Absorbent products for containing urinary and/or faecal incontinence in adults

Brazzelli M, Shirran E, Vale L

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.

Health technology
The use of disposable and non-disposable pad-and-pant systems, all-in-one diapers (bodyworns), disposable underpads, non-disposable underpads, and superabsorbent and fluff pulp products for the containment of urinary and/or faecal incontinence in adults.

Type of intervention
Treatment

Economic study type
Cost effectiveness analysis.

Study population
The study population comprised adults with urinary and/or faecal incontinence. The trials reviewed included a total of 345 participants.

Setting
The setting was the community and secondary care (nurse ward). The economic study was carried out in the UK.

Dates to which data relate
The effectiveness data were obtained from studies published between 1988 and 1995. The resource use data related to 1999/2000.

Source of effectiveness data
The effectiveness data were derived from a review or synthesis of completed studies.

Outcomes assessed in the review
The main outcomes in the review were the number of pad changes, the leakage rate, skin complaints and the patients’ preferences.

Study designs and other criteria for inclusion in the review
Studies were included in the review if they used a random or quasi-random method of allocating the participants to the treatment groups, and if they evaluated the performance of different absorbent products for the containment of urinary and/or faecal incontinence.

Sources searched to identify primary studies

NHS Economic Evaluation Database (NHS EED)
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The electronic databases searched were MEDLINE (through January 2000), CINAHL (through November 1999), HealthSTAR (through December 1999), and the Cochrane Library, the UK National Research Register and ClinicalTrials.gov (all in April 2000). The reference lists of relevant articles were checked for additional trials. Investigators and providers of absorbent products were also contacted for any further published or unpublished trials.

**Criteria used to ensure the validity of primary studies**
The quality criteria used to ensure the validity of the primary studies in the review were randomisation and blinding.

**Methods used to judge relevance and validity, and for extracting data**
Two reviewers independently assessed the quality of the eligible trials for the review. The reviewers were not blinded to the author, institution, or journal. Any disagreements were resolved by discussion, or by reference to a third independent assessor.

**Number of primary studies included**
Five randomised controlled trials published in 10 articles met the inclusion criteria for the review.

**Methods of combining primary studies**
The results of three primary studies were reanalysed quantitatively with the use of Review Manager Software (Meta View 4.1). Summary odds ratios, when appropriate, were calculated using a fixed-effect model according to the Mantel-Haenszel method.

**Investigation of differences between primary studies**
The authors reported that the samples were too small and clinically heterogeneous to undertake a quantitative analysis. They therefore restricted their analysis to a narrative summary of the evidence.

**Results of the review**
The results of the review were reported for each of the technology comparisons.

When comparing disposable versus non disposable bodyworns, significantly fewer skin problems were observed in the disposable bodyworns group (5 out of 34) than in the non disposable group (27 out of 34). The odds ratio (OR) was 0.08 (95% confidence interval, CI: 0.03 - 0.20). Disposable bodyworns were associated with fewer pieces of laundry (weigh mean difference, WMD = -1.200, 95% CI: -2.021 - -0.379), and lower poundage on average per day (WMD -1.900, 95% CI: -2.67 - -1.13). They were also associated with less cost ($905 versus $953 per year) and fewer changes (4.27 versus 4.47; 5.9 versus 6.6).

When comparing disposable versus non disposable underpads, there were small differences in favour of disposable underpads in terms of skin problems. However, the difference was not statistically significant (OR 2.68, 95% CI: 0.81 - 8.83). Non disposable underpads required less time per clean-up episode (12.8 minutes) than disposable underpads (15.45 minutes).

When comparing bodyworns versus underpads, fewer skin problems were observed in the bodyworn group (17 out of 36) than in the underpad group (20 out of 32). However, the difference was not statistically significant (OR 0.55, 95% CI: 0.21 - 1.44). Underpads required less time for each clean-up episode (15.45 minutes) than bodyworns (15.85 minutes).

