to jointly provide education to fitness professionals on safe pelvic floor exercise. These sessions will be made available nationwide throughout 2015.

Our website was used by 125,000 people last year, three times the number of 2013. We are, however, giving it a facelift, with a more modern look and simplifying the index system. This should be complete in the next month.

Jan Zander
CEO NZCA
A new family-centred continence care model for children with disabilities in Western Australia

A recent paper in the Journal of Stomal Therapy Australia provides an overview of a new family-centred model of continence care developed for use in Western Australia. PEBBLES, (Providing Education on Bladder and Bowel health, Liaison, Expert advice and Support), is an innovative and comprehensive community-based continence management service for children younger than 16 years of age who have a disability. It operates across both primary and secondary health care sectors in Western Australia. PEBBLES is a partnership project between Therapy Focus, a not-for-profit organisation providing therapy and support services for children with disabilities, and the Continence Advisory Service of Western Australia. The project is funded by the Disability Services Commission of Western Australia.

The paper highlights, in its introduction and background, that for children with disabilities, incontinence has a significant impact on all areas of the child’s life. This includes their overall health, education, social interactions, and as they get older, future employment. PEBBLES was established because of concerns raised by parents, carers, educators and health care professionals, who identified that there were no accessible specialist continence services in Western Australia for children with disabilities.

From a literature review carried out before establishing the new service, the authors identified the Victorian Continence Support Service (CSS) is a model of best practice in Australia. The model for PEBBLES was based on the Victorian CSS but also includes some aspects of other biomedical, behavioural, and socio-environmental health care models. The PEBBLES service is described as operating within an evidence-based, family-centred model to work collaboratively with all persons involved in the care of the child. This includes: the family, carers, family general practitioner, and other key agencies such as health, childcare, and disability service providers. The service is planned so as to use a collaborative, family-centred approach to gain the best outcomes for the child and their family. The configuration of the service team is described and includes continence nurses plus allied health professionals such as a continence physiotherapist and occupational therapist. Additional support is also available from social workers and clinical psychologists. Strategies used in the new model of care include providing clinical and advisory services, education and support, health promotion and prevention, parent support groups, communications and resources, and advocacy. A particular focus of the PEBBLES services is that they are tailored to the needs of all Western Australian children with disabilities, including those living in rural and remote areas.

Research and evaluation are planned to assess the effect of this service model on family satisfaction, bladder and bowel outcomes and overall quality of life for children, and an economic evaluation.

Reference
Calendar of events 2015

13 March
Continence Foundation of Australia QLD state conference
Pullman Hotel, Brisbane
Web: www.continence.org.au

13–14 March
UGSA 2015 Annual Scientific & General Meeting
UroGynaecological Society of Australasia
The Grace Hotel, Sydney, NSW, Australia
Web: www.ugsao.org.au

19–22 March 2015
4th Global Congress for Consensus in Paediatrics and Child Health (CIP 2015)
Global Initiative for Consensus in Paediatrics (CIP)
Marrakesh, Morocco
Web: http://2015.cipeditrics.org/

11–14 April
68th Annual Meeting Urological Society of Australia and New Zealand
20th Annual Meeting Australian and New Zealand Urological Nurses Society
Adelaide, SA, Australia
Web: www.usanz2015.com/

12–15 April
The Royal College of Obstetricians and Gynaecologists (RCOG) World Congress 2015
Joint RCOG/RANZCOG meeting
Brisbane Convention & Exhibition Centre, Brisbane, QLD, Australia
Web: http://www.rcog2015.com/

1 May
Continence Foundation of Australia, NSW State Conference
Dockside, Balcony Level,
Cockle Bay Wharf, Sydney
Web: www.continence.org.au

15 May
Continence Foundation of Australia, SA State Conference
Adelaide Oval, Adelaide
Web: www.continence.org.au

23 May
Continence Foundation of Australia, WA State Conference
Joondalup Reception Centre, Perth
Web: www.continence.org.au

29 May
Continence Foundation of Australia, VIC State Conference
The Grange Bellinzona, Hepburn Springs
Web: www.continence.org.au

