How do the costs of disposable and reusable surgical drapes and gowns compare?

In the German national health system, as elsewhere, there are seemingly contradictory pressures to reduce costs while raising medical standards. A recent study by the University of Münster’s CHM has shown that most German hospital managers tended to make their procurement decisions based solely on purchase price. The general opinion is that while reusable products are considered to be environmentally friendly and of high quality, disposables are thought to save time in surgery and to cost less.

Operating theatre textiles belong to a group of textiles known as ‘application sensitive medical products’ as they come into contact with patients and can constitute a potential user risk. Price should only be used as a decisive reason for procurement if comparing identical products.

**Economic aspects**
The CHM study analysed the economic implications of choosing disposable or reusable. It showed that the commercial options have completely different outcomes. Both disposables and reusables are available as standard quality and high quality products. Their use depends on the type of operation being carried out. Cotton drapes and gowns have been discontinued due to the absence of bacterial barrier properties.

During the tender process, prices are usually based on sets (drapes and gowns) and the vital aspect of the precise contents of these and their quality are ignored. Considerations based purely on unit cost are often seen to be flawed in retrospect. Functional defects in surgical gowns, and drapes in particular, can generate additional costs due to additional consumption of materials or even hospital-acquired infections. As a comparison of products of identical contents and quality from different manufacturers is seldom possible, a unit cost comparison is rarely an accurate one.

**Taking account of the hospital procedure**
Working out which costs are relevant to the choice between disposables and reusables involves looking at their entire journey to and through the hospital. This involves everything from whether or not the hospital collects the goods, through hospital storage policy, internal delivery, and disposal, which includes waste disposal or collection by the reusables supplier. The progress, products and compliance with regulations must be monitored throughout the procedure.
Comparing like with like
The CHM study looked at four different types of operation in selected clinics. The type of operation which was finally chosen was a total hip endoprosthesis procedure, as a relatively large amount of fluid is released during this and the drape is exposed to intense mechanical stress. The study considered the best case scenarios often used in tenders and worst case scenarios, and discarded both as atypical of real world situations.

However, the hidden costs in both revealed that disposables’ inferior quality could generate additional costs because of the extra material needed for procedures and the cost of additional theatre time.

There are significant differences in the contents of hip sets from different providers and, with disposables in particular, extra components often had to be added to standardise the sets. For instance, preparing extra drapes incurs an average delay of two minutes at a cost of €16, based on theatre time costs of €8 per minute.

Disposables lower material density makes them harder to attach to patients than reusables. The study showed that this could take an extra 4 minutes, costing an additional €32 in theatre time.

There are other problems encountered with disposables. The first is their tendency to tear and crack. The other is that in complex operations which release large volumes of fluid, reusables absorb more than disposables. Using disposables means that much of this fluid trickles down onto the operating room floor, requiring additional cleaning and decontamination afterwards. Finally, low cost disposables also tend to shed more particles than reusables which again raise cleaning and maintenance costs.

The more complex the operation, the more advisable it is to use high performance products and the greater are the savings made over reusable products.

Total cost accounting
If the entire hip endoprosthesis operation runs smoothly, reusables cost the clinics in the study €36.64, whereas disposables cost €37.98. These costs included purchase price, courier service and disposal. Discounting the worst case scenarios where the unplanned costs for disposable drapes amounted to 180 % of the cost of reusable drapes, the study found that additional costs of €1.36 for reusables and €12 for disposables can be assumed. This saving of at least €10 compared with each disposable set makes reusables an attractive proposition.

Results of the CHM Study:

Disposables are perceived to be cheap and have reasonable quality. Reusables are seen as more expensive and of good quality. Neither view is completely accurate.

- Reusable operating theatre textiles achieve a level of utility, manageability and standby costs which only very few high-performance disposables can match.
- Those high-performance disposables which can match the performance of reusables are usually more expensive than reusables.
- Reusables are preferable in terms of tensile strength, liquid absorption and bacterial barrier protection.
- Lower grade disposables are preferred by hospitals whose purchasing policy is based on price alone. They cannot be compared with reusables as far as quality is concerned.
- The market for sets will continue to grow. Providers of reusables could respond to requests from hospitals if they offered sets suited to each hospital’s specific requirements.