

Dynamic and static support mattresses and overlays decreased pressure ulcer incidence when compared to standard care in adult acute care settings

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CLINICAL SCENARIO:

People who are immobile due to severe acute illnesses (eg. those in intensive care units) or neurological deficits are at risk of developing pressure ulcers. Pressure areas can lead to major skin breakdown and infection, and reduce participation in rehabilitation and daily activities. There is also a significant cost associated with the prevention and treatment of pressure ulcers.

Occupational therapists prescribe equipment for people with limited mobility. Therapists need to be aware of risk factors for pressure ulcers and effective preventative treatments. There are many mattresses, cushions, and other devices available commercially for pressure area prevention. However, information regarding the most effective surfaces is limited, particularly for paediatric populations. Many pressure area prevention devices are designed for adults and may not be suitable for children. For instance, alternating pressure solutions may not always be appropriate for children who weigh less than the manufacturer's recommended minimum weight. Neonates have reduced muscle bulk, fat reserves and collagen levels, placing them at increased risk of developing pressure areas despite their small weight. In general the ratio of surface area of a child's head to body is larger than in an adult, meaning there is increased pressure and risk of ulcer development on a child's head (Murdoch 2002).

FOCUSSED CLINICAL QUESTION: What are the most effective support surfaces for preventing pressure areas in children in the paediatric acute care setting?

SUMMARY of Search, 'Best' Evidence' appraised, and Key Findings:

No evidence specific to children was located. Two systematic reviews relevant to adults were located and appraised (Cullum et al, 2007; Reddy et al, 2006). The evidence suggests that in adult acute care settings:

- Both dynamic and static support mattresses and overlays decreased pressure area incidence when compared to standard care.
- There may be no difference between dynamic and static surfaces, nor between overlays and mattresses.
- There is insufficient evidence to support the use of nutritional support or to recommend turning as interventions to reduce pressure areas. Topical agents may reduce pressure care incidence.

CLINICAL BOTTOM LINE: Dynamic and static support mattresses and overlays decreased pressure ulcer incidence when compared to standard care in adult acute care settings. Turning of patients was not included as part of the interventions in the trials. There is no evidence specific to paediatric acute care.

Limitation of this CAT: This critically appraised paper (or topic) has been peer-reviewed by one other independent person.

SEARCH STRATEGY: The search was conducted up to May 2007.

Terms used to guide Search Strategy:

- **P**atient/Client Group: children, bed bound, hospitalised, acute, ICU, 0-16 year olds, incontinent, catheterised, immobile
- **I**ntervention: pressure care, alternating air, gel overlays, mattress, turning, foam, convoluted foam, positioning, re-positioning, sheep skin, ROHO, overlay
- **C**omparison: Nil terms used
- **O**utcome(s):reduction or prevention of pressure areas/ sores/ ulcers, skin breakdown

Databases and sites searched	Search Terms	Limits used
Cochrane PEDro OTSeeker CINAHL Medline Clearing houses (USA and New Zealand) OT-CATS	Pressure sore/pressure ulcer Pressure area Skin breakdown Decubitis ulcer Pressure ulcer Beds and mattresses Pressure care Flotation beds Alternating air Gel overlays Pillows and cushions Mattress/beds and mattresses Turn Foam Positioning Re-positioning Sheep skin/ sheepskin Roho Overlay Alternating pressure Bed rest/bed bound Hospitalised /Child, hospitalised/ adolescent, hospitalised Acute care / hospital units Intensive care units/ intensive care/ ICU/ Critical care Inpatients Immobile / immobilisation/ immobility Clinical trials Randomised control trial Systematic review	Limit to infant (<1 – 23 months), preschool child (<2 – 5yrs), child (<6 – 12 yrs) or adolescence (<13 – 18yrs) Evidence based medicine reviews

INCLUSION and EXCLUSION CRITERIA

- **Inclusion:** Randomised controlled trials or systematic reviews evaluating support surfaces and which included pressure area prevention/incidence as a major outcome variable.
- **Exclusion:** nil

RESULTS OF SEARCH

No articles evaluating support surfaces in children were located, therefore articles relevant to adults in acute care settings were accepted. Two systematic reviews of pressure area prevention in adults were located. See Table 1. Articles which were not included in, or were published since, the searches contained within the reviews were also considered. No articles meeting the inclusion criteria were located, however. Two clinical practice guidelines were also located but not included because they were developed from lower levels of evidence.

