A survey of nursing advice on sterile or clean intermittent catheters for long term bladder management by intermittent catheterisation

Report to the Nursing Committee of the International Continence Society

From: Members of the Practice Subcommittee

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Preface

This project involved a survey of practice concerning the use of sterile and clean catheters for long term bladder management by intermittent catheterisation. It was undertaken by members of the Practice Subcommittee of the International Continence Society Nursing Committee in response to this issue being identified in 2009 as a topic of clinical interest to nurses specialising in continence nursing.

Acknowledgements

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A survey of nursing advice on sterile or clean intermittent catheters for long term bladder management by intermittent catheterisation

Introduction

Many patients with impaired bladder emptying live in the community and perform intermittent catheterisation (IC) for long term bladder management. While some patients perform IC using a sterile catheter for each and every catheter insertion, others wash and reuse their catheters. Catheters designed for single use have either a hydrophilic or gel coating. Catheters designed for re-use are made of latex, plastic (PVC), glass or stainless steel and are non-coated. "Where catheters are cleaned for re-use, they may continue to be used many times, up to weeks or even months" (Cottendon et al., 2009. p. 1583). A subcommittee of the International Consultation on Incontinence (ICS) which reviewed evidence concerning 'Management using Continence Products' noted that IC may be carried out using a sterile technique in some care settings, but clean intermittent catheterisation is widely accepted as a safe technique for people who are self-caring in their own homes (Cottendon et al., 2009. p. 1577).

One of the risks associated with IC is urinary tract infection (UTI) [Cottendon et al., 2009). Although this risk is well established, "it is unclear which catheter types, techniques or strategies, affect its incidence" (Cottendon et al., 2009. p. 1577). A recent systematic review on long term bladder management by IC in adults and children found "a lack of evidence to state that incidence of UTI is affected by use of sterile or clean technique, coated or uncoated catheters, single (sterile) or multiple use (clean) catheters, self-catheterisation or catheterisation by others, or by any other strategy"[Moore et al., 2007. p.2]. Getliffe et al (2007) similarly conclude that:

> *There are no definitive studies illustrating that incidence of UTI is affected by sterile single-use or coated catheters compared to clean reused catheters. However the current research base is weak and design issues are significant. Based on the current data, it is not possible to state that one catheter methods is better than another and further research on the topic is strongly recommended (p. 289).*

The ICI also reports "wide variation in practice and important cost implications for using different catheters, techniques or strategies" (Cottendon et al., 2009. p. 1577). The current pilot study was undertaken in an attempt to further understand such variations in practice.

Objectives

The objectives of the project were to:

1. Identify the advice nurses give to IC users regarding the use of sterile or clean catheters for long term bladder management by IC.
2. Compare and contrast nurses' advice to IC users regarding the use of sterile or clean catheters for IC.
3. Describe factors that inform nurses' advice to IC users regarding the use of sterile or clean catheters for IC.

Methods

The project was conducted as a descriptive, exploratory pilot study. The target group included members of the ICS who identified themselves as nurses (n=130). They were invited to complete a purpose designed survey that contained questions about the advice they give to IC users regarding clean or sterile IC (See Appendix A). The surveys were distributed through the ICS secretariat. Members were advised to return the completed survey to the ICS secretariat. Any potentially identifiable information was removed from the survey and they were then emailed in bulk to the project team. Data was qualitative. The data was analysed using Predictive Analytics SoftWare (PASW) version 17. Frequencies were done for the categorical data and written responses were analysed using thematic analysis. Ethical approval to conduct the survey was provided by Flinders University: Project No 4825.

Findings

Of 130 nurse members of the ICS, 33 responded to the survey. Of these, 28 (84.8%) indicated that their work included giving advice about sterile or clean catheters for long term bladder management to individuals who perform IC and 4 (15.2%) did not. The findings are based on respondents who identified themselves as providing advice to long-term IC users (n = 28).