9–13 June
IUGA 40th Annual Meeting
Nice, France
Web: www.iuga.org/?2015meeting

11–13 June
2nd World Congress on Abdominal & Pelvic Pain
Nice, France
Web: http://pelvicpain-meeting.com/

28–29 June
ICCS Grade 3 Course on Enuresis
ICCS, Japanese Society of Enuresis & Japanese Society of Pediatric Urology
Juroku Plaza in Gifu City, Japan
Web: http://i-c-c-s.org/events/

17–20 August
Prostate Cancer World Congress 2015
Cairns, QLD
Web: http://prostatecancercongress.org.au/
Information for authors

The Editors and the Editorial Board of the Australian and New Zealand Continence Journal have specified guidelines for prospective authors to follow when compiling an article they wish to submit to the journal.

Terms of submission

The editors accept submissions in the form of research findings, clinical papers, case studies, reports, review articles, letters and product appraisals. Each submission is evaluated on its timeliness, relevance, accuracy, clarity and applicability to the journal. Submissions will be accepted from any country but must be written in English. Submissions to the journal must be original and unpublished. Submissions must not be under consideration elsewhere. The ANZCJ Editorial Office will check each submission using plagiarism detection software to verify content is original and not previously published. Accompanying each submission must be a competing interest statement (see form on CFA website and Cambridge Media website). Once a paper is accepted for publication, all authors must sign the author statement and copyright assignment form which will be provided by the production editor. Once it is published, the article and its illustrations become the property of the journal, unless rights are reserved before publication.

All work is sub-edited to journal style. The editors reserve the right to modify the style and length of any article submitted, so that it conforms to journal format. Major changes to an article will be referred to the author for approval prior to publication. The Australian and New Zealand Continence Journal provides assistance to first time authors and may be contacted by email.

Authorship

All listed authors should have made a substantial contribution to the manuscript and may be required to indicate their contribution. Participation solely in the acquisition of funding, the collection of data or supervision of such does not justify authorship and such contributions should be listed in acknowledgements which will be printed under the author details. All participating authors must be acknowledged as such; proof of authorship may be requested. The first-named author is responsible for ensuring that any other authors have seen and approved the manuscript and are fully conversant with its contents. It is the responsibility of the author to obtain written permission from a copyright holder to reproduce copyrighted work; a copy of that permission must be provided to the journal prior to publication and a full citation of the source must be provided.

Conflict of interest: It is the responsibility of the submitting author to disclose to the Editor any significant financial or other interests they may have pertaining to their manuscript. Conflicts of interest should be disclosed using the Australian and New Zealand Continence Journal author competing interests form. If an interest exists, publication of that interest is at the Editor's discretion.

Ethics

Investigations in human and animal subjects must conform to accepted ethical standards. Authors must provide a statement within the text that the research protocol was approved by a suitably constituted ethics committee of the institution within which the work was carried out and that it conforms to the Statement on Human Experimentation or the Statement on Animal Experimentation by the NH&MRC.

Manuscript type

The Australian and New Zealand Continence Journal welcomes original research articles for peer review and general articles regarding the achievements of people working in the disciplines pertaining to the management of incontinence, clinical issue updates, book reviews and general project information.

Discussion: Presentation of information from more than one viewpoint (for example, for and against) and usually ending with a recommendation or opinion based on the evidence presented.

Literature review: Narrative — describes and evaluates the current knowledge of a subject, identifies gaps or inconsistencies and includes critical evaluation with recommendations for future research. Systematic — describes planned analysis and evaluation of all available research studies on a particular clinical issue, conducted in accordance with scientific principles and may include recommendations for future research.

Research report: Presentation of study results in an ordered fashion, based on common practice. Research reports are expected to follow the Uniform requirements for manuscripts submitted to biomedical journals, as published by the International Council of Science Journal Editors www.icmje.org.

Case study: Combination of recount (retelling of events as they occurred) and information report (classification and description of something). Can be presented in different ways to give a cohesive account.

Exposition (including letter to the Editor): Putting forward of a particular viewpoint, justification of a particular argument.

Narrative: An informative account of a meeting or conference, or a review of a book, journal article or relevant website.