When comparing superabsorbent versus fluff pulp products, no significant differences were reported in the users' preferences (OR 0.68, 95% CI: 0.20 - 2.30). One of the studies included in the review reported that the patients allocated to fluff pulp products experienced more severe skin problems, (p<0.03). Also, superabsorbent products required less time per clean-up episode (15.3 minutes) than fluff pulp products (16 minutes).
Measure of benefits used in the economic analysis
No summary measure of benefits was covered in the trials included in the review. A cost-consequences approach was therefore adopted.

Direct costs
The total cost per year was reported for each alternative. This included the costs of supplying the product, clean-up following an episode, cleaning and linen products, and treating skin complaints. All the estimates of costs and relative value came from the review and the costing exercise. The costing exercise used standard resources to value the products and medications, the salary of a registered nurse to estimate cleaning and treatment of skin infections, and the advice of a continence advisor and a district nurse for the valuation of skin deterioration. The costs and resource use were not reported separately, although the unit cost of every component of the total cost was tabulated in the paper. All the costs were calculated in 1999/2000 UK pounds and converted to US dollars. Discounting was not considered due to the short time horizon (1 year).

Statistical analysis of costs
No statistical analysis of the costs was reported.

Indirect Costs
No indirect costs were included.

Currency
UK pounds sterling (£). These were converted into US dollars ($). The exchange rate was $1.00 = 0.63 (average exchange rate from 1 January 2000 to 1 June 2000).

Sensitivity analysis
No sensitivity analysis was carried out. However, uncertainty surrounding each component of the total cost was tackled by providing a low and high estimate. These values came from the literature and, when no data were available, by applying a 20% change to the baseline values.

Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.

Cost results
The total cost per year was $8,484 for disposable full-pulp underpads, $6,884 for disposable superabsorbent bodyworns, $6,221 for non disposable bodyworns, $5,833 for disposable full-pulp bodyworns, and $5,767 for non disposable underpads.

Synthesis of costs and benefits
The costs and benefits were not combined due to the cost-consequences approach adopted.

Authors' conclusions
Disposable products performed better than non disposable products in preventing skin condition problems, and superabsorbent products performed better than fluff pulp products. However, due to the limitations of the available data, these findings should be treated with caution and do not provide a firm basis for practice.
The rationale for the choice of the comparators was clear. They seem to cover the wide range of products for this treatment and the extensive comparisons reflect general practice in the UK.

Validity of estimate of measure of effectiveness
The heterogeneity, low methodological quality and small sample sizes of the studies included in the review may have hindered the validity of the effectiveness results. The authors reported that it would have been impractical to try to combine the different studies identified in their systematic search. They therefore had to restrict their analysis to a narrative summary of the available evidence.

Validity of estimate of measure of benefit
No summary measure of benefits was used since the authors undertook a cost-consequences analysis. The health benefits are therefore associated with the effectiveness results.

Validity of estimate of costs
Only the direct costs to the health service were included. A societal perspective was not considered. A price year was provided, but the resources and the quantities were not reported separately. A more detailed description of resource use would help in generalising these results to other settings.

Other issues
A caveat to the study is the lack of a measure of benefits. This means that it is difficult to make comparisons with other studies and technologies necessary to help decision-makers in the allocation of resources. The efficient allocation of resources approach, adopted to compute the incremental cost of an extra unit of benefit, could be hampered by the scope of the costs in this analysis.

The authors did not report comparisons of their findings with those of other research. It is therefore difficult to judge whether this analysis follows a prior trend. A further issue is the transferability to other settings, as all the studies that met the inclusion criteria were UK-based. This could be overcome by a more detailed description of resource use.

Implications of the study
There is a need for well-designed larger trials that are less likely to provide biased results. Such trials should include randomised multi-centre and crossover designs. Factors such as the level of incontinence should be considered when assessing the performance of different products.

Source of funding
None stated.

Bibliographic details

Other publications of related interest


1986.


**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Absorption; Clinical Trials as Topic; Clothing /economics; Consumer Product Safety; Cost-Benefit Analysis; Fecal Incontinence /nursing /prevention & control; Female; Follow-Up Studies; Humans; Incontinence Pads /economics; Male; Materials Testing; Urinary Incontinence /nursing /prevention & control

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