Absorbent products for urinary/faecal incontinence: a comparative evaluation of key product designs


Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
This Health Technology Assessment (HTA) examined the clinical and economic impact of various absorbent product designs for urinary or faecal and urinary incontinence in women with light incontinence, and men and women with moderate or heavy incontinence. The authors concluded that there was considerable variability in individual preferences among absorbent products. Cost-effective management might be achieved by allowing users to choose combinations of designs for different circumstances within a limited budget. The study was conducted in accordance with HTA criteria, which should ensure the validity and reliability of the authors’ conclusions.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This Health Technology Assessment (HTA) examined the clinical and economic impact of various absorbent product designs for urinary or faecal incontinence in women with light incontinence, and men and women with moderate or heavy incontinence, living in the community and in nursing homes.

Interventions
The interventions were grouped on the basis of the three biggest market sectors:

For women with light urinary incontinence, there were four design categories (disposable inserts or pads, menstrual pads, washable pants with integral pad, and washable inserts).

For moderately or heavily incontinent adults (urinary or urinary and faecal) living in the community, there were two or three products available from five design categories (disposable inserts with mesh pants, disposable diapers or nappies, disposable pull-ups, disposable T-shaped diapers or nappies with waist-band, and washable diapers).

For moderately or heavily incontinent adults (urinary or urinary and faecal) living in nursing homes, one product from each of the four disposable categories reported above was considered.

Location/setting
UK/community and nursing homes.

Methods
Analytical approach:
The analysis was based on a single randomised controlled trial (RCT) for each study population (three RCTs in total), with a short-term horizon. The authors stated that the analysis was carried out from the perspectives of individual participants and the National Health Service (NHS).

Effectiveness data:
The evidence came from three clinical trials, with a cross-over design, in which each participant tested all products within their group in random order: for the first trial (Trial 1) there were 85 women living in the community (Clarke-O'Neill, et al. 2004, see ‘Other Publications of Related Interest’ below for bibliographic details); for the second trial
(Trial 2a) there were 85 patients (49 men and 36 women) living in the community (Hu, et al. 1988, see 'Other Publications of Related Interest' below for bibliographic details); and for the third trial (Trial 2b) there were 100 patients (27 men and 73 women) living in 10 nursing homes (Hu, et al. 1990, see 'Other Publications of Related Interest' below for bibliographic details). The key outcome was product performance (e.g. comfort and discreetness); various measures of the participants' overall opinion were also used. A final interview was carried out within four weeks of completion of the testing period, including a global assessment of acceptability of the absorbent products.

**Monetary benefit and utility valuations:**
Not relevant.

**Measure of benefit:**
The summary benefit measure (derived from the clinical trials) was the mean visual analogue scale (VAS) score as a measure of product performance.

**Cost data:**
The economic analysis considered the cost of products or designs, including acquisition prices (for disposables), laundry costs (for washables), and amount of time taken by staff to change products (for nursing home residents). Costs were from national chain retail outlets, mail order catalogues, and NHS providers (such as NHS Logistics). Resource use was based on data from the RCTs. All costs were in UK pounds sterling (£) and the price year was 2005.

**Analysis of uncertainty:**
A sensitivity analysis was undertaken using confidence intervals around mean estimates.

**Results**

**Light urinary incontinence in the community (Trial 1):** The analysis revealed that products were similar in terms of clinical outcomes. VAS scores indicated that no product was significantly worse than the other products in the same group for leakage and overall opinion. Participants’ rating of the ability of the product to hold urine without leaking reflected the leakage performance from pad leakage diary data: disposable inserts were better than menstrual pads, menstrual pads were better than washable pants, and washable pants were better than washable inserts.

Overall acceptability in terms of VAS scores was 19.9 (95% CI 15.1 to 24.6) with washable inserts; 42.7 (95% CI 36.1 to 49.4) with washable pants; 58.3 (95% CI 53.0 to 63.6) with menstrual pads; and 79.3 (95% CI 75.5 to 83.1) with disposable inserts. The mean VAS score of menstrual pads was 20 points lower than that of disposable inserts, but they were acceptable to 80% of participants and would be recommended by 70%.

Mean monthly costs were £25.40 with disposable inserts, £13.70 with menstrual pads, £8.40 with washable pants, and £2.80 with washable inserts.

The incremental analysis with product-pair comparison produced the following results: no design dominated; the incremental cost per VAS point gained was £0.246 with washable pants over washable inserts, £0.340 with menstrual pads over washable pants, and £0.557 with disposable inserts over menstrual pads. In summary, the most cost-effective option was to allow individuals to mix and match products.

**Moderately/heavily incontinent in the community (Trial 2a):** Disposable pull-up pants were better than inserts (but not diapers) for the daytime, with disposable pull-up pants and diapers better than inserts at night. However, disposable pull-up pants were expensive and diapers were the most cost-effective design for the day. For the night, washable diapers were the most cost-effective design, but for those who found them unacceptable, disposable diapers were the most cost-effective choice. The inserts were worse than all the other designs for leakage performance for both day and night.

**Moderately/heavily incontinent adults in nursing homes (Trail 2b):** Disposable diapers were the most cost-effective night design for men and women, and were cost-effective for men during the day; the preferred daytime strategy for women was disposable pull-up pants.

**Authors' conclusions**
The authors concluded that there was considerable variability in individual preferences among absorbent products. Cost-effective management might be achieved by allowing users to choose combinations of designs for different circumstances within a limited budget. Further research should investigate the development of more effective washable products and male disposable products.

**CRD commentary**

**Interventions:**
A wide range of comparators was selected for each patient population. A clear description of each absorbent design was provided. The selection of the comparators appeared to have been appropriate as the products were selected to represent each design, with the aim of including the best of the most commonly used products within a design group.

**Effectiveness/benefits:**
The clinical data were from three RCTs with cross-over designs that included the relevant population and setting. The authors stated that one advantage of the cross-over design was that it allowed for comparison at the individual rather than the group level. Also, patients receiving multiple interventions could express preferences. Details on patient recruitment, sample size, and randomisation and assessment procedures were explicitly reported. Several outcome measures were reported, but costs were combined only with the VAS results (used to assess patient global preference of the products compared).

**Costs:**
The categories of costs reflected the perspective adopted. Resource use was from the patients included in the clinical trials, while unit costs were generally from standard NHS sources. Some details on unit costs and resource use were given. The authors pointed out some areas of uncertainty arising from the variability of products and prices, the limited availability to the NHS of some products, and the assumption about the life of washable products. The price year was implicitly reported as 2005.

**Analysis and results:**
The results of the analysis were clearly reported. Both average and incremental cost-effectiveness ratios were presented. No formal sensitivity analysis was conducted, but the use of several scenarios and several outcome measures provided a clear overview of the different clinical and economic impacts of the products compared. The results should be considered to be representative of the UK and not transferable to other contexts. The authors recommended the development of a tool to measure quality of life for users of absorbent products.

**Concluding remarks:**
The study was conducted in accordance with HTA criteria, which should ensure the validity and reliability of the authors' conclusions.

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