Demographics

Sixteen of the 28 respondents (57.1%) indicated the country and state (province) in which they worked: Australia: 7 (25.0%), Canada: 6 (21.4%), USA: 2 (7.1%) and Switzerland: 1 (3.6%) (see Figure 1).

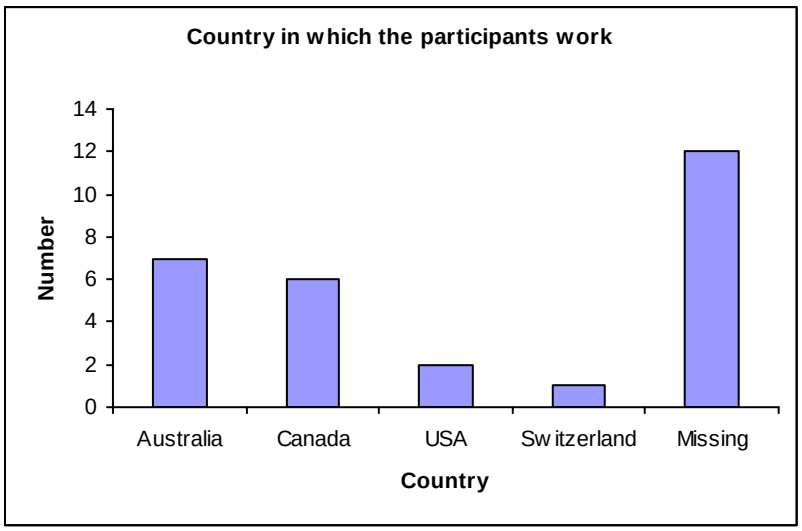

Figure 1. Number of responses for country in which respondents worked

Most respondents (n=13: 46.4%) identified the organisation they work for as a hospital, eight (28.6%) identified a community based organization and four (14.3%) identified an 'other place' such as a Continence Advisor Home Care Base, Rehabilitation and University (see Figure 2).

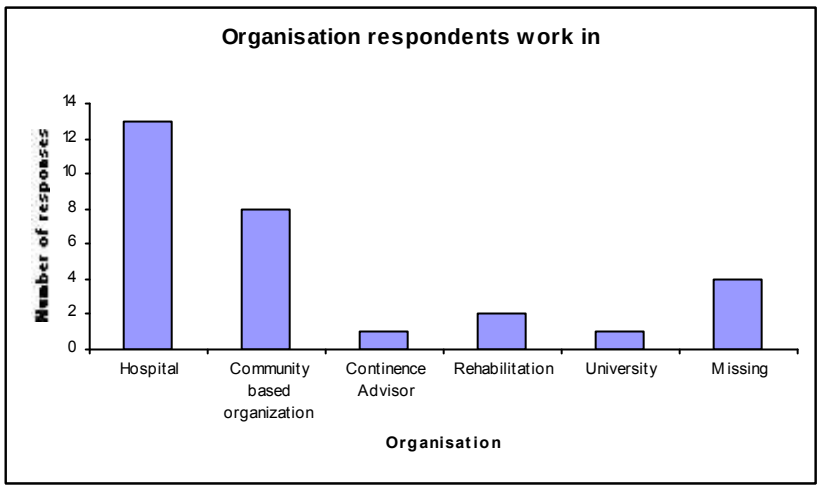

Figure 2. Number of responses for organisations in which respondents worked

Nursing was identified by most respondents (n=24: 85.7%) as the health discipline in their organisation that was responsible for educating consumers about IC for long term bladder management. Three respondents additionally identified 'medicine' which suggests that in some cases, nursing and medicine professions have joint roles in educating consumers about IC. Data were missing for four respondents (14.7%) (see Figure 3).