Preparation of manuscripts

Manuscripts are to be no more than 4000 words and include an abstract of no more than 250 words. Manuscripts should be created in a Word document using minimal formatting and typed double spaced in 12 point Times Roman font. Include total word count and up to five keywords. Include title of work on the abstract page and first page of introduction. In the introduction, include key points on what is already known on the topic and what your manuscript contributes. Define abbreviations and acronyms on first mention in the text.

Tables are to be presented on separate pages, one per page. Tables should be clearly typed, showing columns and lines. Number
tables consecutively using Arabic numerals in the order of their first citation in the text and supply a brief title for each. Place explanatory matter in a legend under the table, not in the heading. Explain in the legend all non-standard abbreviations used in each table.

Photographs and figures may be included in the submission and should be supplied in a graphic format such as jpeg at a resolution of 300 dpi. Illustrations and figures must be clear, well-drawn and large enough to be legible when reproduced. The title and legend for figures should be on a separate page after the references. Each figure must include its place, its number and the orientation of figure. Patients or other individual subjects should not be identifiable from photos unless they have given written consent for their identity to be disclosed; this must be supplied.

Referencing guidelines
The referencing format is based on the Vancouver style, the main feature of which is the use of numbers at the point of reference so as not to interfere with the flow of words. Each number corresponds to a single reference provided in the reference list at the end and, once assigned a number, a reference retains that number throughout the text, even if cited more than once. If more than one work is quoted in a reference, each work must be assigned a number. At any point in the text, the reference may be one or several numbers. Following are some examples of references from different sources:

*Journal*: A complete journal reference includes: name(s) of author(s), title of article, journal name, year of publication, volume and edition number and inclusive page numbers.


*Book*: A complete reference to a book includes name(s) of author(s) or editor(s), book title, edition number, name of publisher, place of publication, year of publication, specific page numbers and internet reference if applicable.


It is the author’s responsibility to ensure that all references are correct. Please double check all citations with an electronic database to ensure accuracy in the reference list. Manuscripts submitted with multiple errors will be returned for correction before being accepted for peer review.

Submission of manuscripts
The *Australian and New Zealand Continence Journal*, in conjunction with Cambridge Publishing, now uses the world’s leading manuscript management system — ScholarOne. Submission of manuscripts for peer review will only be accepted via this online program. Reports and news can still be submitted to the production editor by email.

All tables, figures and photographs, as well as the main document and title page, are to be uploaded separately. Please ensure image files are uploaded as jpegs and are a MINIMUM of 500kb and no larger than 2mb in size. The manuscript may be accompanied by a Word document with tables, figures and photographs embedded so as to show the preferred positions of these. This separate file can be uploaded at step 4 as a cover letter.


To create an account when using the system for the first time, click on ‘Register here’ under ‘New User?’ in the middle right of the screen, or on ‘Create Account’ in the top right-hand side of the screen. Please enter as much information as possible when creating an account.

Once in the system, the steps to submit an article are:

Step 1: Manuscript type, title and abstract.

Step 2: Keywords — at least two are required, up to five allowed.

Step 3: Add co-author and edit your details (if necessary).

Step 4: Manuscript information and questions on funding, ethics, conflict of interest and copyright.

Step 5: Upload files.

Step 6: Review and submit.

The ANZCJ ScholarOne website has comprehensive guidelines and online tutorials to assist in using the system. Click on the orange ‘Get Help Now’ in the top right hand corner. A PDF of the Author Quick Start Guide can be downloaded after choosing ‘Author’ as your role.

Peer-review process
All manuscripts are initially reviewed by the Editorial committee and those deemed unsuitable (insufficient originality, serious scientific or methodological flaws, or a message that is too specialised or of limited interest to the journal readership) are returned to the author(s), usually within four weeks. If the manuscript does not conform to the submission guidelines, the author will be asked to amend it prior to peer review.

All manuscripts are reviewed by content and writing peers for relevance, construction, flow, style and grammar. This process can take eight weeks. Reviewers spend considerable time in reviewing the manuscripts and providing feedback to the authors. The length of time of the publication process may vary and depends on the quality of the work submitted. Several revisions may be required to bring the manuscript to a standard acceptable for publication. The Editorial team undertake the final review and may have different questions for the author/s to consider. Proofs of articles about to be published will be sent in PDF format to the corresponding author for review. The final decision about publication is made by the Editor.
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