Table 1: Summary of Study Designs of Articles retrieved

Study Design/ Methodology of Articles Retrieved	Level	Number Located	Author (Year)
Systematic Review	Level 1	2	Reddy, Gill & Rochon (2006) Cullum, McInnes, Bell-Syer & Legood (2007).
Clinical Guidelines	N/A	2	National Collaborating Centre for Nursing and Supportive Care (2003) Registered Nurses Association of Ontario (2005)

BEST EVIDENCE

The following two systematic reviews were included as they comprised the highest level of evidence to address the issue of support surfaces in acute care in adults given the absence of studies in paediatrics.

SUMMARY OF BEST EVIDENCE

Table 2: Description and appraisal of Cochrane systematic review by Cullum, McInnes, Bell-Syer & Legood (2007).

Aim of the Systematic Review:

To systematically review the evidence examining the effectiveness of support surfaces in prevention of pressure ulcers in any clinical population in any setting.

Study Design: Cochrane systematic review of randomised control trials.

Search Strategy:

Terms used: beds/bed/bedding, mattress, cushion, trans/foam, overlay, gel, pad/s, pressure relie*, pressure device, pressure reduction, pressure reducing, low pressure and support, low pressure and device, alternat* pressure, constant pressure, air suspension, water suspension, clinifloat, vaperm, therarest, maxifloat, sheepskin, hammock, silicore, Pegasus, foot waffle, airwave therapy, turning table, kinetic table/therapy, air bag, elevation device, static air, decubitus ulcer, bed ulcer, bed sore, pressure ulcer.

Databases searched: The Wounds Group Specialised Trials Register and MEDLINE, EMBASE, CINAHL were searched up to January 2004. The Cochrane Central Register of Controlled Trials (CENTRAL) was searched to Issue 4 2003. Also relevant conference proceedings were hand searched.

Selection criteria: Randomised controlled trials which reported objective, clinically relevant outcome measures. No restrictions on language, publication status, setting or date.

Outcomes sought: Incidence of pressure areas.

Methods:

Articles were included if they complied with clear criteria. All articles were assessed by two reviewers. Any disagreements were resolved by a third reviewer, who also checked any studies rejected by the reviewers.

Data were extracted from studies in a pre-prepared table format addressing specific descriptive and quality criteria, including inclusion and exclusion criteria, *a priori* sample size calculation, evidence of allocation concealment and randomisation, blinded outcome assessors, clear description of interventions and classification by grading and frequency of pressure areas. Where information was not available within the article, reasonable efforts were made to source this from the authors. Relative risk was calculated for categorical outcomes and where possible 95% confidence intervals were included.

Due to the large variety of individual support surfaces included in the studies, studies were categorised by type of support surface. These categories included i) constant low pressure devices, ii) alternating pressure devices and iii) standard surface. Results were then pooled according to type of comparison (eg. Constant low pressure vs standard mattress). Items that did not clearly fit into a category were placed in an 'other' category. These included operating table/accident and emergency trolley overlays, profiling beds, seat cushions and kinetic turning tables. Where mattresses were described as 'standard' with no further classification, they were pooled according to the country of the study to attempt to reduce variance.

Main Findings:

Forty-one relevant randomised clinical trials were identified. The sample sizes in the studies ranged from 40 – 1166 participants. A wide variety of study settings were included. Four studies examined operating table surfaces, six studies were set in intensive care units, eight studies included orthopaedic patients only, one involved an accident and emergency department and the remaining studies examined at a variety of patients, including those in nursing homes and on general medical and surgical wards.

Of the 41 studies, 21 included patients without pre-existing pressure ulcers; 4 included patients with ulcers greater than stage 1, and 3 included both patients with and without pressure ulcers. Thirteen studies did not clearly specify the baseline skin status of participants.

The majority of the studies evaluated different mattresses, overlays and beds. Only eight of the studies looked at other surfaces; including three studies of cushions, two of sheepskins and three of turning beds/kinetic therapy.

The period of follow up was not clearly described in some studies. The ages of patients were not outlined for all studies, and where specified the youngest age included was 15 years old. There did not appear to be any studies investigating the paediatric population. The reviewers included detailed tables and forest plots to clearly display the details and statistical information for each study. Relative risk (and 95% CI) were reported in tables of comparison analyses.