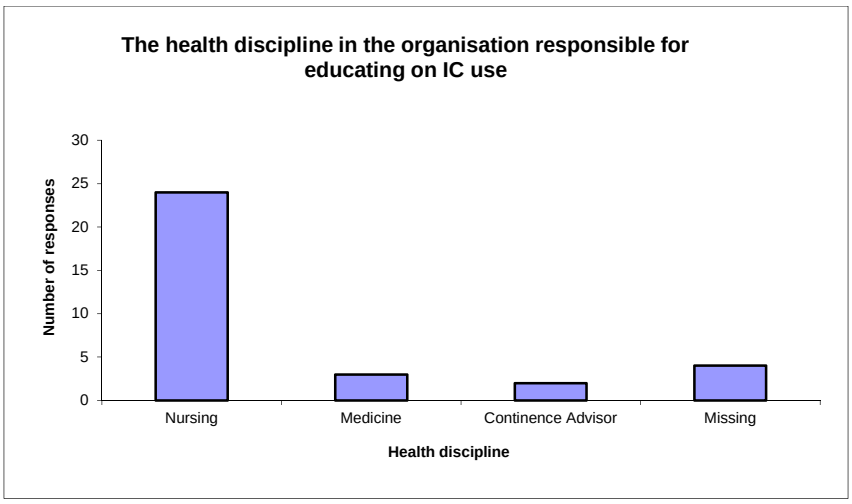

Figure 3. The health discipline responsible for educating clients about IC use

Clean or sterile catheter for IC

Sixteen respondents indicated that they advise IC users to reuse their catheters for IC. Fourteen (50%) advise IC users to reuse PVC catheters and 2 recommend reuse of metal catheters.

Single sterile catheterisation was recommended by 21 respondents: of whom 7 (25%) recommend a PVC catheter and 14 (50%) recommend a hydrophilic catheter. Eight respondents indicated that they provide advice on both sterile PVC and hydrophilic catheters.

Data were missing for 1 respondent and one respondent commented on the need for IC users to try different types to accommodate their lifestyle and abilities (see Figure 4).

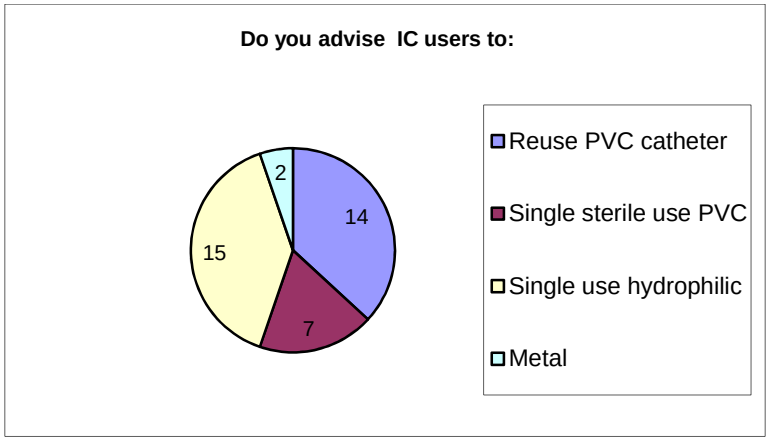

Figure 4. Number of responses on advice given to IC users on catheter use or reuse.

Factors that influence nurses advice about sterile or clean catheter for IC

Twenty-seven respondents (96.4%) self identified factors that influenced their advice to IC users about sterile or clean catheters for IC (see Figure 5). Responses are categorised into cost, patient factors, policy and/or guidelines and other.

