CRD summary
The authors concluded that moderate-strength evidence suggested that implementing multicomponent initiatives for pressure ulcer prevention in acute and long-term care settings could improve the processes of care and reduce pressure ulcer rates. This was a largely well-conducted review and the authors’ conclusion seems reliable.

Authors' objectives
To evaluate multicomponent interventions to reduce in-facility pressure ulcers and identify factors leading to their successful implementation.

Searching
CINAHL, The Cochrane Library, EMBASE, and MEDLINE were searched from 2000 to 2012 for articles published in English. Search terms were reported in an online supplement. Previous reviews and gray literature were searched to identify further studies.

Study selection
Eligible for inclusion were all studies of multicomponent interventions (such as evidence-based clinical decision tools combined with training and education) aimed at pressure ulcer prevention in adults in acute and long-term care settings. Studies were restricted to those conducted in the USA. The primary outcome of interest was pressure ulcer rates six months after implementation; the secondary outcome of interest was process-of-care.

In included studies, interventions in acute and long-term care settings had components of multidisciplinary teams, skin champions, education/training, risk assessment tools, review of wound care products, upgrade automated systems (information technology), protocol implementation, various patient care interventions (reported in the paper), integration of new reporting, and audit/feedback. Over half of the included studies used the Braden Scale for Predicting Pressure Sore Risk. Populations were described at the organisational level in a variety of settings and sizes. Process-of-care outcomes included communication among patient caregivers, improved clinician behaviour, and streamlining of online policies and documentation processes. Studies conducted in long term care settings used state-level guidance.

Two independent reviewers selected the studies for inclusion.

Assessment of study quality
Study quality was assessed using the 19-item SQUIRE (Standards for Quality Improvement Reporting Excellence), with particular focus on reporting of four items: intervention description; changes in the care delivery process and patient outcome measures; study limitations; and reasons for differences between observed and expected outcomes. Studies reporting 8 to 10 items were considered high quality, those with 5 to 7 items were moderate quality, and those with fewer than 5 items were low quality.

Two reviewers assessed study quality.

Data extraction
Data were extracted to present mean reductions in pressure ulcer rates, together with the range. Data were also presented on barriers and facilitators for intervention implementation.

Two reviewers extracted the data.

Methods of synthesis
A narrative synthesis was presented.

Results of the review
Twenty-six studies were included. The total number of participants was unclear. Eighteen studies were conducted in
acute care and eight in long-term care settings. There were three randomised controlled trials (RCTs); one controlled before-and-after study; and 22 time-series designs. Nine studies were considered to be high quality, 14 studies were moderate-quality, and three studies were low-quality.

Some improvement in pressure ulcer rates was seen in 24 studies. Statistically significant reductions were reported in 11 studies (median reduction 82%, range 67% to 100%). Thirteen studies did not reach statistical significance, but five of these reported improvements in pressure ulcer rates and process-of-care measures. Two additional studies reported improved process-of-care outcomes. Benefits were seen in studies in acute and long-term care settings. No harms were reported.

The key components of successful implementation were the simplification and standardisation of pressure ulcer-specific interventions and documentation, involvement of multidisciplinary teams and leadership, designated skin champions, on-going staff education, and sustained audit and feedback. Two studies suggested that interventions were easier to sustain if they were not dependent on particular staffing levels.

Cost information
Four studies identified significant cost savings based on different estimates of the cost of ulcers.

Authors' conclusions
Moderate-strength evidence suggested that implementing multicomponent initiatives for pressure ulcer prevention in acute and long-term care settings could improve the processes of care and reduce pressure ulcer rates.

CRD commentary
The review question was clear. Inclusion criteria were adequately specified to enable replication. A number of relevant data sources were searched, including gray literature, but the restricted inclusion to published studies in English meant that relevant studies may have been excluded. The authors acknowledged possible publication bias. The review process was clearly reported and included attempts to minimise error and bias.

Study quality was reasonable; the results of this assessment were presented in full. Study characteristics were reported. The method of synthesis appeared appropriate.

The authors' conclusion reflects the evidence presented and seems reliable.

Implications of the review for practice and research
Practice: The authors stated that clinicians should be encouraged to report the outcomes of pressure ulcer prevention strategies (regardless of success level) to enable continued understanding of the contextual influences on implementation.

Research: The authors stated that further studies of system-level and patient-level interventions to prevent pressure ulcers were needed. Future research should report on strategies to sustain the momentum of interventions.

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Bibliographic details

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Linked records
- Promoting a culture of safety as a patient safety strategy: a systematic review
In-facility delirium prevention programs as a patient safety strategy: a systematic review
Medication reconciliation during transitions of care as a patient safety strategy: a systematic review
Preventing in-facility pressure ulcers as a patient safety strategy: a systematic review
Inpatient fall prevention programs as a patient safety strategy: a systematic review
Patient safety strategies targeted at diagnostic errors: a systematic review
Hospital-initiated transitional care interventions as a patient safety strategy: a systematic review

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Other publications of related interest


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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.