Generally, the studies included had small sample sizes and lacked methodological rigour. Approximately 50% of studies allocated patients with true randomisation and concealed allocation

Low-Tech Constant Low Pressure (CLP) Supports

This included comparisons of CLP supports with standard foam mattresses, and comparisons between different low-tech CLP supports. Low-tech CLP referred to sheepskin, static air-filled supports, water-filled supports, contoured or textured foam supports, bead filled supports and silicone-filled supports. Seven RCT's compared CLPs to standard mattresses, five compared different high-specification foam mattresses and eight compared different CLP devices

Low-tech CLP vs standard foam mattress

These seven studies indicated a significant reduction in number of pressure sores amongst patients assigned a variety of specialty CLP mattresses (Comfortex DeCube mattress, Beaufort bead bed, Softform mattress, water-filled mattress), compared to those on standard hospital foam mattresses. One study found a significant decrease in the incidence of grade I pressure ulcers and a non-significant decrease in incidence of pressure ulcers grade II – IV. Few studies detailed the definition of a standard hospital mattress, limiting the ability to compare and interpret these results. When data for studies completed in the UK were pooled, a significant benefit was maintained. These trials were of mixed quality and did not use blinded outcome assessments.

Comparisons between alternative foam mattresses

Five studies performed comparisons of high-specification foam products. Overall the studies had poor methodology including small sample sizes and no use of allocation concealment nor blinded outcome assessment. Significant reductions in pressure incidence were associated with Clinifloat, Therarest, Vaperm and Transfoam compared with NHS standard foam. One study reported significant reduction in pressure ulcers when a mattress replacement (maxifloat) was compared to a 4 inch thick foam overlay.

Comparisons between low-tech CLP's

Eight studies compared a variety of different CLPs. Most of these trials were underpowered, and/or had methodological flaws. Only one study reported clinically significant benefit. This study, involving 297 orthopaedic patients, demonstrated significant reduction in the number of pressure ulcers among patients using sheepskins compared to standard treatment.

High-tech pressure relief

High-tech pressure supports refers to those with mechanical components, including alternating pressure supports. Eleven RCT's evaluated alternating pressure supports in prevention of pressure ulcers when compared with various CLP devices (8 studies) and with other alternating pressure devices (3 studies).

Comparisons between Alternating Pressure and Standard Hospital Mattress

One RCT compared alternating pressure surfaces to standard hospital mattresses and reported that alternating pressure surfaces are effective in reducing incidence of pressure ulcers. This large study (n=482) did not detail allocation concealment or blinded outcome assessment.

Alternating Pressure compared with CLP

These 8 trials presented conflicting evidence of the relative effectiveness of various alternating pressure and constant low pressure devices. One large study reported significant effectiveness of alternating pressure devices compared to CLP devices. However, this study included a wide variety of supports and settings making it difficult to interpret. Several small studies compared different AP and CLP devices and reported no significant difference. Many of these studies were underpowered and therefore unable to detect clinical significance. When pooled according to type of device examined (eg. Silicore/foam overlays or static water/static air) in comparison to alternating pressure devices no significant difference was detected. An ICU study utilising a complex factorial design to compare various combinations of standard, constant low pressure, and alternating pressure supports also failed to identify significant differences between high and low tech support surfaces.

Comparisons between different alternating pressure devices

Three studies have compared different models of alternating pressure devices. However, these had methodological flaws and failed to convincingly demonstrate any significant differences between devices.

Low Air-Loss beds

Two trials examined low air-loss beds; one trial showed that low air-loss beds were more cost effective at decreasing the incidence of pressure ulcers in critically ill patients than a standard ICU bed. The other trial did not indicate a clinical significance.

Other Interventions

Kinetic Turning Table

Turning beds are motorised to constantly turn and tilt the patient. Four RCT's addressed these devices but two were unable to be located by the reviewers. The remaining two had small sample sizes and did not indicate beneficial effect of kinetic therapy on pressure ulcer incidence compared to routine two hourly turns or conventional beds.

Profiling Beds

One recent trial found no pressure ulcers developed amongst patients (n=70) assigned either a profiling bed with a pressure reducing foam mattress/cushion combination or a flat-based bed with a pressure-relieving/redistributing foam mattress/cushion combination.

Operating Table Overlays

Four RCTs evaluated the use of pressure relieving devices on operating tables. One compared a visco-elastic polymer pad with a standard table and found a relative reduction in the incidence of post-operative pressure ulcers. Two further studies compared the Micropulse alternating system (used both during surgery and post-operatively) with a gel pad used during surgery and a standard mattress post-operatively. When pooled these trials indicated a relative risk of 0.21 (CI 0.06 – 0.7) in favour of the Micropulse System. However the methodology makes it unclear as to whether this is due to intra-operative or post-operative use, or both. One further trial compared a mattress overlay on an operating theatre trolley to usual care, and concluded that the overlay group had an increased risk of developing pressure ulcers. However, they provided minimal details about the mattress and postoperative skin care making clinical implications difficult to assess.