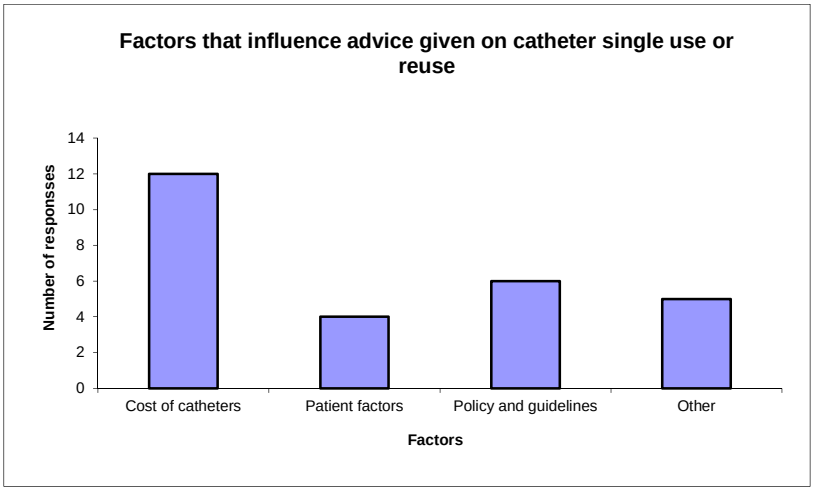

Figure 5. Factors that influence nurses advice about sterile or clean catheter for IC

The cost of catheters was cited by 42.9% of respondents (*n*=12) as a factor that influence their advice to IC users about sterile or clean catheters for IC. Other factors included:

- Patient factors: 4 (14.3%)
    - Patient preference
    - Potential for infection
    - Availability of product
    - Ease of catheterization (i.e. hydrophilic catheter for urethral strictures, hematuria)
    - Environmental factors that may make reuse challenging
- Policy and/or guideline considerations: 6 (21.4%)
    - National guidelines,
    - Local policy / area protocol
    - Hospital policy
    - Government guidelines (i.e. Therapeutic Goods Act)
    - Common practice / Agreed best practice / National practice
- Other: 5 (17.9%)
    - Evidence compared to reusable catheters
    - Research.

In response to the question of whether or not there are any IC users for whom catheter reuse is cautioned, 18 (64%) respondents responded 'yes' and six (14.3%) respondents responded 'no' (see Figure 6).

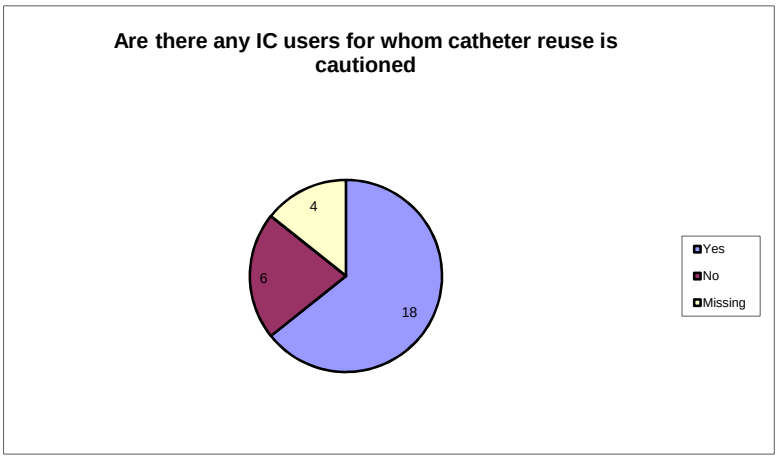

Figure 6. Number of respondents who indicated caution about catheter reuse

Of those respondents who indicated that there are IC users for whom catheter reuse would be cautioned, the following cautions were listed:

- Individuals with recurrent and symptomatic UTI and/or where other contributing factors have been excluded
- Individuals whose immunological status is compromised (i.e. due to chemotherapy, HIV positive)
- Individuals whose living conditions or personal hygiene increases infection risk
- Individuals who have an allergy to bleach.

Financial assistance to purchase IC supplies

Of 28 respondents, 26 (92.9%) indicated that IC users in their country have access to some form of government financial assistance to obtain their IC supplies and 2 (7.1%) did not. Twenty-one respondents (75%) indicated that access to government financial assistance was subject to eligibility criteria and no eligibility criteria was reported by five respondents (17.9%).

