

## DETERMINING THE ADVANTAGES AND DISADVANTAGES UNIQUE TO SINGLE-CATHETER AND MULTI-CATHETER USE

### Hypothesis / aims of study

Clean intermittent catheterisation was first introduced in the 1970's to manage voiding problems. The procedure was originally described as a clean rather than sterile technique with advice being given regarding hand hygiene and catheter cleaning and reuse. In the UK, changes in medical device regulation regarding reprocessing of devices (largely to prevent cross-infection) and the introduction of single-use hydrophilic coated catheters meant that most catheters for intermittent catheterisation were designated single-use by manufacturers from 2002 and health care professionals could not continue to recommend their reuse. Multi-use of catheters therefore became rare. Other countries have continued to re-use catheters e.g. Australia and Canada. These changes have resulted in higher costs for intermittent catheterisation in the UK despite lack of demonstrable cost-effectiveness [1] no clear reduction in the incidence of symptomatic urinary tract infection [2] and loss of potential benefits to patients of multi-use. Furthermore, it is not clear what the potential benefits and limitations of multi-use and single-use catheters are. Aim: To determine the advantages and disadvantages unique to single-use and multi-use catheters.

### Study design, materials and methods

- We searched the literature to find papers describing the advantages and disadvantages of single and multi-use.
- We conducted a secondary analysis on qualitative data from the US on community dwelling individuals doing IC with reusable catheters (N=34) [3].
- We examined qualitative data from the live, UK MultiCath study on individuals doing IC with single-use catheters (N=41).
- We synthesised this information and then separated out the unique attributes of single-use and multi-use catheters.

### Results

The literature on advantages and disadvantages was not extensive. From the available literature single-use catheters were found to be easy to open, instantly usable, discreet, safe, sterile, easy to use and trustworthy. The disadvantages related to expense, financial burden on NHS, equipment needed, and environmental issues. Multi-use catheters were found to be less expensive, better for the environment, convenient, and safe. The disadvantages related to washing, drying and storing.

The US data conveyed that users found single-use catheters easy to carry, less likely to cause infection, clean, sterile, with good packaging and comfortable to insert. The disadvantages were linked to re-ordering and cost. Multi-use catheters were easier to carry on holiday. But they were viewed as linked to UTI, less discreet, and the cleaning was described as "a dirty process".

The UK data determined that single use catheters are sterile, easy to use, pain-free, and discreet, but they were also linked to shortages, and greater financial and environmental cost. Multi-use were liked for "always having one", being cost-effective, better for the environment, and easier for travel. But there were concerns about keeping the catheter clean, storing it between uses and preventing infection.

The advantages and disadvantages unique to single and multi-use are summarised below:

<b>Single-use</b>		<b>Multi-use</b>	
Advantages	Disadvantages	Advantages	Disadvantages
Sterile	Re-ordering	Carry less catheters when travelling/on holiday	Cleaning/preparation
Instantly usable (no/little preparation)	Storing catheters	Always having one	Storing equipment
	Shortages	Environment	Carrying used catheter
	Environment	Cost	Perceived link to UTI
	Cost		

### Interpretation of results

- The disadvantages of one approach could be offset by the benefits of the alternative approach, e.g. cost per use could be offset by re-using, and shortages of single-use catheters could be managed by "always having one."
- Concerns about increased infection resulting from multi-use are not supported by the available evidence [2].

### Concluding message

- This study has shown that there are advantages and disadvantages of single and multi-use and that these are complementary.
- Mixed use (a combination of single-use and multi-use catheters) is likely to be optimum for patients.
- The acceptability and safety of mixed use requires testing in a clinical trial.
- There is potential for new reusable catheter designs as well as materials, coatings, cleaning, storage and lubricating methods.

## References

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