Overlay used on Emergency Department Trolleys

One study examined use of a visco-elastic foam mattress on arrival, followed by a visco-elastic foam overlay on a standard hospital mattress compared to a standard trolley and ward mattress amongst patients with a suspected hip fracture. They found no significant differences in pressure area incidence.

Seat Cushions

Three RCTs compared different seating cushions for effectiveness in prevention of pressure ulcers. Studies comparing bespoke contoured foam, Jay gel and foam wheelchair cushion and a contoured foam cushion with posterior cut out to various standard foam cushions failed to produce statistically significant differences in reduction of pressure ulcers. The Jay gel and foam cushion was associated with reduced incidence of pressure ulcers, (RR 0.61, CI 0.37 – 1.00), but this difference was not clinically significant.

Original Authors' Conclusions

- Higher specification mattresses should be considered for people at high risk of pressure ulcer development, instead of standard hospital mattresses.
- Pressure relief should be considered for high risk patients in the operating theatre, as this pressure relief is associated with reduced incidence of post-operative pressure ulcers.
- Medical grade sheepskins were associated with decreased incidence of pressure ulcers in one study.
- The relative merits of higher-tech constant low pressure and alternating pressure for prevention of pressure ulcers are unclear.
- Seat cushions have not been adequately evaluated for reduction in incidence of pressure ulcers.
- Further research utilising independent, well-designed, multi-centre RCTs is required

Critical Appraisal (Cullum et al, 2007):

Validity

The strengths of this review included:

- The comprehensive search strategy used, including contacting authors for further details where necessary.
- The use of two reviewers who independently assessed articles for inclusion eligibility, and a third reviewer whom resolved any disputes.
- The calculation and presentation of specific statistical data including relative risk and 95% confidence intervals
- Data were clearly presented with a summary of included trials in clear tables including forest plots for each trial.

Some issues which were not adequately described in the review, possibly as they were not adequately reported in individuals studies, are as follows:

- The authors did not report whether turning was included as part of the interventions in the included trials. Turning patients at intervals is considered standard practice for pressure area prevention.
- The report does not mention whether the studies evaluated incidence of pressure areas on any part of the body or whether incidence on specific body areas were evaluated.
- Details regarding the duration of follow up in the various studies was not clearly outlined.
- The authors did not clearly define what a 'standard' mattress/support was, which may vary between hospital systems and countries.
- No description of usual care was included, meaning that it is unknown how other factors such as turning may impact on the patients.

Interpretation of Results

The evidence from this systematic review suggests that use of a specialised support surface is more beneficial than standard mattresses in reducing the incidence of pressure areas in adults in acute care settings. There appears, however, to be no significant benefit incurred by either using a mattress compared with an overlay, or using a low tech compared with high tech surface. This conclusion should be considered cautiously as the clinical question of this CAT is related to pressure area

prevention in children in acute care settings. No identified studies included children from 0 – 15 years. The majority of studies were in varied acute settings, however outcomes in these settings were not considered independently.

Summary/Conclusion:

This evidence, which can be cautiously extrapolated from this systematic review of RCTs in adults is that:

- Constant low pressure and alternating pressure support surfaces and overlays are associated with a decreased incidence of pressure ulcers in comparison to standard care.
- There is no clear difference in pressure ulcer incidence between constant low pressure and alternating pressure devices.
- There is evidence that medical sheepskins decrease pressure ulcer incidence.

Table 3: Description and appraisal of systematic review by Reddy, Gill and Rochon (2006).

Aim of the Systematic Review:

To systematically review the evidence examining interventions to prevent pressure ulcers.

Study Design: Narrative systematic review.

Search Strategy:

Terms used: pressure ulcer, pressure sore, decubitus, bedsore, prevention, prophylactic, reduction, randomised, clinical trials.

Databases searched: Medline, EMBASE, CINAHL, Cochrane Database, UMI Proquest Digital Dissertations, ISI Web of Science and Cambridge Scientific Abstracts. Also bibliographies of identified articles were searched. Searching was completed up to mid 2006.