Eligibility criterions that were cited included:

- Financial situation, having a low income or being on welfare/a pension / healthcare card
- Diagnosis of a health disorder (i.e. neurological condition) supported with medical authorisation
- Documentation of recurring UTI for single use catheters in some cases
- IC must be done by a Home Care Nurse. Patient cannot be doing the procedure independently.

Respondents were invited to indicate the extent to which access to financial assistance influenced the advice they gave to IC users concerning the reuse or single use of catheters. Thirty-nine percent (*n*=11) respondents indicated that access to financial assistance had 'minimal' influence on the advice they gave concerning sterile or clean IC, four (14.3%) rated it as having 'somewhat' of an influence, six (21.4%) indicated it had a 'moderate' influence and five (17.9%) rated it as having a 'great' influence (see Figure 7). Data were missing for two respondents.

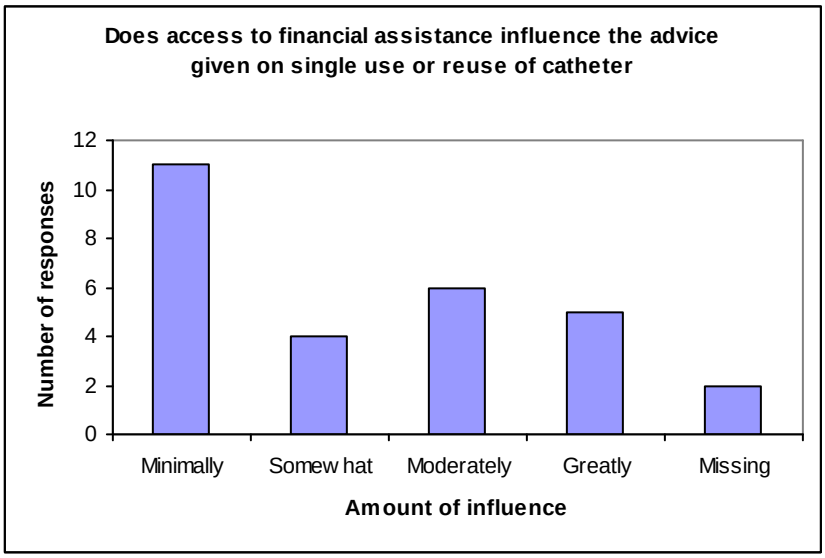

Figure 7. Extent to which access to financial assistance influences advice given to IC users about single use or reuse of catheter

Cleaning and storing catheters for IC users who are advised to reuse their catheters

Participants who advise IC users to reuse their catheters were invited to indicate the nature of advice the give concerning methods to clean and store catheters. There were 16 (57.1%) responses. The most commonly cited advice is to use dishwashing detergent or soap and water to clean catheters. Procedures such as the following were recommended:

> *Wash by hand using a liquid detergent under warm running water, soap and rub for 10 seconds then rinse well. Flick to remove water. Dry outside with tissue or paper towel. Place on clean cloth to air dry. Put in a clean dry container or plastic ziplock bag for the next use. Check for any rough areas or other integrity issues.*

> *Rinse the catheter under cold running water and soak it in a sterilising or bleach solution for up to one hour (the latter is made up of 5mls of 1% bleach to 400mls*

water), then store their catheters in the container they have been soaked in. Change bleach solution every 24 hours.

Rinse the catheter under cold running water and store in a clean plastic bag.

Rinse initially in cool water, then boil or microwave techniques based on published standards.

Rinse, boil water and cool. Divide into two containers. Add equal parts white vinegar to water in one container. Use syringe to flush out catheter, clean inside and out thoroughly. Use plain water to rinse. Set on cloth to dry. Store in ziplock bag, or in clean hand towel if at home.