Selection criteria: randomised controlled trials which reported objective, clinically relevant outcome measures. No restriction of language, publication date or setting.

Outcomes sought: incidence of pressure areas.

Methods:

Articles were classified according to whether the intervention addressed:

- i) Decreased mobility (using support surfaces, repositioning, exercise, or incontinence management),
- ii) Poor nutrition, or
- iii) Skin health

Articles were also classified according to the setting of the study, i.e. acute care, long term care (LTC) or rehabilitation. A number of studies classified as acute care evaluated surfaces in operating theatres.

Articles were quality assessed using the CLEAR NPT (Boutron et al., 2005), a checklist to appraise non-pharmacological trials. The checklist evaluates randomisation, allocation concealment, participant blinding, blinding of outcomes assessor, consistent follow up schedule between groups and intention to treat analysis.

Main Findings:

Fifty-nine relevant articles with a total of 13,854 participants were located. Sixty-eight percent of participants were in acute care, 17% in LTC, 2% in rehabilitation and 13% in mixed settings. Details of eligible studies were tabulated and included: number of participants enrolled and completed, length of follow up, type of setting, types of interventions, CLEAR NPT criterion and a Yes/No indication as to whether pressure area incidence was reduced. No actual data (ie effect size, confidence intervals) were provided. Ages of participants were not always identifiable but no studies of children were evident. Generally the studies were of low methodological quality.

Interventions targeting impaired mobility:

Fifty-one (of 59) studies were in this classification with 69% of the participants in acute care. Length of follow up was 1 to 224 days.

Support surfaces.

Interventions included:

- i) Static support surfaces (eg mattresses and mattress overlays filled with air, water, foam, gel or a combination)
- ii) Dynamic support surfaces which mechanically vary pressure (eg alternating pressure mattresses, low air-loss beds and air-fluidised mattresses).

Authors concluded that:

- Specialised foam overlays on operating theatre beds decreased pressure area incidence
- Specialised foam (convoluted, cubed) and specialised sheepskin (denser and thicker) overlays were superior to standard hospital mattresses
- There was probably no difference between dynamic and static support surfaces, but one (low scoring) trial found that both dynamic and static support surfaces were better than standard mattresses.
- There was no difference between dynamic support overlay and dynamic support mattresses although the mattresses may be more cost effective and more acceptable to patients.
- There were no differences between rotating beds and either standard beds or standard ICU beds (not defined but probably dynamic support surface).

Repositioning

One study on turning found that 4 hourly turning combined with a specialised mattress was more effective than 2 or 3 hourly turning on standard mattresses. This was a low quality scoring study which didn't compare equivalent frequencies of turning on the different support surfaces thus the specific effect of turning was unable to be determined. One study compared two different degrees of side-lying; no difference in pressure area incidence was found between 30° and 90° side-lying (follow up 1 day). Another study reported no advantage for providing exercise and continence management over standard care.

Interventions targeting impaired nutrition

There is an assumed relationship between poor nutrition and pressure area development, but it is based on limited evidence. Five studies of 1475 participants (66% in acute care) were included. Four of the studies showed no benefit of nutritional support. One study (the largest with a low quality score) reported that an oral nutritional supplement reduced pressure area incidence.

Interventions targeting skin health

Dry sacral skin is a known risk factor for pressure area development.

Three studies of 819 participants (54% in acute care) were included. Each of the studies evaluated specific topical agents (rather than simply skin moisturising). The two studies comparing an agent with a placebo cream reported a reduction in pressure areas.

Original Authors' Conclusions

- Included studies were generally of poor overall quality.
- Mattress overlays are effective in operating theatres.
- Specialised foam and sheepskin overlays are more effective than standard mattresses.
- Dynamic support mattresses are more expensive but preferred by patients than dynamic overlays.
- The difference between dynamic supports and static supports is not clear, cost may be a factor in selection.
- Nutritional support may be useful (on the basis of one RCT only).
- Without the likelihood of harm and significant expense moisturising skin is a reasonable strategy to use to assist in minimising pressure area development.
- The authors did not clearly conclude regarding the evidence for frequency of turning patients, stating that it is unknown as to which turning protocols are more effective than others.

The authors mentioned that established guidelines may not be well implemented, that staff believed they lacked education in the area and that more effective knowledge translation of the evidence was necessary.

Critical Appraisal:

Validity

The strengths of this review included:

- The comprehensive search strategy used (although the report did not indicate whether authors and other experts were contacted).
- The emphasis on quality assessment of included trials using a published checklist.
- The inclusion of length of follow up in the presentation of the results.