Frequency of catheter changes for IC users who are advised to reuse their catheters

Sixteen respondents (57.1%) indicated the advice they give to IC users about how frequently they should change their catheters. Ten (35.7) respondents indicated that they advise IC users to change their catheters within a certain timeframe: which ranged from one new catheter each day (for people performing IC ≥ 3 times a day) to one new catheter a month (for people performing IC 1-2 times a day). Most respondents recommended a change of catheter after one week. Five respondents (17.9%) indicated that they advise IC users to change the catheter when it is worn or discoloured. Other factors that were cited included the pliability of the catheter, whether or not it appears worn, feels rough, is cracked or has something lodged in it. One respondent recommended the catheter be used 5-6 times before changing.

Factors that respondents identified as influencing their advice about the frequency of catheter changes were provided by 15 respondents (53.6%). They included:

- The required number of daily catheterisations
- The IC user's risk of UTI
- The IC user's health status (i.e. immunological status)
- The cost of catheters
- Whether or not the IC user has an allergy to bleach
- Patient's understanding

Other factors that respondents identified as influencing the advice given to IC users about how frequency catheters should be changed catheters included the respondent's experience in terms

of how they were taught and the belief that the advice they provided was consistent with 'best practice'.

Further comments

At the completion of the survey respondents were invited to offer general comments. Responses reaffirm the cost of catheters and access to financial assistance as key considerations that underpin the advice nurses give to IC users about using a sterile or clean catheter.

- *Clients will re-use to save money*
- *Most of my clients are guided by cost*
- *IC users can obtain intermittent catheters, for a price if under pension age; however, are exempt if have any disability*.

The following comments [*edited*] highlight the importance that respondents place on their practice being evidence-based:

- *Evidence shows patients are more likely to have trauma and infection with reusable catheters.*
- *Our practices are based on the best available evidence*
- *The NICE guidelines on Male Lower Urinary Tract Symptoms do not refer to the re-use of catheters, only single-use catheter.*
- *Clients get differing advice between health professionals*. *The reuse of catheters for intermittent use needs clarification according to best practice principals.*

Discussion

The objectives of the current pilot project were to identify, compare and contrast the advice nurses give to IC users regarding the use of sterile or clean catheters for long term bladder management by IC. A total of 28 respondents identified that their work includes giving advice about sterile or clean catheters for IC for long term bladder management. Whilst the number of responses was insufficient to compare and contrast nurses' advice by country or by the IC users' access to financial assistance, we were nevertheless able to identify a number of factors that influence such advice.

Catheter reuse was recommended by 16 of 28 respondents (including PVC and metal catheters). The cost of catheters was identified by most of the respondents as a major consideration in whether or not they advise IC users to clean and reuse their catheters. At the same time, When asked to rate the extent of this influence as 'minimal', 'somewhat', 'moderate' or 'great', most

participants ticked 'minimal' or 'somewhat'. This inconsistency between responses is difficult to explain and requires further investigation, but may relate to difficulties with the question.

Another key factor that respondents identified as influencing their advice to IC users concerning reuse was their assessment of the potential for the IC user to develop infection. Based on responses to the question of whether or not there were some IC users for whom catheter reuse would be cautioned, many nurses assess the potential risks associated with the advice they provide on an individual basis. This assessment takes account of the IC user's risk for infection (including their immunological and living conditions).

Responses to questions concerning the advice given to IC users about how to clean and store catheters revealed differences in cleaning procedures in terms of solutions used: whether or not to soak the catheter, the temperature of the water and how and whether or not to dry the catheter. Storage in a clean plastic bag was a common storage method. Advice concerning the frequency with which IC users should change their catheter ranged considerably. Most respondents identified a set timeframe however other factors such as the appearance of the catheter, the presence of debris, the required number of daily catheterisations, the IC user's health status and risk of UTI moderated such advice.

The belief that advice was based on policy (local and/or national), guidelines and/or the best available evidence also underpinned nurses' advice to IC users about clean or sterile catheters. Within the context of policy, it is noteworthy that one respondent reported that IC could only be performed by Home Care Nurses: "patient cannot be doing the procedure independently". It is likely that organisational policies will vary widely across different health settings and countries. As we did not collect or appraise these sources of information, it may be worth identifying and evaluating such information in future research on this topic.