Some issues which were not adequately described in this review are as follows:

- The authors did not report whether turning was included as part of the interventions in the included trials. Turning patients at intervals is considered standard practice for pressure area prevention.
- The results reported by the authors were whether or not pressure area incidence had been reduced by the interventions in the included studies. There appears to have been no critical appraisal of the reported results, no attempt to compare the data objectively or to report data (point estimates and variability). The clinical importance of results was not evaluated.
- The methodology did not involve independent assessment of eligibility, quality assessment of studies and data extraction by more than one researcher.

- The report does not mention whether the studies evaluated incidence of pressure areas on any part of the body or whether incidence on specific body areas were evaluated.

Interpretation of Results

The reporting of results simply as whether or not pressure area incidence was reduced precludes a precise conclusion being drawn. However, with the exception of the conclusion drawn regarding nutritional support, all other conclusion appear to be warranted. The authors concluded that nutritional support may be useful in reducing pressure care incidence when only one low scoring trial out of 5 trials actually reported reduced incidence.

The issue of concern in this CAT is evidence for pressure area reduction in acute care. When considering only those studies which included participants predominantly from acute care setting but excluding studies in operating theatres, the following conclusions are reached.

- Static vs standard support surfaces. Six out of 10 trials reported reduction in pressure area incidence from static surfaces.
- Dynamic vs static support surfaces. One out of 8 trials reported that a dynamic support surface (alternating pressure mattress) reduced pressure area incidence compared with a static support, the remaining trials reported no difference between surfaces.
- Rotating vs standard (hospital or ICU) beds. All three trials reported no difference between support surfaces.
- Nutritional support. Only 1 of 4 trials reported a decreased incidence in pressure area incidence due to nutritional support.
- Topical agents. Both trials comparing a topical agent with placebo reported decreased pressure area incidence. The third trial compared topical agents and found no difference between agents.

The overall findings of the authors remain consistent when considering only those trials where participants were in acute care setting (but not operating theatres).

Summary/Conclusion:

The evidence suggests that, in adult acute care settings:

- Both dynamic and static support mattresses and overlays decreased pressure care incidence when compared to standard care.
- There may be no difference between dynamic and static surfaces, nor between overlays and mattresses.
- There is insufficient evidence to support the use of nutritional support or to recommend turning as interventions to reduce pressure areas. Topical agents may reduce pressure care incidence.

IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH

The aim of this CAT was to identify the most effective support surfaces to use with children in acute care settings to prevent pressure areas. No studies specifically addressing children were located. Two systematic reviews evaluating support surfaces in various settings in adult populations were located and included in this CAT. The conclusions reached following appraisal of these reviews are that, in adults, in acute care, specialised support is more beneficial than standard support. There appears to be no difference between high versus low tech supports nor between mattresses versus overlays in pressure area prevention. An additional conclusion is that patients may prefer mattresses to overlays.

A major issue to consider in implementing these findings in an acute paediatric setting is the weight of the user. Manufacturers recommend that, for some dynamic support surfaces to be effective, users weigh more than 20kg. Dynamic support surfaces therefore may not be valid options for many children. This consideration may apply to other support surfaces also. Further research in children is necessary.

Another important issue to pursue in further research in both children and adults is the contribution of turning and the most effective turning frequency both independently and in combination with support surfaces. Further research is also required to evaluate the cost effectiveness of the various options and user preferences.

Knowledge translation into clinical practice is also an important consideration. A general perception regarding pressure area prevention is that knowledge translation into practice is not maintained and that over the longer term recommended practices are not sustained. This may be due, in part, to the complexity of pressure area management, the volume of low quality studies where interpretation of results is not entirely conclusive, and the number of possible pressure care options. Another factor may be the pace of work in acute care settings.

This CAT provides reasonably clear direction about pressure care management and also for future research. It appears that any specialised support surface is likely to be effective. Selection of low versus high tech and mattress versus overlay may, until further research is available, be a decision based on availability, cost, patient weight and preferences, clean-ability and durability.

The next step in implementing these findings is negotiating management guidelines with respect to selection of support surfaces, the timing of implementation, and other preventative mechanisms such as turning regimes and skin care. A common theme, both anecdotally and from the two included reviews, is the imperative for implementing pressure area prevention guidelines along with strategies for staff education which mandate ongoing review of protocols and implementation to ensure evidence based practices are sustained.

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