Conclusion

Nurses play a central role in advising IC users about IC for long term bladder management. Such advice should be based on the best available evidence. The sample size for the current project was small. Findings nevertheless suggest considerable variability in nurses' advice to IC users about whether or not they should perform IC using a sterile or clean method. The cost of catheters emerges as a key consideration, as does the nurses' assessment of the IC user's risk for infection. For individuals who are advised to clean and reuse their catheters, advice about cleaning, storage and changing catheters varies. As noted by one respondent, *'clients get differing advice between health professionals. The reuse of catheters for IC needs clarification according to best practice principals'*.

Recommendations

Based on the findings of this survey, we suggest there is a need to consider:

- Supporting further research to establish IC users' access to financial assistance to obtain sufficient supplies of sterile catheter-related equipment as the basis for advocating for equitable access.
- Identifying the policies, guidelines and best available evidence that inform nurses' advice to IDC users on sterile or clean catheters for IC.
- Recommending that IC users be informed of the lack of evidence to support or negate using clean or sterile catheter and given the opportunity to choose

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Appendix A: A survey of nursing advice on sterile or clean intermittent catheters (IC) for long term bladder management

***Instructions**:*
Thank you for completing this survey. We are interested in identifying the advice nurses give concerning the use of sterile or clean catheters for intermittent catheterisation for long term bladder management and to explore factors that inform this advice. Please feel free to add additional information in the comments section. This survey is designed to be anonymous however if you feel that providing information on your country/state identifies you, you may prefer to avoid completing question 12.

***Please note:** Use of a sterile intermittent catheter refers to the single use of a sterile catheter. It is discarded after use. Use of a clean intermittent catheter refers to multiple use of a catheter. It is cleaned and reused.*

1. Please indicate if your work includes giving advice concerning the use of sterile or clean catheters for intermittent catheterisation for long term bladder management
   ☐ Yes
   ☐ No (*thank you – you have completed this survey – It is important that you now email back to ICS secretariat. Please do so.*)

2. Do you advise these IC users to:
   ☐ Reuse PVC catheters
   ☐ Use single sterile use PVC catheters
   ☐ Use sterile single use hydrophilic catheters
   ☐ Other (please specify)……

3. Which factors influence this advice?
   ……
   ……

4. Are there any IC users for whom catheter reuse is cautioned?
   ☐ Yes *(please list)*……☐ No

5. Do IC users in your country have access to **<u>any</u>** form of government financial assistance to obtain their catheter supplies?
   ☐Yes (go to Q6) ☐ No (go to Q8)

6. What level of government financial assistance is available?
   ☐ Full financial assistance ☐ Partial financial assistance

7. Are there any eligibility criteria for access to government financial assistance?
   ☐ Yes (please list)……☐ No

8. Does access to financial assistance influence the advice given to consumers concerning the reuse or single use of catheters for IC?
   ☐ Minimally ☐ Somewhat ☐ Moderately ☐ Greatly

Please answer the following questions only if IC users are advised to reuse catheters

9. What advice is given to IC users about how they should clean and store their catheters?
   .....
   .....

10. What advice is given to IC about how frequently they should change their catheters?
    .....
    .....

11. Which factors influence this advice?
    .....
    .....

12. In which country and state (province) do you work? ……..*(optional question)*

13. Your organization
    ☐ Hospital
    ☐ Community based organization
    ☐ Other *(please specify)* …….

14. Which health discipline in your organization is responsible for educating consumers about IC for long term bladder management? *(you may tick more than one response)*
    ☐ Nursing
    ☐ Medicine
    ☐ Other *(please specify)* …….

Further Comments:
……
……
……
……

Thank you for participating in this membership survey. We invite you to return it by 17th July by email to the International Continence Society Secretariat info@icsoffice.org